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### Activity 6: Comparison & Recommendation of Learning Management System

In an attempt to find a suitable Learning Management System (LMS) to recommend, five Learning Management Systems were compared. A table was created to compare the five Learning Management Systems: Angel, Desire2Learn, Blackboard, Moodle, and Sakai. After carefully examining and analyzing the LMS comparison table, it was found that Moodle was the most appropriate LMS to recommend. Moodle shared many of the similar features that the others have, however, it also met or exceeded other features that the authors thought made Moodle the most appropriate LMS to be recommended; these essential features are accessibility compliance, customization of course sites, and pricing.

**About Moodle**

Moodle is an open source software that is extremely flexible and accessible. It can be downloaded from almost any computer and is suitable for one teacher, school districts or even college and university campuses.  Moreoever, the continued support and the exponential growth of people and institutions using Moodle has enabled it to grow and develop into a noteworthy and competitive choice when it comes to Learning Management Systems.

**Meeting the Essential Features**

As mentioned above, there are many types of features in an LMS, however, for this particular assessment, the authors decided to focus on accessibility, customization of design, and pricing. Moodle meets the basic requirements of section 508 accessibility standards. Additionally, because Moodle is an open source software, the institution can modify or alter Moodle's program codes to make it fit its institutions' accessibility needs without having to

contact the vendors or a third party. Therefore Moodle's accessibility has the capability to go beyond basic compliance. Moodle also allows instructors to customize their course sites by using either the default templates or creating their own. Customization of course sites is more than just aesthetics, it also allows the instructor to design or organize the course site to be more usable and accessible for their students. Accessibility and usability of a course site are inter-related to how the instructor or program designs the course site. Lastly, the pricing, or the lack of license fee was another feature that made Moodle a LMS to recommend. Not having to worry about increases in a licensing fee makes Moodle a very attractive LMS to adopt. Overall, Moodle's accessibility, customization of course sites, and very affordable pricing met if not exceeded the authors' essential features of a LMS.

**Other Reasoning & Conclusion**

The authors also admit that the reputation and widespread use of Moodle as an LMS in school districts, businesses, and higher institutions also made Moodle more attractive and safe to adopt. Not only is Moodle affordable, section 508 complaint, has most of the same features as a licensed LMS, and can also be used with any modern web browser, but it is also widely used and well recommended by many other institutions. Therefore, with these features and reasoning, the authors recommend Moodle as a most suitable Learning Management System.

| Product Name | ANGEL 6.3 | Blackboard Academic Suite | Desire2Learn 7.4 | Moodle 1.5.2 | Sakai 2.0 |
|---|---|---|---|---|---|
| **Communication Tools** | | | | | |
| **Discussion Forums** | Discussions can be sorted and viewed by by date, by thread, by title, by author, by group, by the type of post. Instructor can create discussion for courses, small groups, and or academic events. Instructors determine student level of access to discussion. Media maybe attached to post. The entire discussion can be saved or printed for off-line reading. Instructors can set up discussion forums so new posts are sent to the email of each student. Students can enable or disable posts to be sent to their email. Instructors can limit discussions to specific time periods. The discussion forums can include a moderation function (screen all posts). | Discussions can be viewed by date and by thread. Instructors can associate a discussion with any course content. Instructors can enable or disable anonymous posting, and determine whether student posts are re-editable. Posts can contain URLs, file attachments and may contain HTML. Instructors may create separate discussion environments for small groups of students and teaching assistants. Discussion threads are expandable and collapsible to view an entire conversation on one screen. | Discussions can be viewed by date, by thread, by title or by author. Instructors may create separate discussion environments for small groups. Discussion threads are expandable and collapsible to view an entire conversation on one screen. Posts can include attachments or URL. The entire discussion can be saved or printed for off-line reading. . Instructors can limit discussions to specific time periods. | Discussions can be viewed by date, by thread, by author. Instructors can split discussion into a new discussion. Instructors can determine the level of involvement for students. Posts can include attachments, an image or URL. The discussion tool includes a formatting text editor. Posts may be peer reviewed by other students. Students may receive posts to the discussion forums as daily digests of subject lines or whole posts as email. Students can subscribe to forum RSS feeds. | Discussions can be viewed by category and thread. Posts can include attachments and URLs. Posts can be either plain text, formatted text, or html. Instructors can determine the level of involvement by setting the permissions (read, write, delete, etc.) for student posts. Discussion threads are expandable and collapsible to view an entire conversation on one screen. |
| **Internal Email** | Students can use the Internal email feature to email individuals and groups. Students can forward all messages to an external email account. Students can attach and archive files and forward messages to an external email account. The system can generate automated e-mail reminder messages. | Students can use the Internal email feature to email individuals. Students can attach files to emails. | Students can email individual students, instructors or groups. Administrators can choose to integrate an existing e-mail system into the internal e-mail feature. | Students must have an external Internet email address. | Students and instructors must have an external Internet email address. |
| **Real-time Chat** | Private rooms, private messages, ability to ignore specific participants, and customized chat windows. Instructors can moderate chats, monitor chats, suspend students from the chat rooms and view chat logs. Instructors can schedule chats using the course calendar. The system creates archive logs for all chat rooms. The chat tool supports having many simultaneous group discussions. The chat tool also supports a structured way for students to ask questions and instructors to provide answers. There is also a built-in instant messaging tool. | Unlimited simultaneous group discussions and private messages. Instructors may moderate chats and suspend students from the chat rooms. The system creates archive logs for all chat rooms. Instructors can view chat logs and share these with students. The virtual classroom tool supports a structured way for students to ask questions and instructors to provide answers. | The chat tool supports private rooms and private messages. Instructors can moderate chats, monitor chats, suspend students from the chat rooms and view chat logs. The system creates archive logs for all chat rooms. There is a built-in instant messaging tool. | The chat tool supports images. The system creates archive logs for all chat rooms. Instructors can view chat logs and share these with students. Instructors can schedule chats using the course calendar. Students can see who else is online within their course and send them an instant message. | There is a basic chat tool. Users can create new rooms. The system creates archive logs. Site participants can see who else is online within their course. |
| **Video Services** | Instructors can include real-time video with slide or web presentations within the optional synchronous tools. Course developers can integrate streamed Real audio and video into a course. | No | No | No | No |
| **Whiteboard** | The software supports a whiteboard. The whiteboard supports image uploading and annotation, PowerPoint or webpage slideshows, group web browsing, polling and instructor moderation. The software can archive a snapshot of whiteboard sessions for future viewing. The software supports group web browsing. | The software supports a whiteboard that can have multiple instances in the same course. Each group can have its own shared file exchange, private group discussion forum, synchronous tools, and group email list. The software supports group web browsing. The software can archive a recording of whiteboard sessions for future viewing. | The software supports a whiteboard that can have multiple instances in the same course. The whiteboard supports image uploading and annotation. | No | No |
| **Student Involvement Tools** | | | | | |
| **Groupwork** | Instructors can assign and monitor students to groups or the system can create groups of a certain size or a set number of groups. Each group can have its own shared group presentation folder, discussion forum, chat room, group email list, polls, assignments, activities, assessments, shared calendar events, file exchange, assigned group leadership. | The software supports assigning students into groups by the instructor. Each group can have its own shared file exchange, private group discussion forum, synchronous tools, and group email list. | Instructors can assign students to groups or the system can create groups of a certain size or a set number of groups. Each group can have its own shared group presentation folder, discussion forum, chat room, group email list, polls, assignments, activities, assessments, shared calendar events, file exchange, assigned group leadership. Instructors can assign grades to entire groups. | Instructors can assign students to groups or the system can randomly create groups. Groups can either be defined at the course level and apply across all activities that support them, or at the individual activity level. In addition, the system supports a workshop module aimed specifically at peer review of student work. | The software allows instructors or students to create groups through the use of distinct 'project' sites, separate from the main course site. Each project site can have its own shared file exchange, discussion tool, calendar, announcements, chat, and group email list. |
| **Self-assessment** | Instructors can create anonymous, timed or untimed self-assessments that students can take multiple times. The system automatically scores multiple choice, true/false, and multiple answer type questions and can display instructor-created feedback and links to relevant course material. Instructors can create a database of questions that the system will randomize to create a unique self-assessment for each student. Instructor may create assessments that route the student to additional assessment, modules, or learning path based on the results of the assessment. | Instructors can create anonymous timed or un-timed self-assessments that students can take multiple times. The system automatically scores multiple choice, multiple answer, ordering, matching, fill-in-the-blank, and true-false questions, and can display instructor-created feedback and links to relevant course material. Instructors can create a database of questions that the system will randomize to create a unique self-assessment for each student. | Instructors can create timed or un-timed self-assessments that students can take multiple times. The system automatically scores multiple choice, true/false, multiple answer, fill in the blank, matching, and ordering type questions and can display instructor-created feedback, explanations, hints and links to relevant course material. Instructors can create a database of questions that the system will randomize to create a unique self-assessment for each student. Regular expressions can be used to create unique variables and answers for every question. | Instructors can create timed or un-timed self-assessments that students can take multiple times. The system automatically scores multiple choice, true/false, and short answer type questions and can display instructor-created feedback, explanations and links to relevant course material. | Instructors can create timed or un-timed self-assessments that students can take multiple submissions. The system automatically scores multiple-choice, true/false, matching, and fill-in the blank questions and can display instructor-created feedback, explanations and links to relevant course material. |
| **Student Community Building** | Students can create online clubs, interest, and study groups. Students can send email to their groups, use a shared chat space, calendar and announcements, and share material privately within the group. Students from different courses can interact in a system-wide chat rooms or discussion forums. | Students can create online clubs, interest, and study groups at the system level (only available in the expanded Suite). | Students from different courses can interact in system-wide chat rooms or discussion forums. Students can create online clubs, interest, and study groups at the system level. | No | The system supports the ability to allow users to create project sites where they can collaborate. Project sites include a calendar, announcements, a resources folder to share documents, email list, chat, and a discussion board. |
| **Student Portfolios** | Students can create a personal home page. Students have a private folder and a team folder for displaying their work. Students can create a private folder, which is accessible system wide, to display their work. Students can share portions of their ePortfolio with others by publishing their work. | Students can create a personal home page. Students may create system-wide portfolios, which may be private, shared with courses, other users or the public. Students can contribute links, documents or template-driven content to their portfolio. Portfolios can be exported (only available in the expanded Suite). | Students can create a personal home page. | Students can create a personal home page. | OSP, an open source portfolio tool, is available for Sakai 1.5.1. OSP will be available for Sakai 2.0 in the summer of 2005. Additionally, students can create a personal home page. Personal home pages may include their photo, personal information, and links to websites. |
| **Administration Tools** | | | | | |
| **Registration Integration** | Students can self-register. Student self-registration is time limited. Administrators and instructors can batch add students to the system and then send a system generated email message to students notifying them of their enrollment. Administrators can transfer student information bi-directionally between the system and an SIS. The software supports integration with a number of ERP, HR systems. System has been integrated to SCT Banner, Peoplesoft, Datatel and custom Legacy systems. | Administrators and Instructors can batch add students to a course using a delimited text file or students can self-register. Administrators can batch create courses, users, and enrollments in the system. Administrators can transfer student information bi-directionally between the system and an SIS in batch or in real time. The system supports the use of SOAP-based data integration. Integration with Banner and Datatel SIS is available through existing plug-ins (note this is only available in the Enterprise-level license). | Students can self-register. Administrators can batch add students to a course using a delimited text file. The software supports integration with SCT Banner, Peoplesoft, Datatel, and Campus Pipeline. The software also supports customized integration with other SIS or portal systems. Administrators can transfer student information bi-directionally between the system and an SIS. The system provides registration progress tracking. The software is compliant with the IMS Enterprise Specification for Student Data. | Instructors can batch add students to a course using a delimited text file or students can self-register. The software supports integration with external information systems through an event-driven API or through a tool that is based on scheduled system exports. | Students can self-register. Administrators can batch add students to the system and courses using providers or scripts. |
| **Hosted Services** | The product provider offers a hosted system that includes managed software installation, 2+ GB storage space, 40 GB bandwidth usage, redundant Internet connections, redundant and conditioned power, fault-tolerant servers with fail-over capability, 24x7x365 monitoring, nightly tape backups, and a secure facility. | The product provider offers a hosted system that includes 99.75% Service Level Agreements with guaranteed system availability and performance on a network of high-performance, fault-tolerant servers with fail-over capability including load balancing and clustering, managed software installation, redundant Internet connections, redundant and conditioned power, redundant hosting platforms, 24x7x365 monitoring, 10GB – 20GB storage space to start, managed bandwidth usage, redundant T3 connections, daily data backups and weekly tape backups, and a secure facility with environmental control and a modern alarm/security system. | The product provider offers a hosted system that includes 24x7x365 monitoring, redundant hosting platforms, intrusion detection, nightly backups, options for geographical disaster recovery, and service level agreements on a network of high-performance, fault-tolerant servers with fail-over capability with redundant Tier 1 network connections. | The product provider and partner companies offer hosted systems that include: managed software installation, service level agreements on a network of fault-tolerant Unix servers in a secure facility with environmental control, redundant Tier 1 network connections and power, 10Gb bandwidth per month and nightly backups. Hosting contracts are fixed per month and allow unlimited courses. | Institutions and other organizations can purchase hosting and support services from a number of Sakai Commercial Affiliates including Embanet, which provides daily and offsite tape backups, system clustering, managed bandwidth usage, and multiple Internet service providers to provide redundant fail-over capabilities. |

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| **Course Delivery Tools** | | | | | |
| **Course Management** | Instructors can selectively release materials, assessments, announcements, and emails based on previous course activity or specific start and end dates. Instructors can personalize access to specific course materials and assessments. Instructors can set up specific course content that is released on a specific date and that students must complete before they continue with course. Instructors can link discussions to specific dates or course events. Instructors can design courses for instructor facilitated learning or system managed self-study. | Instructors can selectively release assessments, announcements and other materials based on previous course activity or specific start and end dates. Instructors can specify start and stop dates for the entire course. | Instructors can selectively release course material, quizzes, assignments, announcements and tools. Instructors can link discussions to specific dates. The system can synchronize course dates defined by the institutional calendar. Instructors can set up specific course content that is released on a specific date and that students must complete before they continue with course. Instructors can design courses for instructor facilitated learning or system managed self-study. | Instructors can link discussions to specific dates or course events. The system can synchronize course dates defined by the institutional calendar. | Instructors can selectively release assignments, assessments, and announcements based on specific start and stop dates. |
| **Instructor Helpdesk** | Instructors can attend one to three day face-to-face training workshops, take an online course, access an online instructor training guide, help, and context sensitive help, and form online groups to share documents, and other collaborative tools using discussion forums, chat rooms, and other collaborative tools. Instructors can share instructional content and learning objects which reside is a searchable database with instructors in their organization. Instructors can save content as exemplars of best practices in instructional design, which are viewable by other instructors or developers. | Instructors can access an online instructor manual, product knowledge base, and reference center, and numerous instructor support communities to share information in a number of discipline-specific or general interest forums. Instructors can contact the 24/7 technical support helpdesk if their organization purchased that level of support. | Instructors can access an online instructor manual, context sensitive help, take a free online course, and subscribe to an instructor mailing list. The product provider can setup an instructor group so instructors in the organization can access faculty resources and discussions. Instructors have access numerous instructor support communities to share information in a number of discipline-specific or general interest forums. Depending on security permissions, instructors can share instructional content and learning objects which reside is a searchable database with instructors in their organization. | Instructors can access the online instructor manual, context sensitive help, and an instructor support community hosted on the product provider's site. | Instructors can access the system's help which provides context sensitive help. A knowledge-base and user support communities are also evolving within the wider open source community. Institutions can link to their campus help desk within the help tool and direct users to technical and other user support services. |
| **Online Grading Tools** | When an instructor adds an assignment to the course, the software automatically adds it to the online gradebook. Instructors can mark all assessments not automatically scored online. Instructors can assign partial credit for certain answers and provide feedback. Instructors can add the grades for offline assignments to the online gradebook or can manually edit all grades. Instructors can view grades in the gradebook by assignment, by student, and for all students on all assignments. Instructors can export a comma delimited version of the gradebook to an external spreadsheet program. Instructors can create a course grading scale by percentages, letter grades or pass/fail metrics. The software automatically calculates the minimum, maximum, and average grade on each assignment. The gradebook supports the creation of custom columns which can contain either grade information or other instructor-determined details. | Instructors can mark paragraph questions and return assignments turned in through the assignment dropbox. Instructors can provide feedback on all assignments. Instructors can publish student submissions as examples for other students to see. Instructors can add the grades for offline assignments to the online gradebook or manually edit all grades. Instructors can import and export the gradebook from/to an external spreadsheet program. Instructors can create a course grading scale by raw scores, percentages, letter grades or pass/fail metrics. When an instructor adds an assessment or assignment to the course, the software automatically adds it to the gradebook. The gradebook supports the creation of custom columns which can contain either grade information or other instructor-determined details. The software automatically calculates the average grade on each assignment. Instructors can download the results of a test across sections of a course and across semesters. Instructors can aggregate data and perform item-level analysis of individual survey items across the entire system. | Instructors can mark assignments online or manually edit all grades. Instructors can provide feedback on all assignments. When an instructor adds an assignment to the course, the software automatically adds it to the gradebook. Instructors can use the gradebook for basic statistical analysis and final grade calculation. The software automatically calculates the minimum, maximum, and average grade on each assignment. Instructors can assign partial credit for certain answers. Instructors can add the grades for offline assignments to the online gradebook or manually edit all grades. Instructors can view grades in the gradebook by assignment, by student, and for all students on all assignments. Instructors can export a comman demlimited version of the gradebook to an external spreadsheet program, Instructors can export a version in PDF format. Instructors can provide feedback on all assignments. Instructors can create a course grading scale by percentages, letter grades or pass/fail metrics. | When an instructor adds an assignment to the course, the the software automatically adds it to the gradebook. Instructors can mark assignments and all assessments not automatically scored online. Instructors can assign partial credit for certain answers. Instructors can add the grades for offline assignments to the online gradebook. Instructors can export a comma-delimited version of the gradebook (or a real .xls spreadsheet) for use in an external spreadsheet program. Instructors can provide feedback on all assignments. Instructors can search the gradebook to find all students who meet a specific performance criteria, mark, or status such as exam completion. Instructors can create a course grading scale by percentages, letter grades or pass/fail metrics. | Instructors can mark assignments and short answer/essay tests online. Instructors can add the grades for offline assessments to the online gradebook by assessment, by student, and for all students on all assessments. Instructors can view grades in the gradebook by assessment, by student, and for all students on all assessments. Instructors can export the scores of the gradebook to an external spreadsheet. Instructors can manually edit all grades. Instructors can create a course grading scale by percentages, letter grades or pass/fail metrics. Instructors can create assignments that weigh various amounts of points. The software automatically calculates the overall grade of a student. |
| **Student Tracking** | Instructors can get reports showing the number of times and time and date on which each student accessed course content, specific course units, discussion forums, assessments, and assignments. Instructors can get a report that shows number of attempts and time per attempt on each assessment for individual students. Instructors can maintain private notes about each student in a secure area. Instructors can get a report that summarizes individual student performance on assignments. Instructors can set a flag on individual course components to track the frequency with which students access those components. Instructors can set up custom reports. Instructors can share tracking information with students. Instructors can get a report displaying the date/time each student accessed a specific course assessment, assignment, or self-assessment. Instructors can view all student folders simultaneously. Administrators can monitor students who are currently logged in to the course. Instructors can summarize all discussion posts to date by group or by student. | Instructors can get reports showing the number of times and date on which each student accessed course content, specific course units, discussion forums and assignments. Instructors can set a flag on individual course components to track the frequency with which students access those components. | Instructors can view reports of student session tracking, login/logout dates and times, dropbox submissions, and discussion participation as well as both individual and aggregate student performance data on assessments, number of attempts and time per attempt. Instructors can share this tracking information with students. | In version 2.0 instructors have access to 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 students involvement including postings etc on one page. | None |
| **Automated Testing and Scoring** | Instructors can create randomized unit-specific automatically scored true/false, multiple choice, multiple answer, fill-in-the-blank, matching, short answer, and calculated answer questions containing images, video, other media files.Tests can be weighted and instructors can create different levels of feedback messages. Instructors can import questions from existing test banks as well as create course specific, and system-wide test banks and use these test banks to create tests for students. Instructors can also create survey questions in the gradebook and the system provides analysis data for the surveys. The instructor can set access time limits. Instructors can restrict access to tests. Instructors can use the HTML editor to enable students to enter and edit mathematical notations. Instructors can associate a test with competency level demonstrated and can release additional materials and test based on level. The system supports proctored exams and the proctor can turn off browser controls during the exam. Instructors can override the automated scoring and determine how to communicate test results to students. Instructors can lock students out of the course content for the duration of an exam. | Instructors can create randomized true/false, multiple choice, multiple answer, ordering, fill-in-the-blank, matching, and short answer/essay questions containing images, audio, video, or Flash. Instructors can differentially weight tests. Instructors can create different levels of feedback messages. Instructors can import questions from existing test banks. Instructors can also create survey questions.The system provides analysis data for surveys and test item results can be exported. Instructors can set dates and times for student access tests and set time limits on a test. Instructors can use passwords to restrict access to tests. Instructors can use the MathML and WebEQ equation editors to enable students to enter and edit mathematical notations. Instructors can create unit-specific tests or course-level tests. | Instructors can create assessments that use the following types of questions: True/False, Fill in the Blank, Matching, Multiple Choice, Multiple Select, Ordering, Arithmetic, Significant Figures and Short/Long Answer. Custom questions types can also be defined. Test questions can incorporate images, sound, video and other media types. Questions can be built with the tool or instructors can import and export questions from external test banks in the IMS QTI specification format. Questions can be randomized to provide different questions to different students. Random values can be generated for variables to provide different questions to different students. Instructors can set a time limit on a test. Assessments can be restricted by IP address or a password. Assessments can be shared across several organizational units, and data can be aggregated during report generation. Instructors can customize reports on user and question data that can be exported. Instructors can override the automated scoring and determine how to communicate test results to students. Instructors can weight assessments according to a grading scheme. Students can also be locked out of the instant messaging tool and have their copy/paste and print tools restricted while taking a quiz. Instructors can also create survey questions. | In version 2.0, instructors can create automatically scored, randomized True/False, Multiple Choice, and Short Answer type quizzes. Quizzes can have a limited time window. At the instructor's option, quizzes can be attempted multiple times, and can show feedback and/or correct answers. Attempts can be cumulative, if desired, and finished over several sessions. | None |

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| **Curriculum Design** | | | | | |
| **Accessibility Compliance** | The software complies with Section 508 of the US Rehabilitation Act and with the W3C Priority Level I items and most Level II and III items and the WAI WCAG 1.0 Level A guidelines. The software implements the following features: custom alt tags to uploaded images, system wide alt tags, aural style sheets, an HTML-based chat option that are usable with assistive technologies, collapsible menus, content available without color in a high contrast color scheme, content is only presented in text and graphics, content readable without style sheets, data tables that are optimized for use with screen readers, the software does not require frames, consistent use of form labels, keyboard access to all utilities and chat, table-based layouts compatible with a screen reader, support for most screen magnification software, software can detect screen readers and then offer a version of the site with less Javascript to improve access, compliant web templates, allowing invisible navigation links to be used by screen readers, and the ability to suppress Java applets and to increase font size. The software includes an accessibility setting to optimize the use of various assistive technologies. | To comply with Section 508 of the US Rehabilitation Act, the software implements the following features: a tool for instructors to add alt tags to uploaded images, alt tags on all system images, data tables that are optimized for use with screen readers, documentation to assist students and instructors in the use of the assistive technologies the software supports, appropriately titled framesets that describe the functionality of the frames layout, and support for most screen reader technology. | To comply with Section 508 of the US Rehabilitation Act, the software implements the following features: alt tags on all system images, an authoring tool that enables course developers to create compliant web-based content, style sheets, appropriately titled framesets that describe the functionality of the frames layout, data tables that are optimized for use with screen readers, content available without color, personal preferences for tool display and content readable without style sheets. Non-visual navigation links are used throughout the site to improve screen reader usability. | To comply with Section 508 of the US Rehabilitation Act, the software implements the following features: alt tags on all system images, and data tables that are optimized for use with screen readers. The system can also filter all user supplied inputs through W3C Tidy program to convert it to valid XHTML code. | To enable accessibility, the software implements the following features: alt tags, table headings, and form labels. |
| **Course Templates** | Instructors can use templates to create course content. Instructors can categorize course content. Course content may be referenced or uploaded through a form chosen from a system-wide, department-specific, course-specific, or personal learning object repository/content library. Instructors can clone and modify the default templates. Instructors can create new content templates. Instructors can incorporate course functions into specific course templates. | Instructors can use templates to create course content. The templates include a rich text content editor. Instructors can categorize course content as announcements, calendar entries, course units, discussion forums, handouts, instructor biography, lecture notes, links, syllabus and course descriptions, tips, FAQs and resources. Instructors can create new content templates. Course Creation Wizard enables instructors to easily set up a course using templates. Course content may be uploaded through a form or WebDAV. | Course templates containing either layout or content can be created at any level above the specific section level. Instructors can create announcements, calendar entries, discussions, links, syllabus, course descriptions and other course content using templates that include a WYSIWYG content editor, or upload and choose content from the system-wide content library. Instructors can create new content templates. Instructors can incorporate course functions into specific course templates. Course content may be uploaded through a form, uploaded through WebDAV. | | |
| **Curriculum Management** | The system supports management of curriculum and competencies. Instructors can specify prerequisites and sequence of each course within the curriculum. Instructors can specify multiple paths through courses for different skill levels or job functions. Instructor can map specific learning objects to individual training needs. | | Instructors can specify multiple paths through a course for different skill levels or job functions. | | |
| **Customized Look and Feel** | The system provides over ten default course look and feel templates. Institutions can create their own look and feel templates across the entire system. Instructors can alter the appearance of their course. Administrators and instructors can clone and modify existing look and feel templates. Instructors can change the navigation icons and color schemes, the background, and the availability of tab items for a course. Administrators can change the availability, order and name of menu items. | Institutions can apply their own institutional images, headers and footers across all courses. Instructors can change the navigation icons and color schemes and the order and name of menu items for a course. Each department can apply its own look and feel templates as well as institutional images, headers and footers. The system also supports role-based branding within one installation, changing the interface based on the users current role (only available in the expanded Suite). | The system can support multiple institutions, departments, or other organizational divisions on an individual server setup. Each unit can be separately branded. Distinct designs can also be applied at both the course and specific section level. The instructor can customize the appearance of a course by changing the order and name of menu items and the location and width of the navigation menu. Custom tools can be created and quickly added and removed from course or student home pages. Students can customize the sounds, colors, font sizes, and layout of the tools within the interface. Administrators can change the availability, order and name of menu items. | The system provides 10 default course look and feel templates. Institutions can create their own look and feel templates across the entire system. Institutions can apply their own institutional images, headers and footers across all courses. Instructors can change the the navigation icons, color schemes, and order and name of menu items for a course. | The system can support multiple institutions, departments, schools or other organizational units on a single installation. Each unit can apply its own look and feel templates as well as institutional images, headers and footers. Instructors can customize the left navigation menu of their sites by enabling or disabling tools, as desired. |
| **Instructional Standards Compliance** | The software has been issued a certificate of compliance with SCORM 1.2. The software supports the the IMS Enterprise 1.1 specification. The provider company supports migration between the following course management systems: BlackBoard or WebCT to ANGEL. | The software has been issued a certificate of compliance with SCORM 1.2 level LMS-RTE3. The system supports the following standards: IMS Metadata vocabulary, IMS Content Packaging 1.1.2, IMS Question &amp; Test Interoperability Specifications 1.2, IMS Enterprise Specification 1.01. | The software has been issued a certificate of conformance with SCORM 1.2 RTE 3 and SCORM 2004. The system also supports IEEE LOM, IMS Enterprise 1.1, IMS QTI 1.2, IMS Content Packaging. The system includes a tool to import courses from other learning platforms into Desire2Learn. | The software can import course content that is SCORM 1.2 or AICC compliant, and can export quiz content in IMS QTI 2.0 format. The provider company supports migration from BlackBoard. | Using the Melete open source lesson building tool, the system can export course content using the IMS Content Packaging standard. The system can import assessment content in the IMS QTI 1.2 format. |
| **Instructional Design Tools** | Instructors can create both linear and nonlinear learning sequences using a content library organized hierarchically by course, lesson, topic, and chunk. Instructors can organize learning objects into learning sequences that are reusable. Instructors can design lesson content customizable lesson templates. Instructors can access information and tips and context sensitive help, tutorials on creating a collaborative learning environment. Instructors can create relationships between assignments and required resources which can then serve as templates for future lessons. | Instructors can create both linear and nonlinear learning sequences using a content library. The product provider offers instructional design services for a fee to help instructors create their courses. Instructors can access information and tips and tutorials on instructional design and on creating a collaborative learning environment. Instructors can create relationships between assignments and required resources which can then serve as templates for future lessons. | The software provides lesson-level templates that include the ability to link to course tools in context. Instructors can create annotated bookmarks, one at a time, for specific courses. Instructors can create sequences using conditional release based on a user's past performance. The company offers course design services to assist organizations in creating their course material. | Instructors can create both linear and nonlinear learning sequences using a content library. Instructors can organize larning objects into learning sequences. The software supports constructivist and problem-based learning approaches. Instructors can create relationships between assignments and required resources which can then serve as templates for future lessons. | Instructors can create linear learning sequences organized hierarchically by course, lesson, and topic. |
| **Content Sharing/Reuse** | The system supports sharing content across course and institution boundaries. The system provides a central content repository where course content files can be stored and accessed by other instructors. Instructors can designate their files to be private or publicly accessible. Instructors can create links to content files in the central content repository so that changes made to the linked content are automatically displayed in their courses. | The system supports sharing content across course and institution boundaries. The system provides a central content repository where course content files can be stored and accessed by other instructors. Instructors can designate their files to be private or publicly accessible. Content files can also be shared with specific groups or users as well as individuals outside of the system. Instructors can create links to content files in the central content repository so that changes made to the linked content are automatically displayed in their courses. Tools are available to enable version tracking and linking to specific versions. | The system provides a central content repository where course content files can be stored and accessed by other instructors. The repository can be system-wide or for individual organizational units. Instructors can designate their files to be private or publicly accessible. Instructors can create links to content files in the central content repository so that changes made to the linked content are automatically displayed in their courses. Instructors can describe course content using metadata. | | |
| **Hardware/Software** | | | | | |
| **Client Browser Required** | The software supports IE 6.0+, Netscape 7.0+, and Firefox 1.0+ for Windows, Firefox 1.0+ and and Mozilla 1.0+ for Macintosh OS. | The software supports IE 6.0, Netscape 7.1+, and Firefox 1.0 on Windows PCs. The software supports Internet Explorer 5.2, Netscape 7.1, Firefox 1.0, and Safari 1.1 and 1.2 for Mac OS. | The software supports Internet Explorer 5.5+, Netscape 4.7+ and Mozilla 1+. | The software supports any browser supporting HTML 3 or higher and uses cascading style sheets (CSS) in browsers that support CSS. | The software supports Internet Explorer 5.5+, Netscape 7.1+, and Mozilla Firefox for Windows, and Netscape 7.1+ or Mozilla Firefox on the Apple OS. Some functions in Sakai will not work well or will not work at all in Safari or Internet Explorer for the Mac. Javascript must be enabled. |
| **Pricing/Licensing** | | | | | |
| **Costs** | The annual license fee is dependent on the number of user accounts. The annual license fee includes version upgrades and support for 2 administrators. | The annual license fee is based on FTE students in an institution. | Initial startup fee plus license fees are typically based on either an FTE or per user/enrollment depending on the client requirements. | The software is free and distributed under the GNU Public License. | The software is free and distributed under the Educational Community License Version 1.0. |

Resources

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