Distance learning - concept and application at BBU

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Abstract: Distance learning as a concept is undergoing even today a more and more visible transformation, and at the level of practical application we can notice a very different approach from university to university, from the older web-based learning to on-line learning and e-learning based on IT platforms with different functions sometimes very particular ones depending on the target and the subjects submitted to the learning process. The BBU case shows that at the level of the most known and competitive university from Romania the way chosen under specific circumstances for doing distance learning and the future directions for getting closer to the essence of the distance learning concept is the correct one but it is always submitted to adaptation to the academic environment and to the segments of students to which it is addressed.

Key-Words: - distance learning, higher education, e-learning platform, internet technology

1 Introduction

In a certain sense, distance learning nowadays can be compared to early cinema. The producers of the first movies had the tendency to make them as close as possible like the theatre plays – a static camera fixed on a scene. It took some time until the directors realized that the camera could be moved, the scenes could be filmed from different angles and time could be manipulated at the editing table.

The comparison can be applied and analyzed at all levels for the design of materials and the projection of the distance learning environment. "The directors-teachers" start to exploit more and more the potential of this type of education. The new digital technologies and recent research in the field of visual design (visual design, screen design, eye tracking etc.) enlarge significantly the sphere of possibilities and foreshadow a future which will definitely leave behind the "the written history" of distance learning.

Distance Learning has a very long history (Figure 1) that started in Europe since the beginning of the last century. In fact, one of the earlier forms of distance learning was done through correspondence courses. In this case paper documents were prepared and sent to students by postal service, and learners provided their feedback in the form of filled questionnaires and documents to the teachers for the examination.
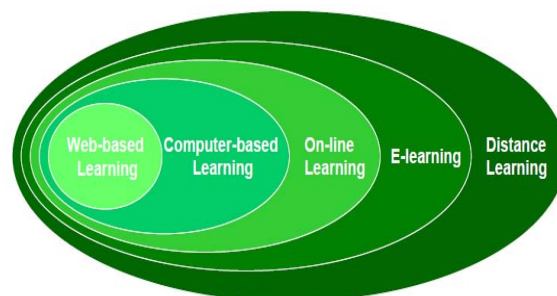

Fig. 1. *Distance Learning evolution [1]*

Nowadays *distance learning (DL)* is using new methods to determine an increased flexibility of the learning process concerning space, time, the choice of content or teaching [2]. DL promotion is justified by its potential to achieve certain general objectives of current education such as: permanent education and openness towards society.

DL (the distance is between the teacher and the student in space and/or time) is a mostly technical notion, its implementation belonging to institutional decision.

Characteristics of distance education:

- Separation between teacher and student in time and space
- The use of technology for educational purposes
- Ensuring double-way communication
- Redefining legitimate knowledge

- An individualized pedagogical relationship
- The active and constructive character of learning
- Orientation to problem in distance learning .

Problems that distance learning can solve:

- Physical distance
- Time and planning problems
- Limited available space
- Limited or dispersed registration
- Limited number of available teachers

If in the traditional classroom the weight (?) of the teacher's messages was in proportion of 60/80%, in the on-line course the rapport changes. From Fanders'2/3 law we go to 1/3.

Thus appear the advantages of learning with computer-based materials:

- Increased flexibility of the material and possibility of permanent updating with minimal costs
- The integration of a variety of learning environments
- Possibility of immediate access to a lot of other resources available on the Internet
- Increased motivation and more active engagement of the student in learning
- There are still some limits of this "technology :
- The necessity to get familiar all the time with the new technological facilities
- The high costs of implementation
- The isolation of the student which doesn't allow to maintain motivation at a corresponding level for long term
- Difficulty in organizing the study and in reserving the necessary time for it
- Difficulty in developing some special skills
- Too much information

2 Distance learning at BBU

BBU is a public institution of higher education [3] whose mission is to promote and support in the local, regional, national and international community the development of specific cultural components.

In the actual context, these components are:

- A culture of action based on systematic and innovative knowledge (a culture of scientific and technological competence, organizational competence and civic competence)
- A culture of permanent and innovative learning;

- Multiculturalism (?) , intercultural and inter-religious dialogue
- A culture of personal and moral development;
- A culture of pro-active attitude and participation;
- A culture of personal development;
- A culture of integration in diversity and globalization, under circumstances of identity respect and reciprocity.

Set up in 1998, The Centre for Continuous Training and Distance Learning started to offer distance learning courses for the specializations of the faculties of Psychology and Educational Sciences, History and Philosophy and Political and administrative Studies. The first groups were bachelor studies for specializations acknowledged at that moment, exception being the post-graduate program from Informatics.

Having quite an evasive law framework, distance learning has developed in the system of dual universities (where the materials were presented both on classical support, printed and – partially- on electronic support and face-to-face meetings have an important place in the learning process– „blended learning". More and more departments set up distance learning sections, since the academic year 2008-2009 in UBB Centre there have been functioning a number of 28 specializations at bachelor level and 18 at master level, with a total of 7500 students, for the Romanian and Hungarian lines of studies.

According to the action Plan in e-learning of the Council of Europe adopted at Lisboa in 2000 at the level of the BBU senate [4,5] were established **general objectives** which through The Centre for Continuous Training and Distance Learning intend to:

- create infrastructures which will attract a bigger number of students to e-learning through the integration of communication and informational technologies in the distance learning process;
- create a culture of continuous learning ;
- developing a quality educational content

From the ones above logically derived **specific objectives**:

1) e-learning must be a form of continuous education, completely open, in order to enable the education of all age groups from any sector of the society. We propose the following phases in achieving this objective:

a) The faculties will develop inside/intra networks (LAN)

b) The teachers/students should be connected at

home or on the mobile component (including m-learning)

2) BBU must continue the policy for developing e-learning infrastructures and digital content based on open and inter-operable standards;

3) supporting the development and understanding of specific pedagogy for e-learning through specific training programs

4) it is necessary to monitor systematically and comprehensively the actual development in the e-learning communities, by promoting the best practices in the field;

5)emphasis on allocating supplementary funds for accelerating the development of teachers'competences in using educational technologies in professional practice;

6) developing partnerships between the public and private sector

For the functioning of the system we have in view on "chapters" of elements such as: admission, infrastructure, resources, libraries etc.

1. Admission: many distance learning programs in the world emphasize the direct character of the access to distance learning according to the principle "?" . The admission to specializations which have distance learning was adapted in order to encourage the registration of candidates who are the target market for DL (adult population)

2. Course materials and IT support

For the good working of the DL system in BBU a decision was made to acquire a platform dedicated to distance learning.(Fig.2)

Fig. 2

The description of the e-learning platform:

The DL learning platform is implemented on a hardware structure made of

Field server - HP DL140, 1 Gb memory RAM, HDD 2 x 36 Gb which hosts the field domeniul (Active Directory) – which is the basis of the users system, allowing their structuring in organizational units and the implementation of security policies at all levels .

Firewall server - HP DL 360, 1Gb RAM, HDD 2x36 Gb which takes care of securing the application filtering unwanted packages**,** allowing the access only for the users identified through user and alphanumerical password, with high complexity. This server is taking care also of filtering at a certain level regarding the high-risk codes of the virus or worm types.

Communication server - HP DL 380, 1Gb RAM,HDD 2x36 Gb, 6x146 Gb is the server at whose level the mail application is implemented. This is a Microsoft Exchange application which has a great variety of inter-communication the users can be easily configured, accessibility is high and security is also high. The application uses a large range of configurations at the configurations level and has the possibility to communicate with programs of Live Messaging type, even with **Voice over Internet Protocol** communication systems. It is to notice that this server has an extended space at the HDD level taking into account the expansion of the number of users and the number of mails to be stocked. **Server sharepoint HP DL380, 1 Gb RAM, 6x72 Gb –** here is hosted the web interface of the whole system. Sharepoint server is made of several services which through their synergy lead to high level applicability and accessibility the hardware being improved very easily. This server makes the connection database servers for the field and for communication. At technical level, these servers are grouped in "farms" – that is at each level you can add hardware modules without affecting the application and without reconfiguring the interface, but only the administration side.

Server SQL - HP DL 380, 1 Gb RAM, 2x72Gb, 6x146Gb – terver which hosts The management system of databases from Microsoft – SQL Server. This server is optimized for working with the databases where is stocked all the structured information of the Sharepoint application and the communication ones.

The description of the communication facilities used (video-conferences, audio conferences, *Internet*, learning platform, specialized software).

Microsoft Office Live Communications [6] - is integrated with Active Directory, Exchange and SharePoint and can be adapted to the telephony of **Voice over Internet Protocol** type. Intercommunication between these systems is easy, also easy to control once the system is implemented. The system contains a videoconference and audio-conference level well integrated and easily accessible with good sound and image quality

through the innovations brought by Microsoft in the field.

Microsoft Exchange – is a complete mail system which allows sending, receiving and managing mails. Exchange Server is a reliable infrastructure, easy to manage which offers messaging and collaboration 24x7. Exchange Server, the server application especially projected for Windows Server, offers reliability, improved scaling and performance deriving from unified management of messaging, collaboration and network resources.

It is allowed to send e-mails just through the identified users or according to their rights to send e-mail to certain distribution lists.

Exchange has support for the "Block" type lists and the security ones, made up in real time. It reduces the quantity of unsolicited e-mails sent through connection filters.

Exchange benefits at maximum from Windows Active Directory capacity, enabling the system administrators to create an enterprise directory, a single management point for all users, groups, permissions, configuration data, network logging, files, Web partition etc. The back-up and recovery characteristics facilitate the back-up of data and then recovers the data in case of hard disk blocking.

Each transaction of a data base is written in a logging file using a pre-writing model, so that the transactions are registered while taking place, ensuring the highest level of data integrity. Because a messaging system based on a transaction data base offers the highest levels of availability for the users of this system one of the most competitive at the moment..

Exchange Server doesn't have restrictions for the data volume which can be stocked in a single database. An unlimited database offers the technical possibility to increase the infrastructure as the organization grows.

The messages delivered to more than one user on a server are stocked once on that server, with the message indicators placed in the receivers'mail boxes. The possibility to group users in lists facilitates teamwork. As helping elements and for better organization in this system are integrated contact agendas, a calendar which can be easily configured and helps sending messages automatically.

The mechanisms through which the e-learning platform is coordinated, analyzed and periodically updated.

RSS (Really Simple Syndication) is a modality through which one can monitor the activity and at the same time complete it on any side of the portal's web-part. One can manage RSS assistance for the following elements:

- Site collections
- Superior sites and sub-sites
- Web applications
- Lists

Any modification is recorded and at the same time the warning about this modifications is sent through communication means such as e-mail to those who are really interested in these modifications. This thing leads to fastness in responding to the problems raised by students or any other user who needs it

At CFCID level the information of general character at the university level is processed and transmitted to the IT Department to be loaded on the DL portal after by approved by CFCID directory. At faculty levels the information is managed at the level of study directors and secretaries and transmitted to the system engineers who load on the DL portal the section of the faculty or the corresponding study program.

Description of services offered to students by the e-learning platform

In order to log on the main page of the portal, the students must identify themselves with a user and a password**.** This security is offered by ISA Server (Internet Security & Acceleration Server). ISA offers secured Internet connection, a rapid and manageable one. ISA Server includes an extensible firewall on several levels characterized by dynamic filtering of packages, transparent SecureNAT, smart application filters, system protection and an included system for detecting the intrusions. The high-performance cache accelerates Web access saving at the same time band width and it is scaled for efficient and dynamic balance of the charge. Flexible management instruments offer policies on several levels for the users, applications, destinations, schedules and types of content. ISA Server is integrated with security services and directory Windows Server, private virtual network (VPN) and control of the band width. A rich platform for extension and personalization, ISA Server includes application filters, Web filters and cache control.

The management characteristics from Office SharePoint Server 2007 are placed into three categories : document management, registration management and Web content management.

Fig.3

The document management controls the evolution of the documents in the portal – the way in which one creates, revises, publishes and accesses. First the document is created, then saved, then shared with the other users. As new versions are developed, they are monitored and organized. Through the portal, the users can apply corresponding policies at each step of the document evolution, they can use centralized storage space for stocking, managing and accessing documents and they can use labels and bar codes to monitor the documents efficiently.

In the portal for purposes of automation and for easier work with the documents which can be the curriculum of the courses syllabus we can use a site pattern for documents. The site pattern for the document centre enables us to create management sites ay large scale which accept well-structured scripts for managing documents. The implicit settings for the site pattern for the documents Centre accepts a powerful control of the content: exit checking is needed before editing, major and minor versions are activated, the support for multiple content types is activated and the auditing is also activated in order to monitor the modifications of content in time.

At the level of the portal, the collaboration level tutor-student is high, sharepoint having a multitude of collaborative possibilities. Thus, using site patterns to collaborate or manage meetings are projected to help collaboration for documents. For example, by using the site pattern *Working space for documents* we can work with others in a document or set of documents. The site patterns from the Meetings group are grouped to help us manage different types of meetings. The patterns from this group accept anything, from basic meetings to decisive meetings such as exams and events. Another facility would be sharing documents, contact persons,, activities and calendars. There is a

possibility to synchronize the calendar Office SharePoint Server 2007 with Outlook – which is a mail management system. We can introduce events which last for a whole day and we specify more types of periodical events. We can monitor more efficiently the team projects using visuals for days and months.

An important facility of the portal is sending e-mail messages to Office SharePoint Server 2007 . You have the possibility to participate in discussions, meetings and documents in the portal. In the same way you send e-mail messages to a list of users, you can send e-mails to a site, to a certain list or a library Office SharePoint Server 2007. It is also possible to archive the e-mail which is sent to a site or a list, so that the members of the team could follow a discussion easily on a site instead of searching for messages in their Inbox.

Access to resources – virtual libraries

In order to ensure access to learning resources **at** CFCID of BBU a decision was made as follows:

- creating virtual libraries and a portal for accessible online resources and for distance students;

- developing labs at DL centres for the colleges in the area.

These activities are in progress in September 2008 following that during the academic year 2008-2009 we are going to obtain the first resources adapted to the e-learning standards.

3   Conclusions

Distance learning remains undoubtedly an important trend in the dynamics of developing learning systems, including Romania, without claiming to replace the classical "face to face" classroom..

In Romania the distance learning system is still in the incipient stage and starting forms, from the point of view of development, having just 10 years since the implementation of the new formats in USA and EU.

BBU is a university which chose through the pioneering in the distance learning field in Romania to align to the new tendencies in the academic world and to the more diverse learning demands having for a target the observance of the highest quality standards through the implementation of methods supported by the latest IT applications (Microsoft SharePoint) and trying to move from the actual system of „blended learning" to the real distance learning from the best known universities in the world.

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