Virtual Learning Environment (VLE) Usage

Initial Report – Budapest Polytechnic

Budapest Polytechnic does not currently have a VLE system. Several of certain services of VLE have been applied at other platforms so far, like information and communication techniques (ICT), etc. The integration of these into a unified system has not been so far realized, primarily due to a lack of resources and secondly due to other urging priorities of the integrational efforts of the Polytechnic. The increased number of students as well as the appearance of new training demands also make the introduction of new forms of education necessary (distance learning in teacher training, in-service teacher training). Therefore the next stage of system- and syllabus development points in any case into the direction of establishing a highly developed and unified VLE.
System- and syllabus developments have already taken place in the course of the establishment of electronic learning environment on the one hand and in the course of the application of ICT on the other, so the present report will first and foremost present these. Their integration into a unified system (VLE) as well as their development are the essential objectives of the competition.

National context
In Hungary there is no unified system of the application of virtual learning systems. Such costly systems are usually operated by distance learning centres and companies possessing greater training capacities of their own. Distance learning centres are often created by universities, through which they realize postgraduate training organized on the basis of in-house and various companies' commissions. These institutions often operate in-house developed VLE systems or hire known ones (Blackboard, WebCt, etc). National big companies (eg Matáv) and multinational companies (eg Microsoft Hungary) also dealing with the in-service training of their own workforce and adult education generally have VLE of their own. **Institutions of higher education usually realize, and apply, one or two services of the VLE system as independent units. Here we have electronic syllabuses developed on Web-servers (HTML), email based student - teacher communication, etc in mind. Institutions of higher education in Hungary show a preference for the application of ICT in distance learning as well as regular training.The government and international organisations encourage such ambitions of institutions of higher education by conducting competitions (Apertus, Socrates) both in the field of syllabus development and resource updating.**
Institution
Budapest Polytechnic
School/division/faculty
Institute for Engineering Education of Banki Donat Faculty
Current VLE
Our institution hasn't got any VLE complex system so far.
Any other VLEs in use
No

Selection and Implementation history

Taking the network based training principles of Budapest Polytechnic into consideration, each faculty and some institutes may operate Internet servers (HTTP, FTP, etc), may develop and apply electronic syllabuses, and operate communication systems, etc according to their own needs. The 5-faculty institution - created by the integration of three formerly independent polytechnics - has among its long term plans the development and operation of such a unified VLE system.

The central development within VLE competence is the following:

0. At present the Polytechnic is centrally operating its home developed "virtual registrar's department" (NEPTUN), also available on the Internet and set up for the support of the credit system introduced in Hungary last year. In the course of module enrolment the system makes access addresses available as module requirements. However, the running of these is only realizable after quitting the system. NEPTUN unifies administrative work at the Polytechnic.

Our developments realized so far at the Institute for Engineering Education in regular teacher training, within VLE competence, are as follows:

1. In order to promote individual learning certain chapters of some of our modules (multimedia, education technology, methodologies, etc) have been processed in the form of electronic syllabus (HTML, multimedia).

2. The syllabus of several modules (multimedia, methodologies, education technology, etc) have been made ready for download in electronic form (doc, rtf, pdf).

3. Module-related student assignments are submitted by upload on the FTP server.

4. Student - teacher communication takes place in the form of electronic correspondence.

5. Module-related mailing lists, ensuring the manifold exchange of information, have been created.

Funding arrangements

The sources of the previously mentioned VLE competent network and Internet-based developments were the following:

a. government support: acquisition of the software component of NEPTUN,

b. competition funds: electronic syllabus development,

c. central Polytechnic funds: improvement of NEPTUN's hardware conditions, network connection developments within faculty competence, realisation of faster access to Internet,

d. faculty funds: creation of operational conditions of Internet-based servers (HTTP, FTP, SMTP, NEWS),

e. institute funds: electronic syllabus development, student laboratory development.

Hardware

The improvement and operation of the informatic system of the Polytechnic up to user intersections are centrally funded. NEPTUN's server and its protection are also centrally financed. The five faculties of the Polytechnic are currently functioning on 6 Budapest and 1 country (Szekesfehervar) locations. The levels of their technical equipment before the institutional integration were quite different. The integrated Polytechnic is endeavouring to unify its system (with respect to hardware, software and organisation). In terms of that the possibilities of access to Internet on the different locations have been developed (change from 10 Mbit/s to 100 Mbit/s or 1 Gbit/s).

With respect to Bánki Faculty the access of the staff to the network (LAN, Internet) can be considered 100 % complete. Students have 3 or 2 open labs at their disposal at the Faculty or the hostel, respectively. It is worth mentioning that about 80 % of

our students have a personal computer of their own, 50 % of which have access to the Internet. Therefore access conditions to the VLE system from the operational and user sides can be considered guaranteed.

Technical Support

In order to maintain and operate a unified system (unified HTTP locations, email addresses) the Polytechnic created an informatics department under the supervision of the vice rector responsible for IT.
The maintenance of local networks (servers, services, workspaces) within faculty competence are performed by a faculty information system administrator and a faculty operator.
Human resources necessary for the operation of VLE seem to be guaranteed. However, the preparation of a document recording the principles of development seems important from the point of view of a unified syllabus development.

Extent of Usage

The student, staff and course distribution of our developments drafted in an earlier chapter (Selection and Implementation history) is the following:
0. NEPTUN: has been extended to all courses at the Poytechnic, access (username, password) has been ensured to all students and staff.
The data in the following refer to students of engineering and teacher training.
1. Electronic syllabus: 3-4 teachers and 1-2 assistants (eg education technologist) per module took part in the development. Students of teacher training were also involved in the development (work at students' scientific circle, thesis). 20-25 students (in the case of pedagogy modules depending on basic professional qualifications, eg methodologies) or 60-80 students (in the case of pedagogy modules independent of basic professional qualifications, eg education technology) per module use them regularly.
2. Syllabus to be downloaded: corresponds to 1.
3. FTP-based submission of assignments: 20-25 students (in the case of pedagogy modules depending on basic professional qualifications, eg methodologies) or 60-80 students (in the case of pedagogy modules independent of basic professional qualifications, eg education technology) per module use them regularly.
4. Electronic tutorial: corresponds to 3.
5. Mailing list: corresponds to 3.

Integration with student records

At the beginning of each academic year, in September, faculty information system administrators automatically generate a username or a password for the students admitted to the Polytechnic. This ensures access to local faculty networks and electronic correspondence. In the latter case each student has a free capacity of 10 MB to store letters and other documents. The system does not simplify access to email from distant computers, so the majority of students use a HTTP-based system for free correspondence.
In the open laboratories of the Polytechnic students are ensured free access to Internet for educational purposes. The Hungarian government covers the cost of Internet usage in higher education.
The students' and staff's acquisition of informatic equipment for home application is supported by the Hungarian government through tax refund (appr 250 euro/yr).
With respect to developments drafted in ch. Selection and Implementation history, the condition of implementation is the following:
0. The condition of logging in: identifier and password which correspond to those received on enrolment.
1. Running the application has no preconditions. Enrolling on modules students can

see within the software NEPTUN the web address of the electronic syllabus among the requirements recorded by the teacher.
2. Corresponds to 1.
3. Attachment to the FTP server does not need any of the conditions drafted in 0. Since there is a possibility only to upload files to be submitted, it is sufficient to provide students with the IP address of the FTP server and to provide each study group with an identifier and a corresponding password. Students can upload their electronic assignments on directories in their own names. They are, however, not entitled to cancel or modify these.
4. Corresponds to 0.
5. Corresponds to 0.
Since all the developments took place independently, the connection of data bases is only accidental. Enrolling on a particular module in a particular course within NEPTUN, students can see the requirements of the module. The access addresses of services recorded in 1-5 can be found there. The homepage for the Institute for Engineering Education (www.banki.hu/~tkt) gives more details on the conditions of access to the particular services. Education technologists at the institute yield personal help to students in order to achieve successful linkage.

User authentication

NEPTUN coordinates student enrolment. Having closed a previous term, the institute NEPTUN coordinator collects from the staff the system of requirements for a particular module. This contains the access and downloading possibilities of electronic syllabuses as well as the conditions of usage for ICT. On the basis of these, the institute coordinator opens the so-called course windows. In the first week of each term (registration week) students enrol on the particular modules according to the conditions set by syllabus requirements. Following this, teachers make records of their students. During the term teachers may in NEPTUN continually register their students' progress (results of assignments submitted, tests, etc), then at the end of the term they enter the grades. In NEPTUN all student operations are documented for the sake of later checking. The system makes the administration of the payment of grants, tuition fees and make-up examination fees possible, too.
The institute homepage (www.banki.hu/~tkt) contains the content extracts, the system of requirements, examination topics, sample exercises, etc of the particular modules. The sample curriculum of the credit system was also recorded here, by which students of teacher training can enrol on the particular modules.

Hardware and software requirements for users

The user side hard- and software conditions of applications presented in 0-5. can be relatively simply satisfied:

- minimal computer configuration: Pentium II, 128 MB RAM, CD-ROM, 10 GB HDD,

- minimal operational system: Windows '98

- other conditions: HTTP client side programme (eg Internet Explorer, Netscape Navigator, etc), FTP client side programme (eg CuteFTP, MS-FTP, Windows Commander, etc), SMTP client side programme (eg Outlook, WinPmail, etc). Each of these can be downloaded by students from the local network.

Uploading of content
From the developer's side electronic syllabuses are prepared in HTML and Authorware environment, so the files supported by these platforms can be used: doc, rtf, pdf, ppt, and zip. **In FTP and SMTP environment optional files may move. The system is limited rather by size.** **A unified compressing system is applied: zip.**
Pedagogical Support
Electronic syllabus development requires the elaboration and application of a unified pedagogical conception. In present experience the principles of this was elaborated by colleagues taking part in the electronic syllabus development at the Institute for Engineering Education. Since there is no unified VLE system, there is no unified pedagogical conception at the Polytechnic, either.
Usage within the faculty / school / department
The developments introduced so far (1-5. in ch. Selection and Implementation history) absolutely cannot be considered general at Bánki Faculty. Since no distance learning has taken place at the Faculty, the elaboration of electronic learning environment has not become essential. However, electronic syllabus development has been going on at each institute within the Faculty. The increased number of students and the material to be acquired demand in all forms of training the appearance of new forms of learning and communication to support students' individual learning. A VLE-based development may provide great help in that. **The Institute for Engineering Education has always been leading in electronic syllabus development and in the application of ICT in training. The new VLE-based development may make this work more efficient.**
Staff Development
Unfortunately Bánki Faculty does not have a permanent development team. Such a team is always recruited according to the speciality of the syllabus to be developed at a given moment. Students of teacher training and the relevant experts of partner institutes are also involved in syllabus development. **Education technologists at our institute give significant assistance in development, too.**
Student induction
The induction of applications developed by the Institute for Engineering Education is very simple and forms part of general informatic skills. Presumably it is only the FTP-based system for the submission of assignments that needs some presentation. **From another aspect, great emphasis is to be laid on the fact that students of teacher training acquire the tools of electronic syllabus development (within the framework of education technology and multimedia modules) as well as the methodological questions of its application (within the framework of the methodology module).**
Quality control
The module contents of the teacher training course are recorded in curricula, containing among their methodological principles the application of modern strategies in the teaching-learning process. Therefore several staff members also give priority to the application of ICT in teaching, independent of module content. **The quality control of regular training (content, teaching method, staff activity, etc) has been present at the Polytechnic for years.**

Quality questions of electronic syllabus application can be found in the system mentioned above.
VLE-based training (eg distance learning) obviously necessitates the elaboration of an own quality control system.
The system of requirements concerning the quality of the electronic syllabus is also worth mentioning. It has ergonomic, psychological and pedagogical aspects. Relevant recommendations have been made by groups of a longer tradition of electronic syllabus development. Having been discussed at several national and international forums, these can now be regarded as standard.

Policy

The Polytechnic attaches great importance to the ever wider application of ICT in training. Quite a few developments have taken place over the past 7-8 years in that direction. After the political changes in the country, Hungarian higher education had to face the challenge of "infoculture" and it spent its scarce financial resources on developing and operating the computer systems.
By the end of the 1990s the hardware conditions of electronic syllabus development were created. Such syllabus developments were realized within the frame of several projects.
The next phase is to be the development of a unified (VLE) system, which can be used either in regular full time or distance learning alike.
The Institute for Engineering Education has always been among those leading in efforts in this direction. The objectives of processing at least 2-3 smaller or larger topics per module in an electronic form and the creation of the conditions of electronic communication have been set for the vocational teacher and in-service teacher training programmes to be realized in the form of distance learning and launched in the academic year 2003/4.

Support for assessment (formative and summative)

Unfortunately our system does not currently have such a dynamic assessment service. Traditional methods of assessment and grading are used with respect to each module. NEPTUN only unifies the administrative work of the staff. The style of grading varies from module to module.
Such possibilities within the Blackboard or WebCT systems are being studied.

Summary of usage within Vocational Initial Teacher Training

We have no experience of the application of Blackboard/WebCT yet.