

Comparison of 5 Digital Learning Objects

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Introduction

The five Digital Learning Objects (DLO) that I have decided to compare are all Virtual Learning Environments. In my role at work I have had to look at and implement a Virtual Learning Environment for our school, and so the research in this essay was used in the decision making process at my school when choosing which Virtual Learning Environment (VLE) we would use. The five different VLEs that I am going to look at in this essay are Moodle 1.5.2, Blackboard 6, Bodington, A Tutor 1.4.3 and Caroline 1.4.

These are a small variety of the available VLE systems on the market, and each have their own merits and disadvantages. To be able to compare these fairly we need to have a good idea of what a VLE should deliver and also determine what criteria we will use to compare these products. We also need to be clear on what we mean when we discuss the different learning theories that each of these may or may not adopt.

If you search the term “Virtual Learning Environment” on Wikipedia, the entry says this;

“A VLE should implement all the following elements:

- *The syllabus for the course*
- *Administrative information including the location of sessions, details of pre-requisites and co-requisites, credit information, and how to get help*
- *A noticeboard for up-to-date course information*
- *Student registration and tracking facilities, if necessary with payment options*
- *Basic teaching materials. These may be the complete content of the course, if the VLE is being used in a [distance learning](#) context, or copies of visual aids used in lectures or other classes where it is being used to support a campus-based course.*
- *Additional resources, including reading materials, and links to outside resources in libraries and on the Internet.*
- *Self-assessment quizzes which can be scored automatically*
- *Formal assessment procedures*
- *Electronic communication support including [e-mail](#), [threaded discussions](#) and a [chat room](#), with or without a [moderator](#)*
- *Differential [access rights](#) for instructors and students*
- *Production of documentation and statistics on the course in the format required for institutional administration and [quality control](#)*
- *All these facilities should be capable of being [hyperlinked](#) together*
- *Easy authoring tools for creating the necessary documents including the insertion of hyperlinks - though it is acceptable (arguably, preferable) for the VLE to be designed so that standard [word processors](#) or other office software can be used for authoring.”*

The four main learning theories that I will concentrate on in this essay are; behaviourist, constructionist, social-constructionist and situative. For the sake of this essay, I shall now define the key criteria I shall be looking at for each learning theory.

- Behaviourist – The behaviourist school of thought, states that behaviour is learnt by a students present and past circumstances. Therefore its is the teachers role to ensure that an environment is created where only appropriate behaviour is being reinforced. This school of learning theory, believes that learning is a passive activity, where the teacher imparts the knowledge to the student in a safe environment. It is assumed that the student will then be able to recall this knowledge when required in the real world. This is a very teacher focused learning model, where the student is seen as consumer of the information.
- Constructionist – The constructionist school of thought, states that learners construct their own reality, and that their understanding of the world comes from their own experiences, beliefs and mental structures. A teacher who follows the constructionist model, will believe that students will construct their knowledge based on what they believe and have experienced in the past. It is therefore a very active process for the leaner and will be different for every student.
- Social-Constructionist – The social-constructionist school of thought is really an extension of the constructionist school. It broadens the range of experiences that a student draws upon when learning to include a social group. In education the social group will be the teacher, other students, friends and all participants in the learning process. The student will then construct their knowledge based upon the interaction and shared information from this social group.
- Situative – The situative school of thought is that of learning as a social practice. That is that the focus of the theory is less concerned with the method that the knowledge is gained, and more with the group or society that the learner engages with to undertake the learning.

Comparison

Check Point	Moodle	Blackboard	Bodington	A Tutor	Caroline
Course Syllabus	Syllabus can be linked in each course	Syllabus can be linked in each course	Syllabus can be linked in each course	Syllabus can be linked in each course	Syllabus can be linked in each course
Admin Information	Context sensitive help	Student manual	N/A	Online course help	N/A
Noticeboard	Site calendar News forums	Course message forum	Future development	Course calendar	Course calendar
Student Registration and Tracking	Batch Import Self Register Various Database connections	Batch Import Self Register Various Database connections	Batch Import Self Register	Batch Import Self Register	Batch Import Self Register
Basic Teaching Materials	All systems can provide resource repository features, enabling tutors to upload and share documents with students and other tutors.				
Additional Resources / Outside Links	All systems can provide links to external websites and libraries.				
Self Assessment Quizzes	Automatically scored quizzes	Automatically scored quizzes	Automatically scored quizzes	Automatically scored quizzes	Automatically scored quizzes
Formal Assessment Procedures	Online grade book Grade assignments and all non automatic grading activities	Online grade book Grade assignments, short answer tests	Grade assignments	Online grade book Grade assignments	None
Electronic Communication	Forums Messenger Chat Rooms	Forums Chat Rooms	Forums	Forums Internal Email Messenger Chat Rooms	Forums Internal Email Chat Rooms
Access Rights	Instructor Student Guest	Instructor Designer Teaching Assistant Student Guest	Manager Instructor Student	Instructor Teaching Assistant Student	Instructor Student
Production of Statistics	Logs of all student activity accessible by tutors	Logs of all student activity accessible by tutors	Future development	Logs of all student activity accessible by tutors	Logs of student access to a course
Hyperlinking	All systems have the capability to hyperlink their resources within their courses.				
Authoring Tools	WYSIWYG editor HTML editor	WYSIWYG editor	WYSIWYG editor	WYSIWYG editor	WYSIWYG editor

From this comparison, we can see that all five of the VLE's meet every requirements stated in our earlier list, except Bodington, which is currently developing the two areas that it does not provide. So we can safely say that all five of these software products can be classified as a VLE. What we also need to consider is what learning theories each of these software packages subscribes to, and if it does not subscribe to a particular theory, which ones can it accommodate.

For a VLE to support the behaviourist theory, the teacher needs to be able to upload resources to the environment and provide positive reinforcement to students when they successfully carry out a task set by the teacher. All of these software packages give teachers the ability to upload basic course content and materials, and set up self assessment quizzes. The combination of these two features would enable a behaviourist teacher to deliver learning and positive reinforcement on that learning through the system.

For the system to be able to accommodate the constructionist theory means that it needs to offer a greater degree of control and interaction to the learner. A basic form of constructionist learning, is the group discussion, where students can discuss the topic and develop a greater understanding by attaching the information to experiences they have already had. The easiest way for this to take place in a VLE is through the forums, which all of the five VLE systems incorporate. Therefore it would be possible for each of these systems to support the constructionist theory too.

The social-constructionist theory again demands more responsibility from the students, in that the learning will take place in their social group, and as a shared experience of all the group. For this type of learning to truly take place in a VLE, it is vital that the student body can lead and take control of their discussion and learning. The tools necessary for this to happen are more interactive than just a message forum. A good example of a tool allowing this to happen would be the glossary activity in Moodle, or the Wiki tool. Both of these allow a group of learners to take control of the learning activity and develop it as a group, providing feedback to each other on the progress that each of them are making. Bodington does not have tools that allow students to collaborate on activities to this level. A Tutor allows work groups to be set up, that can then collaborate on projects and discussions or blogs. Caroline allows groups to be defined, but there is very little option for groups to take control of activities themselves. Blackboard too, has the option to define groups of students that may be working together, but there are a few options for truly collaborative learning available to these groups within the software.

For a system to embody situative learning, it really needs to be centred around the idea of learning happening within the group situation and focussed on activities that enable groups to find the knowledge through discussing and learning from each other. Examples of this type of learning would be symposiums or debates. These are quite hard to emulate in the virtual world, as there is an element of immediacy involved in the communication between the group members. All of the systems, apart from Bodington, give the option of real-time chat rooms, so a debate could be conducted in these four VLEs

Other areas for consideration

One of the key considerations that any institution will have when implementing a VLE is going to be the cost of the system. All of the VLEs in this essay except Blackboard are free to download and use. Blackboard is a commercial product which an institution has to pay a yearly fee to run.

The next thing that an institution is likely to consider is the support and user base of a system. With Blackboard, the institution receives support when the software is purchased, as is the case with any commercial system. Moodle has a large user base and community of teachers and programmers that are available online for free help and support, from an Administrator level down to helping a teacher use the software or plan lessons. Moodle also has what it calls "Moodle Partners", who are companies offering consultancy and training services to institutions. Bodington is developed by the University of Leeds and there is informal support offered through the system's mailing list and also certain companies offering their services on a consultancy basis. A Tutor has free support provided through its forums and mailing lists. Caroline also offers free help through its forums.

As with any large software system, there will inevitably be updates and new releases of the package, as the requirements of the users become clearer and the use of the system diversifies. An important consideration for the institution embarking on developing a VLE is how often developments are released and how approachable the designers of the VLE are in terms of customisation of their software to meet the needs of an institution. All of the systems looked at here appear to have a fairly active development environment, releasing new versions as they are needed.

Feature requests can often be a lot slower, however the Open Source VLEs (Moodle, Bodington, A Tutor and Caroline) appear to be able offer a greater deal of customisation and development, as they all have a community of programmers and developers that are available to help institutions in getting the VLE to operate the exact way they require it to.

Conclusion

In conclusion to this comparison, there is no “cut and dry” answer as to which VLE is the best out the five examples which I have explored. All of the VLE's meet the basic requirements of a VLE, except Bodington, which is currently developing the areas which do not meet requirements. Some of the VLE's offer more than their competitors in their provision of the basic requirements. For example, A Tutor offers four types of electronic communication, whereas Moodle and Caroline offer three and Blackboard and Bodington offer less than the others. In contrast, Blackboard has the greatest number of access rights that can be set, and Moodle offers the most variety of authoring tools.

The learning theories that tutors use within their practice will vary within the same institution, therefore it makes most sense for an institution to adopt a system that supports the greatest possible number of learning theories. From my research, Moodle supports all of the learning theories I looked at, whilst the rest of the VLEs can support two or three. However an institution may decide to employ more than one of these systems, in which case tutors could chose the system they felt best meet their teaching styles. The more interactive tools that the systems provide, the greater number of learning theories they are able to support.

It is safe to say that if an institution was to use any of the VLE's reviewed, they would be able to meet the basic requirements of a VLE, once Bodington release their next update. So the question of which VLE is best for an institution will be resolved by looking at the more advanced and specific features of each VLE. The cost is always going to be an issue, and from the five VLEs described here, four are free, which should show that an institution does not need to pay thousands of pounds a year to have a VLE running. Support also is good amongst all of the VLEs and some fair better than others in this area. With the open source VLEs, whose support relies on an online community of users; the larger the community the better the support. Of the four open source VLEs, Moodle and Bodington have by far the greatest user base, and therefore can offer the quickest support through their online communities. Blackboard's support is provided on a 24/7 basis for system administrators and student and faculty support is provided at a cost to the institution.

The issue of feature requests and customisation of a VLE opens up a whole bigger discussion around the merits of open source software for educational use. In my mind, the advantages of using open source software are clear, a developer or administrator can take the software that is freely downloaded from the Internet, and adjust and modify the code of the software until it operates exactly as the institution requires. Also, as the software is supplied free of charge, the money that saved in investing in a yearly contract package with a commercial software supplier, can be invested into training the staff to use the software, employing technicians to administer the system and purchasing resources to populate the VLE.

The final decision will be mainly engaged with the individual needs of each institution and their own requirements, however, hopefully this comparison goes someway to highlight the differences and strengths of the five systems I have explored and considered in this report.

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