

Virtual Learning Environment Comparison



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Products compared

1. Moodle (<http://moodle.org/>)
2. Claroline (<http://www.claroline.net/>)
3. ATutor (<http://www.atutor.ca/>)

All 3 of these Virtual Learning Environment (VLE) systems are written with PHP and MySQL and are based on the open source (GPL) licence agreement (See appendices). Several other systems have been investigated during the lifetime of this project, some using different technology including Java Server Pages, Java Applets, and DHTML. However, it was felt that the infrastructure behind the newly installed VLE should compliment that of the current Client Management System (CMT) and PTT Solutions website.

This document will briefly outline the range of facilities that these products offer, comparing the various advantages of choosing any one system over another. I will then attempt to recommend the product most suitable for Progress through Training’s current and future needs.

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Installation

Moodle

Moodle is a VLE developed and written by a PhD student called Martin Dougiamas who was interested in creating a “social constructionist framework” of education within a computerised system.

Installing Moodle was relatively simple. It required the source files to be downloaded from the Moodle website, and then decompressed onto the local hard disk. Once it was successfully saved, the required files were transferred to the web server and then the settings were changed in the configuration files to match our settings at Progress through Training. The installation of Moodle was aided by several automated pages, which speeded up the installation process.

Installation guidelines (taken from the installation package):

Move the Moodle files into your web directory.

- Create an empty directory somewhere to store uploaded files (NOT accessible via the web). This directory must be writeable by the web server process.
- Create a single database for Moodle to store all it's tables in (or choose an existing database).
- Copy the file config-dist.php to config.php, and edit it with all your own settings.
- Visit your new home page with a web browser. Moodle will lead you through the rest of the set-up, creating an admin account and so on.
- Set up a cron task to call the file admin/cron.php every five minutes or so.

Claroline

Claroline was created by a consortium of French University faculties who were interested in developing an open-source alternative to Blackboard.

Claroline was relatively easy to install, yet there are added complications in the installation process due to the fact that the original programming for Claroline was completed in French. Therefore, the installation processes created several French files and database tables. Additionally, several of the 'help' files included with the installation package were also written in French.

Whilst it was not a huge task to translate some of the table names in order to gain understanding of what data it contained, the author feels that using a product originally developed in a foreign language could lead to unnecessary time delays in either content authoring or system administration. Furthermore, PTT's plan to integrate the Motivational Agent project within the implemented VLE could be further complicated via this language barrier.

Claroline installation instructions, (taken from the downloaded package)

1. Download 'claroline130.tar.gz' : Windows : download 'claroline130.zip'.
2. Open a shell, go to download directory and type tar -zxvf claroline130.tar.gz : Windows : unzip 'claroline130.zip'.
3. FTP or move by any means 'index.php' file and 'claroline' directory to your website on webserver (whether webroot or subdirectory). 'index.php' should remain where it is, outside 'claroline' directory.

Windows: If you use easyphp locally (<http://www.easyphp.org>), just drag and drop 'index.php' file and 'claroline' directory into C:\Program Files\easyphp\www\

4. CHMOD 666 claroline/include/config.php if necessary

5. Open Web Browser and go to <http://www.mydomain.org/mysite/mydir/claroline/install/>
6. Windows with easyphp locally, open: <http://localhost/claroline/install/> (don't forget the final /).
7. Follow instructions. Windows: if you use easyphp out of the box, login and password for MySQL should remain empty.

ATutor

ATutor was originally developed as an open-source VLE from Toronto University in Canada, but has expanded to encompass several Universities across the world.

ATutor was the easiest of the three software systems to install. Once the files had been downloaded, decompressed and placed in the appropriate file on the web server, it was simply a case of navigating to the admin screen and running through the installation screens via an Internet browser.

General information

After the required initial installation processes has been completed, it is possible to fully customise the 'look and feel' of the various VLEs without making any significant changes to the underlying functional code. This is achieved via the use of a cascading style sheet (CSS) which allows web designers complete control of the way that pages are displayed in a browser window. After PTT has been able to select which VLE it will implement, I will then construct a customised style sheet to match the look and feel of the PTT Solutions website.

Furthermore, as the 'code' required for each of these VLEs is included with the installation package, more fundamental changes are possible, yet will take more time than constructing a simple Cascading Style Sheet depending on the complexity of the changes required.

Cost

All three systems discussed in this document are released under the General Public License (GPL), which means that the initial package can be freely downloaded, installed, and distributed without charge. However, it is a condition of this agreement that PTT always acknowledges the original designers of the software, leaving their original copyright messages intact.

All 3 organisations offer commercial services that evolve around the customisation, customer support, and course design.

Specific ATutor pricing information is available at: <http://www.atutor.ca/services/pricing.php>

Features

Moodle

Introduction:

(Taken from the Moodle.org website)

Moodle is a software package for producing internet-based courses and web sites. It is an ongoing development project designed to support a [social constructionist](#) framework of education.

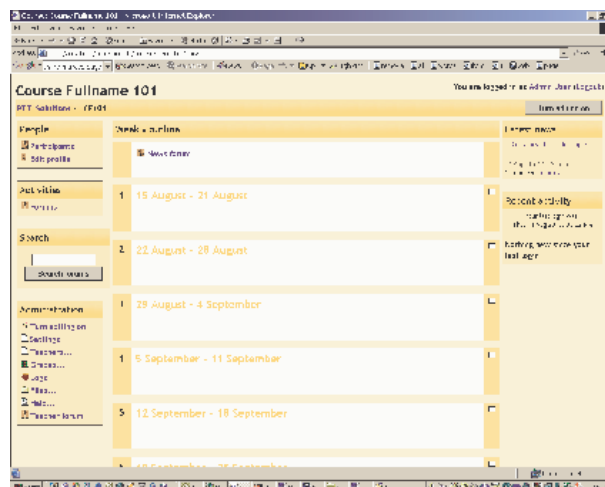
Moodle is provided freely as [Open Source](#) software (under the [GNU Public License](#)). Basically this means Moodle is copyrighted, but that you have additional freedoms. You are allowed to copy, use and modify Moodle **provided** that you agree: to provide the source to others; to not modify or remove

the original license, and apply this same license to any derivative work. Read the license for full details and please contact the [copyright holder](#) directly if you have any questions. Moodle will run on any computer that can run [PHP](#), and can support many types of database (particularly [MySQL](#)).

The word Moodle was originally an acronym for Modular Object-Oriented Dynamic Learning Environment, which is mostly useful to programmers and education theorists. It's also a verb that describes the process of lazily meandering through something, doing things as it occurs to you to do them, an enjoyable tinkering that often leads to insight and creativity. As such it applies both to the way Moodle was developed, and to the way a student or teacher might approach studying or teaching an online course.

Features included within Moodle:

- Layout of the site can be fully customised for particular courses
- Themed discussion forum
- Ability for the course planners to set weekly announcements in advance
 - Users are reminded of forthcoming announcements/assignments when they first log into the system
- Ability for trainers to set students any number of assignments, with targeted completion dates
- Moodle tracks assignments completed and grades allocated by trainers
 - However, this information has to be manually entered – the system does not mark, or allocate grades automatically
- Option to create a variety of surveys in order to spark discussion amongst learners
- Basic security features to limit customer access to particular courses
 - Therefore, PTT could introduce a charge for accessing the system without any major alterations to the code
- Moodle allows users to upload their own learning material to the site to share with other users
 - This feature could be useful in creating an 'organic learning environment' where the amount of learning material available on the system grows without administrator intervention
 - However, there could be several copyright implications associated with the type of material that users would upload, so regular monitoring would be required by PTT administration
- 'Journal feature' to allow students to post questions, maintain a course diary, or aid revision
- Theme feature to allow administrators/students to change the look & feel of the VLE without requiring a new style sheet



Claroline

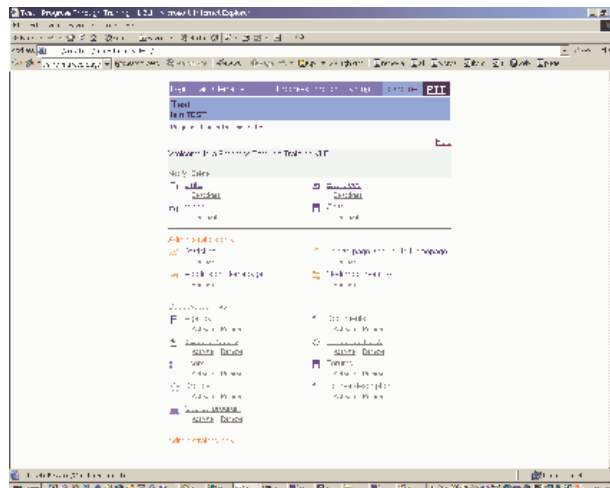
Introduction

(Taken from the installation documentation included with the package)

Claroline is GPL software working with PHP/MySQL. It is a course based educational tool allowing the professor to create, admin and feed his courses through the web. If you would like to help develop this software, please visit our homepage at <http://www.claroline.net>. Claroline is distributed under the Gnu General Public license (GPL). See [claroline/license/gpl_print.txt](#)

Features included within Claroline:

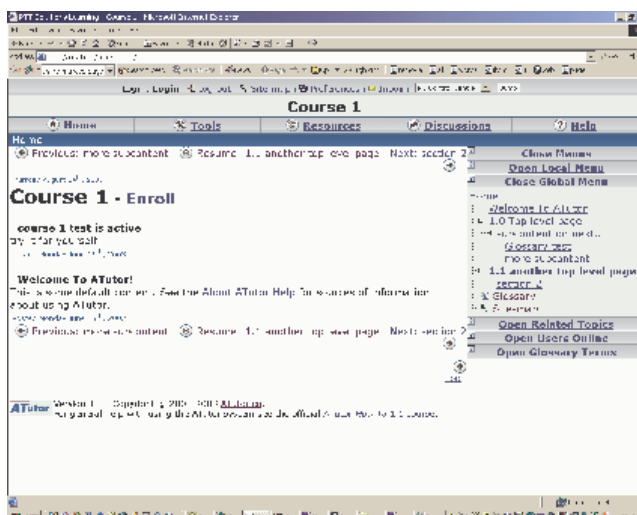
- Different approach to other VLEs, courses are broken down into component elements, and then published on the site under separate areas (announcements, exercises, chats, resources, links etc)
- Students have full flexibility in the order that they undertake the elements of the course, whether they are exercises, required reading, discussions, or similar
- Categorised links feature for both students and course administrators to manage relevant URLs
- Agenda feature include which allows authors to set announcements & deadlines for all course members to see
- Offers fully optional layout for course beneficiaries
 - Administrators can control which 'course elements' are displayed via a simple interface screen
- Chat facility for all users
 - However, it is a very simple text interface system
- Claroline allows students to upload their own papers to the system for peer review
 - As mentioned in the write up for Moodle, this feature could be useful in an attempt to create a system that is developed & sustained by both administrators and fellow students
- Option for the system to process registration automatically, or for manual administration.
 - (Self-registration would most likely be deactivated on a revenue generating system).
- Courses can start with a limited number of resources, but grow in size and complexity
 - Administrators can add them gradually as course users require them
- Statistics function for course administrators to monitor number of courses, course popularity etc.
 - Therefore, it will allow PTT to analyse which courses are the most popular
- Ability for course administrators to set exercises and assign completion deadlines
- Ability to upload video files for use as course resources
 - N.B this is the only system with a specific video-handling feature, but others could be adapted to allow for the use of this media in courses



ATutor

Features included within ATutor:

- Theme feature allows administrators to change the look of the VLE, without requiring the creation of a new style sheet
- Very straightforward course administrator interface
 - Course construction broken down into designing a series of 'content pages'
- Export feature for courses created within the system
 - Although the export format is not SCORM/IMS standards compliant, this feature would be useful for transporting content between systems and administering backups
 - N.B. This is the only system mentioned that has this feature
- Features integrated 'inbox' for inter-course communication from both course administrators and other users
- 'Send course e-mail' feature to allow all course students to be contacted simultaneously
- Course structure is built on a 'slide by slide' basis
 - Very simple to author and navigate, but would require rudimentary HTML skills on the author's part
- Context sensitive help feature, which allows course administrators to highlight particular sections of text and allow users to access additional help
- Inbuilt glossary function to users with particular terms & acronyms
- Links to various other educational database are included with the download package
- Excellent documentation & help manuals to aid users in course navigation
- Wide range of developers working on current project – wide support base for future versions of ATutor
- ATutor website states that they are currently working towards conformance with present and future e-learning standards
 - Therefore, future editions of ATutor may integrate with other 'standard' systems
- Dynamic site mapping feature that grows as more courses are authored on the system
- Flexible assignment creator tool
- Print compiler tool – allows students to select various pages of text and group them together on one page
- Integrate WYSIWYG editor for creating course content without the need for HTML knowledge

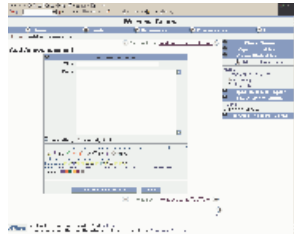


Comparison

As can be seen from the features list made above for each of the three systems there are various benefits/disadvantages incurred when selecting any one VLE over another. None of the systems

examined in this report are fully compatible with the current Shareable Content Object Reference Model (SCORM) standards for sharing/distributing content between different VLEs.

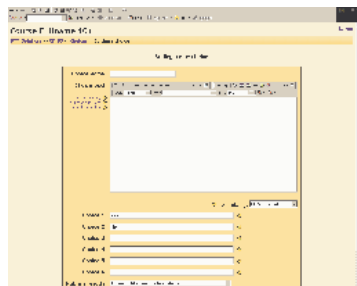
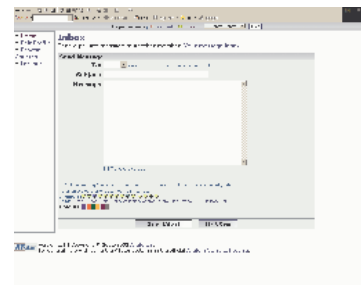
Additionally, none of the systems mentioned today use XML metadata to describe e-learning content within the systems. However, it is worth mentioning that the current development team for the ATutor product have expressed a clear interest to achieve standards compliance within future versions of the software.



Yet, without the encumbering technical elements of the SCORM the authoring process for new courses (which would be completed by consultants within Progress through Training), is much simplified. Creating a new course can be as simple as designing several different 'pages' (Moodle, ATutor) of content (which could easily be transferred from current PTT material), and then organising them so that they flow in a logical manner.

In addition to these 'course slides' consultants can then assign specific resources to accompany each slide. In Moodle and ATutor there would not be a requirement for HTML knowledge when authoring content, (a clear benefit for PTT staff in reduced development time).

The collaborative features included in the learning environments vary in both complexity and usability. ATutor is the only system to feature an internal 'e-mail' system to allow course users to intercommunicate. I believe that this is a very useful feature to have within a VLE, as it promotes collaboration/networking between users. Additionally, each system requires a valid e-mail address to be collected from each user so communication via external e-mail systems would be entirely possible.



On an authoring note, I personally found that Moodle's interface for creating course content was the most intuitive, and featured a very simple to use What You See Is What You Get (WYSIWYG) editor. The use of this editor would remove the need for the consultants within PTT to learn any Internet display languages such as Hyper Text Mark-Up Language (HTML), which would significantly reduce the development time required to start creating course content.

So which one is best?

The final conclusion of this report calls for a nomination for the most suitable VLE for Progress through Training's needs. It is this author's recommendation that ATutor be selected as the VLE to implement within the company. Out of all three systems, I feel that ATutor has the best blend of sophistication, usability, and range of similar features to those found on commercial VLE systems.

On an administrative note, ATutor was very easy to install, configure and run. The layout of the control panel was very intuitive, and the additional help provided by the demonstration course was very useful before I created my first test course within the system. Out of all three systems, ATutor easily featured the most tools.

I believe that the 'print compiler' will be particularly useful for course delegates who wish to keep a copy of their notes as they progress through their course. Furthermore, the fact that the development team behind ATutor are committed to achieving standards compliance in future versions should mean PTT can work towards conformance at a similar pace to the development of the software.

As mentioned in previous sections, ATutor comes complete with its own editor window for creating course content, notes and announcements. Furthermore, it offers the designer flexibility in deciding whether they will enter information in plain text, or attempt to code their own HTML.

Next steps...

It is recommended that each of these systems be demonstrated prior to the company making a final decision. Therefore, it is suggested that a suitable time be arranged at the earliest convenience in the near future to allow for this demonstration to take place.

Furthermore, it is suggested that research into open-source Virtual Learning Environments is ongoing at PTT. This should ensure that future VLE developments are analysed and their benefits to the company discussed and implemented.

Appendices

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