COMMONWEALTH of LEARNING

3WAYNET

COL LMS Open Source

June 25, 2003

COMMONWEALTH *of* LEARNING

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1. INTRODUCTION

This document describes the findings of a survey-style evaluation of Open Source Learning Management System Software commissioned by the Commonwealth of Learning from 3waynet Inc.

1.1 SCOPE

The study focused exclusively on open source technologies with no limitations on distribution. Consequently commercial products were expressly excluded from the evaluation.

The final product would aim to all major components that may be found in commercial LCMs but be available for free distribution by COL to partners for non-profit use. It would be feasible to copy the chosen application to CD/DVD and send to partners who could make it operational with reasonable, local IT skills.

This report represents a snapshot of a very active field. A year from now there will certainly be improvement among the current crop of candidates and new ones will emerge.

1.2 OBJECTIVES

The objectives of this document are:

- To identify criteria which will be useful in evaluating open source LMS
- To assess candidate LMS using the criteria.
- To recommend an LMS for installation and use at COL and in Commonwealth countries.

1.3 TERMINOLOGY

- LMS: Learning Management System. These typically contain features for administration, assessment, course management, possibly content management and authoring.
- LCMS: Learning Content Management System. These emphasize content management/authoring and include many features of an LMS

Both Categories Of Technology Were Considered For This Evaluation, But Few Of The Candidates Qualified As True Lcms.

2. EXECUTIVE SUMMARY

This report evaluates open source Learning Management Systems as of June 2003.

After developing evaluation criteria, we used COL Knowledge Finder and other online resources to identify a list of thirty-five candidate products.

This candidate list was screened using the evaluation criteria to create a short list of five candidates.

The short list was systematically evaluated using hands-on testing offered through demonstration user accounts to understand the product features. We also followed up by inspecting the online help, user and instructor documentation, and commentary of the user community in order to rate the short list candidates.

The top two candidates were:

1. ATutor
2. ILIAS

2.1 RECOMMENDATION

Based on its current capabilities, roadmap for future development, growing user community, and a successful installation in the 3waynet test environment, as well as a strong sense of being able to work well with the supplier, we recommend proceeding with Atutor.

3. METHODOLOGY

The following approach was used:

1. Develop Evaluation Criteria. In addition to our own direct experience, we relied on general searches using COL Knowledge Finder and Google to locate case studies, product comparisons, and discussion threads to establish a context for developing general criteria as well as a detailed feature list. Input from COL staff was solicited and included in developing the final set of criteria.

2. Identify Open Source Candidates. Leveraging the results of the criteria development step, we performed additional targeted searches for specific open source products in order to locate candidate technologies. In addition, we consulted with members of eLearning BC to solicit their input. Obvious dead-end or vaporware (early concept stage) projects were eliminated to produce the candidate list.

3. Filter Candidates to produce a Short List. We screened the candidate list by informally applying the evaluation criteria to create a short list for the purpose of a more systematic evaluation. The candidates that were excluded at this step suffered from a combination of weak features, limited documentation and support and limited adoption.

4. Systematic Evaluation of Features. Where possible, we obtained a demonstration user account and undertook basic familiarization with the product. We applied the Evaluation Criteria to rate each feature on a scale of 0 to 5 where 0 = non existent or poor, 3 = an average basic standard and 5 = exceeds standard expectation. Although the actual rating score was determined by our subjective experience with the product, we attempted to normalize the rating by employing the same perspective in each case. The outcome of this step was to complete the feature rating section of the evaluation spreadsheet.

5. Systematic Evaluation of General Criteria. Following the feature study, we examined the documentation, and other online resources to assess the other categories. Where information was limited, we contacted the developers to request more. The outcome of this step was to complete the general rating section of the evaluation spreadsheet

6. Recommendation. Any one of the top choices would probably serve the near term requirements of COL. We deferred the recommendation of the final choice until we could successfully install and use the basic features of the product in our own test environment.

4. CRITERIA AND RESULTS

This section provides definitions for the evaluation criteria and ends by consolidating the results.

4.1 GENERAL CRITERIA

4.1.1 Features and Functionality

See Feature Specific Criteria for details.

How robust is the feature set for the program?

Does it already include all of the teaching "tools" faculty need?

Does it include both synchronous and asynchronous communications tools?

Can data be imported and exported easily into/from the program?

4.1.2 Cost of Ownership

What is the cost and ease of implementation?

How fast can you be up and running?

What level of expertise is required?

What kind of support and assistance are available?

What are the costs for licensing, software, hardware and custom development requirements?

4.1.3 Maintainability and Ease of Maintenance

How many valuable resource hours will this take to administer and maintain at the server level?

How many valuable resource hours will this take to administer and maintain at the program level?

How granular and distributed is the administration (the more granular the better)?

Are all of the data processes automated and will they integrate easily with your other systems?

Does the program run on a server platform on which your staff already has excellent expertise?

4.1.4 Usability, Ease of Use, and User documentation

How available and accessible is end user documentation/support?

How responsiveness of will support be?

How available is documentation, how-to guides, training and online help?

Will the program require lots of training or is it fairly intuitive to use?

How long will it take faculty to set up their courses at a minimal level?

How well will this program help an average group of faculty deliver their materials online?

4.1.5 User Adoption / Current User Community

Is there a strong development community associated with the program?

Are comparable institutions currently utilizing the program?

4.1.6 Openness

How open is the source code really?

Is it written in a modular format that is designed for easy modification and new, custom modules?

Are there clear code specifications for writing new modules?

4.1.7 Standards Compliancy / Specification Conformance

Does the LMS adhere to specifications like SCORM, IMS, OKI, AiCC?

Can the LMS import and manage content and courseware that complies with standards regardless of the authoring system that produced it?

Is XML support available?

4.1.8 Integration Capacity

Has the application been integrated with other systems?

Does the solution allow for ready integration with other systems?

4.1.9 LOM integration

How available is compatible content?

What is the capacity to integrate with existing and newly created learning objects?

4.1.10 Reliability

Is the solution reliable?

4.1.11 Scalability

Is the program suitable for both small and large installations?

How easily does the solution allow for growth of users, content, functionality?

4.1.12 Intellectual Property Security

Are there tools for digital right management (DRM)?

Are the provisions for privacy issues?

4.1.13 Hardware and Software Considerations

Does the software run under an open source operating system?

Is there provision for platform solutions?

What are the client browser requirements?

What are the database requirements?

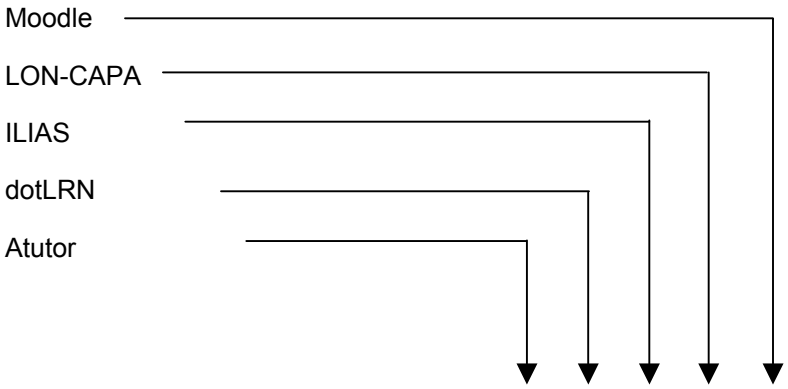
What additional server software is required?

What are the hardware specifications?

4.1.14 Multilingual Support

Does the system support additional languages?

4.2 GENERAL RESULTS



1	Features & Functionality	5	2	5	4	2	This is a roll-up from the Feature Result
2	Cost of Ownership	2	1	2	3	3	Similar complexity, except for dotLRN
3	Maintainability	3	1	3	3	3	Similar complexity, except for dotLRN
4	Usability	4	1	2	1	5	Moodle is more usable but this

							is due to fewer features.
5	Adoption	2	3	4	3	4	Moodle is very widely adopted
6	Openness	5	3	2	3	3	Atutor is developed in Toronto and should simplify joint development. ILIAS depends on more 3rd party components.
7	Standards	5	0	2	0	0	Accessibility standards, IMS/SCORM standards.
8	Integration Capability	1	0	1	0	0	Can develop API and extend via PHP
9	LOM support	4	0	1	1	0	Atutor will import external content in IMS/SCORM format this summer.
10	Reliability	1	4	4	4	4	5000+ users for some systems.
11	Scalability	1	5	5	3	3	Atutor is unproven and inherently less scalable.
12	IP security	0	0	0	0	0	Only copyright statement.
13	HW/SW	5	5	5	5	5	Linux/PC OK.
14	Multi-lingual	4	5	5	1	5	The leaders all provide multi-lingual support and translation guidelines.
	SCORE	**42**	**30**	**41**	**31**	**37**	

4.3 FEATURE-SPECIFIC CRITERIA

4.3.1.1 Security

- Encryption (encodes and decrypts messages)- Ability to accommodate privacy - note that full certificate-SSL (a protocol that encrypts a single TCP session) likely to be too slow for this purpose
- Authentication (verifies the identity of a user) --Username & password with forgotten password routine

4.3.1.2 Access

- Individual/Group Login and Password
- Assignable Privileges

- Browser accessible
- Course Authorization - Course selection by keyword, course ID, title. Program recommendation.
- Registration Integration - Registration, Prerequisite Screening, Cancel Notification
- Student Tracking - minimum PC requirements; bandwidth requirements and ability to work offline.

4.3.2 Course Design, Development and Integration

Enables easy maintenance of courses.

- Customizable adaptable look and feel
- Support classroom and virtual courses
- Course templates
- Use and access LO
- Web course creation
- Support multimedia types
- Accessibility Compliance
- Instructional design tools
- Instructional Specifications Support
- Curriculum Management
- Easy Navigation/linking
- Easy Course structuring
- Extensible Architecture
- Support style sheets

4.3.3 Course Monitoring

- Course Listing/Catalogue
- Course Descriptions
- Schedules and Availability Control

4.3.4 Assessment Design

Ease of exam and assessment creation and grades tracking.

- Creates test questions and facilitates test administration
- Automated Testing and Scoring
- Learner Profile Management/progress tracking -- Enables measurement of training needs and identify improvement areas.
- Course Path Maintenance - Path lists and diagrams
- Competency Mapping/Skill Gap Analysis

- Course Certificate Creation - Support for multiple certificate types. Restricted creation.
- Self-assessment
- Online Grading tools
- Activity Tracking

4.3.5 Online Collaboration and Communications

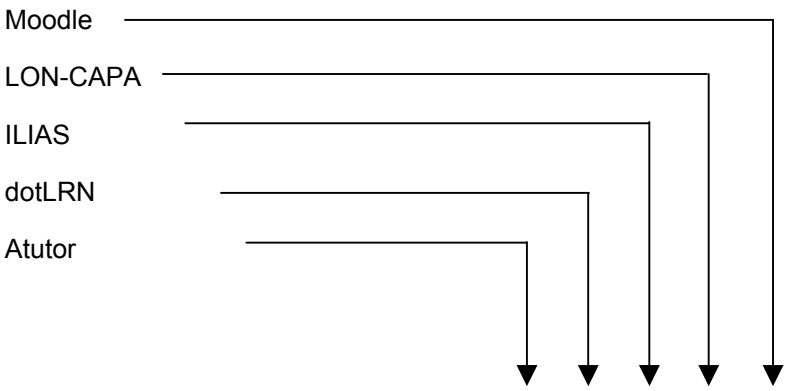
Community learning or collaboration components that support communication.

- Messaging - Integration with SMS/text messaging on cell phones
- E-mail - Ability to integrate with emails sent from regular POP mail accounts (from learners not logged in real-time)
- chat rooms
- bulletin boards
- newsgroups
- online support / help desk
- file exchange
- online journals
- notes
- whiteboard
- discussion groups/forums
- groupwork

4.3.6 Productivity Tools

- Bookmarks
- Calendar/Progress Review
- Orientation/Help
- Search
- Workoffline/Synchronize

4.4 FEATURE RESULTS



Criteria Each Feature is scored between 0 and 5 where 0 = non-existent and 5 = feature well developed.	**#1**	**#2**	**#3**	**#4**	**#5**	**Notes**
Security Features						
Encryption	0	0	0	0	0	None offer SSL
Authentication	1	1	1	1	1	Only basic login.
Access Features						
Login/pwd	5	5	5	5	5	Password reminder exists
Roles/assignable privileges	2	3	3	2	2	Somewhat more refined in dotLRN
Browser-accessible	5	5	5	2	5	Mostly very strong in this area
Course Authorization	1	1	1	1	1	Instructor approves enrollment
Registration Features	1	0	1	1	0	Basic student contact data is retained.
Student Tracking	2	0	3	1	2	Logging only.
Course Design, Development, Integration Features						
Customized look	4	2	2	3	3	User can choose appearance
Both Classroom Distance Ed Support	0	0	1	1	0	No synchronous learning features – but content could be used to supplement classroom teaching.
Templates	1	0	1	2	0	Appearance templates, not pre-structured course skeletons.
Learning Objects	4	0	1	0	0	Support in impending release within Atutor.
Web authoring	2	0	2	2	0	Simple content construction can be performed. Also can import HTML pages into

						Atutor.
Multimedia support	1	1	1	3	1	Include as links.
Accessibility	5	1	2	2	1	Emphasis on this for Atutor
Instructional Design Tools	1	0	1	1	0	Primitive
Instructional Specifications Support	2	0	2	0	0	Planned support.
Easy Navigation	3	3	2	1	3	Menu and icon-based.
Easy Course Structuring	4	1	3	2	1	Clear Table of Contents.
Style Sheets.	4	1	2	4	2	Well supported in some.
Extensible Content Architecture.	4	2	3	1	2	Import and export of Learning Objects/Courses.
Course Monitoring						
Course Listing	4	3	3	3	2	Good support
Course Descriptions	4	3	4	3	2	Based on Author's contribution
Schedules and Availability control	2	3	3	3	0	Set course start data in Atutor. ILIAS has nice enable/disable feature
Assessment Features						
Creates test questions and facilitates test administration	1	0	2	2	2	Can include tests anywhere in course – multiple choice style tests.
Automated testing and scoring.	1	0	2	2	0	ILIAS has auto-marking feature.
Skills management/gap analysis	0	0	0	0	0	Future standards compliance is planned
Learner Profile Management	0	0	0	1	0	Future standards compliance is planned
Course Pathing	0	0	0	0	0	No
Certificate Creation	0	0	0	0	0	No
Self-assessment	0	0	0	0	1	
Online Grading	1	0	0	2	1	
Activity tracking	3	0	0	2	2	Good logs, and plans to build adaptive content based on activity
Collaboration Features						
Messaging	0	0	0	0	0	
Email	3	5	3	3	0	Individual and course group email
Chat	3	0	3	3	2	Integrated.
Bulletin boards	3	3	3	3	2	Notice board
Newsgroups	0	5	0	0	0	Usenet integration

Online support	4	0	0	1	3	Fee-based help and consulting available. Support forums are available.
Journals	1	5	2	1	3	Almost like web logs
Notes	0	0	2	3	0	Annotate coursework in ILIAS.
File exchange	1	2	2	1	3	Post files
Whiteboard	0	0	1	0	0	Planned for ILIAS
Forums	5	5	5	5	5	Strong in all products.
Group work	0	0	2	1	2	Encourages group projects
Productivity Features						
Bookmarks	0	0	2	0	0	
Calendar	1	2	2	0	0	
Orientation/Help	5	2	4	0	5	Strong online help in Atutor – including HOWTO course
Searching	0	0	3	0	1	Forum search
Offline Work	0	0	2	0	0	ILIAS supports downloadable courses/sections – but no rights management
SCORE	94	64	92	74	69	

- ATutor ranked the highest with a score of 94.
- ILIAS was a close second with a score of 92.

5. RECOMMENDATIONS

5.1 IMPORTANT CONTEXT: OPEN SOURCE SUPPORT OF ELEARNING SPECIFICATIONS

Our research revealed that there is universal hope, tempered with skepticism, that eLearning specifications as advanced by IMS and ADL-SCORM, will develop into standards that will be supported by open source LMSs.

Similarly there is an expectation that the OKI (Open Knowledge Initiative led by MIT with collaboration by 9 other major US Academic institutions) will result in products.

It is likely that significant progress will be made within the next two years on both these fronts.

However, the current reality is that OKI-compliant products are primitive and offer only Forum, Chat, email, and file management features that are no more advanced than many of the more mature Open Source LMS.

Furthermore, with the exception of the finalists described below, support for IMS and SCORM is at best a future and most often not evident in the plans of most existing open source products.

5.2 FINALISTS

This section provides a more detailed subjective assessment of each of the finalists.

The most important differentiator for the finalists is whether they had standards-oriented content authoring or content importing. Most products did not have content authoring features and amongst those that did, only the two finalists had any current plan to track the evolving eLearning specifications such as IMS and SCORM.

5.2.1 Atutor - The Winning Recommendation

This product has built-in content authoring, course and assessment support, and has strong collaboration features. In addition it has been designed for accessibility and multi-lingual use. It has good online help and a self-explanatory tutorial to assist new users. Furthermore it is a current design that takes full advantage of the best open source technology (Apache, PHP, mySQL) and incorporates an awareness of the evolving eLearning specifications.

Instructors may import and export courses at their discretion.

There are two concerns about Atutor:

1. As it is new, there is no large user base, although the developers seem responsive to support requests on their support forum.
2. Atutor is likely the least scalable of the short listed candidates. All of the other systems have examples of large installed sites. However this is mitigated by the following:
    - Other products based on the same technology have been successfully scaled and it is likely that intelligent scaling will almost certainly be addressed by Atutor team.
    - In the near future, COL's needs require a single-server, being relatively small installations.
    - In the event of an immediate demand for a large scale system, much can be accomplished using direct techniques such as replication and content caching using open source networking technology.

5.2.2 ILIAS - The Second Choice for Recommendation

ILIAS is a web-based training platform built on PHP and MySQL. The following features are included within the ILIAS LMS: learner desktop containing information about courses visited, new mail and forum entries; learning environment with notes, tests, glossary, and search engine; course management; communication and collaboration tools including mail, forums and chat, group work systems, integrated authoring environment, support for metadata, context sensitive help; and interfaces for both learning and administrator.

Developed originally in German, ILIAS' is also available in 13 other languages including English. The international user community for ILIAS is quite active despite gaps in English resources and documentation. The system is also highly scalable. The product roadmap for ILIAS appears to be well documented and there are a number of features still being developed.

There are several concerns regarding ILIAS:

1. Available support - Given the difference in geography, language, and the current state of English documentation for the product, there will be an added cost to implementing ILIAS.
2. Given the current user and development community base, it may be a challenge to introduce change and or influence the product roadmap.
3. Although support for learning standards and metadata support is mentioned, in the near future, ILIAS will continue to use a proprietary XML course packaging approach. Content cannot be easily migrated to other systems and so there will be some challenges for openness and integration.

6. APPENDIX - COMPLETE CANDIDATE LIST

This section contains a synopsis of the 35 candidates in alphabetical order in table form as follows.

	Product	Status	Synopsis
1	ARIADNE www.ariadne-eu.org/en/about/general/fees/fees.html	Excluded	Required fees for participation. Could not get into system. Interface in French. Seems to be a collection of tools not clear system. Seems more in the planning phase.
2	Atutor www.atutor.ca	Short Listed Recommended	ATutor is very new. It provides good documentation, ease of installation, and strong potential for development. Strong emphasis on usability. The software is free for non-commercial use
3	Bazaar www.ts.mivu.org	Excluded	Bazaar is a group collaboration product with some basic file manager features. Not strongly course-oriented. Limited user base.
4	Bodington Commons www.bodington.org	Excluded	Limited use at 2 institutions in the UK. Unable to easily examine software or documentation.
5	BSCW bscw.gmd.de/	Excluded	BSCW is a group collaboration tool with basic file management features.
6	CampusSource UNI Open Platform www.campussource.de/org/software/unionline	Excluded	Very limited functionality as yet – more of a campus Personal Information Manager
7	CHEF www.chefproject.org/	Excluded	CHEF is an OKI-compliant product that is quite new. Currently it has minimal course/content management support but may evolve into a leading, full-featured solution.
8	Claroline http://www.claroline.net/	Excluded	Similar to CHEF in its feature list but more mature and with broad user base.
9	Classweb classweb.ucla.edu	Excluded	Simple file manager for classroom websites. Very little LMS functionality.
10	Colloquia www.colloquia.net/projects.html	Excluded	Colloquia supports group working and group learning. No Course-oriented features per se.
11	Connexions Project cns.rice.edu	Excluded	Experimental technology not packaged for distribution.

12	CourseWork aboutcoursework.Stanford.edu	Excluded	CourseWork is not ready for distribution outside of its development environment. More of an OKI test bed.
13	COSE Virtual Learning Environment www.staffs.ac.uk/cose	Excluded	Limited adoption and not yet packaged for distribution.
14	Cyberprof www.howhy.com/home/	Excluded	Some web publishing tools, course creation and assessment. It is not widely adopted.
15	DotLRN www.dotlrn.org	Short Listed	.LRN is a mature high performance application in use at MIT. It is more of a collaborative space than an LMS, having only basic file manager facilities. Complex to install.
16	e-education www.jonesadvisorygroup.com	Excluded	Restrictive Open source precludes non-post-secondary organizations from free use. Also has content use restrictions.
17	Eledge eledge.sourceforge.net/	Excluded	Has no significant adoption and no obvious user or software documentation
18	FLE3 fle3.uiah.fi/	Excluded	Fle3 is a web-based learning environment. To be more specific Fle3 is server software for computer supported collaborative learning (CSCL). Offers collaboration, chat, and annotation.
19	Ganesha www.anemalab.org/commun/english.htm	Excluded	Seems like a full-featured LMS but so far only in French.
20	ILIAS www.ilias.uni-koeln.de/ios/index-e.html	Short Listed Recommended	ILIAS has administration, collaboration, content management, and course management features as well as roadmap to support standards. An excellent candidate.
21	KEWL kewl.uwc.ac.za/ sourceforge.net/projects/kewl/	Excluded	The Knowledge Environment for Web-based Learning (KEWL) is a full online courseware system The system only runs on Windows 2000 server.
22	LON-CAPA www.lon-capa.org	Short Listed	LON-CAPA is a full-featured, mature application. Includes content manager. An excellent candidate.
23	Manhattan manhattan.sourceforge.net/index.php?menu=1	Excluded	The Manhattan Virtual Classroom is a full-featured password protected, web-based virtual classroom system that includes a variety of discussion groups, live chat, areas for the teacher to post the syllabus and other handouts and notices, a module for organizing online assignments, a grades

			module, and a unique, web-based email system open only to students in the class. It is constructed in the C programming language and so will have significant portability challenges. Also not widely used.
24	MimerDesk http://www.mimerdesk.org/	Excluded	MimerDesk is a web-based groupware environment designed for a wide variety of uses such as personal management, computer-supported collaborative learning, carrying out projects, and setting up communities. Its main strengths include a very customizeable group system which allows many groups to work simultaneously on a shared database with tools like Calendar, Tasks, Forums, Links, Chat, Reviews, Voting, Files, Instant Messages, Profiles, and many more. Seems like a good content and collaboration tool for sharing files but lacks the learning and teaching component.
25	Moodle www.moodle.com/	Short Listed	Moodle is a student-centered course management system designed to help educators who want to create quality online courses. The software is used all over the world by universities, schools, companies and independent teachers. Merits a closer look.
26	OpenCourse www.opencourse.net/download	Excluded	According to the author: "Although it's in production use at one university, I'm not ready to call it production quality for anybody but me. There are basic installation instructions at last."
27	OCW – open courseware Ocw.mit.edu	Excluded	OCW is a long-term project at MIT that will eventually result in a powerful, large-scale solution for course management and content production. It is currently not designed or purposed for distribution
28	OLMS www.psych.utah.edu/learn/olms/	Excluded	University of Utah Dept. of Psychology inhouse Java- based LMS. Limited features and support.
29	OpenLCMS www.Sourceforge.net	Excluded	Not much activity or information on this project.
30	OpenLMS openlms.sourceforge.net/	Excluded	OpenLMS is a Learning Management System (LMS) made at the Dept. of Geography, NTNU. The system is a fully functional LMS with support for group collaboration, file sharing, distribution of lectures, etc.. As such it is a tool for

			distributing lecture notes to groups of students, and also faciliating collaboration for groups of students and teachers. Not much activity – and all in German
31	Opaltree www.opaltree.com	Maybe	This company has an intriguing product under development. Targeted release is August. Potential for collaborative development exists.
32	OpenUSS openuss.sourceforge.net/openuss/index.html	Excluded	Component based, lecture, mail, discussion, chat, assessment and browser tools. ASP Model. Offering unclear. Roadmap dated. Unclear of activity and support, limited documentation.
33	Ripples/Manic manic.cs.umass.edu/research.html#manic2.0#manic2.0	Excluded	Allows for HTML and audio delivery of course. Web content seems dated.
34	Shadow netWorkspace sns.internetschools.org/info/sns2/index.cgi	Excluded	The Shadow netWorkspace project seeks to bring the benefits of advancing internet-based technology and network services to bear on the work of improving teaching, learning and schooling. Focus on community building. Lack of current development activity.
35	Whiteboard Whiteboard.sourceforge.net	Excluded	A small experimental project with no user base of documentation

7. GLOSSARY

ADL - The Advanced Distributed Learning (ADL) Initiative, sponsored by the Office of the Secretary of Defense (OSD), is a collaborative effort between government, industry and academia to establish a new distributed learning environment that permits the interoperability of learning tools and course content on a global scale.

Authentication - Authentication is any process by which a system verifies the identity of a user who wishes to access it. Authentication may be implemented using Credentials, each of which is composed of a User ID and Password. Alternately, Authentication may be implemented with Smart Cards, an Authentication Server or even a Public Key Infrastructure.

Encryption - Encryption is a process of translating a message, called the Plaintext, into an encoded message, called the Ciphertext. This is usually accomplished using a secret key and a cryptographic Cipher.

IMS - IMS Global Learning Consortium, Inc. (IMS) is developing and promoting open specifications for facilitating online distributed learning activities such as locating and using educational content, tracking learner progress, reporting learner performance, and exchanging student records between administrative systems.

OKI - The Open Knowledge Initiative(tm) is a collaboration among leading universities and specification and standards organizations to support innovative learning technology in higher education.

SCORM - The Sharable Content Object Reference Model (SCORM) defines a Web-based learning "Content Aggregation Model" and "Run-Time Environment" for learning objects. The SCORM is a collection of specifications adapted from multiple sources to provide a comprehensive suite of e-learning capabilities that enable interoperability, accessibility and reusability of Web-based learning content.

SSL - SSL is the Secure Socket Layer. It is a protocol that encrypts a single TCP session.

Vapourware - Vapourware is a term used to describe an early concept; a product does not yet exist.