Distance Learning: Integrating four different approaches

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Abstract

The quality of life long learning education and training systems constitute one of the most important assets of a society based on information and knowledge. The significance of life-long learning and training is a very important and fundamental element not only for the competitiveness and the faculty of professional re-establishment, but also for social integration, the activation of citizens, and for personal growth and development. The activities of life long learning and training take place in various environments, which presuppose a bigger investment in human potential and knowledge, the acquisition of basic skills, including those of information technology. The objective is that all people, irrelevant of age, have free access in various high quality educational methods, in an integrated scale of educational experiences, official and informal, in the whole of Europe.

In its effort to upgrade the quality of these systems, the European Union promotes programs such as the Leonardo da Vinci for the development of new and innovative systems and methods regarding life long learning. In this paper, the outcomes of the project WEBBITT (Web Based Information Technology Training – a Leonardo da Vinci project) are presented. WEBBITT integrates four different approaches in the learning process. The aim was to broaden the access to vocational training by developing new innovative educational methodologies which incorporate the use of Information Technology and distance learning into more traditional means of delivery. It contributed towards the development of information technology skills for addressing the problem of the identified technology skills gap that exists in the European Union. The target competences were based on the Pan-European standards ECDL.

Keywords: e-learning, distance learning, integrated methodologies

1. Introduction

Educational systems play a key role in providing people of all ages with equal and open access to high-quality learning opportunities, and to a
variety of learning experiences. They seek to integrate Information Communication Technologies (ICT) into their curriculum to transform the way we learn. Access to knowledge is one of the highest priorities in a knowledge based society. In societies that rely on the Information Technologies (IT) industry, it is vital to provide the necessary vocational training, initially for industry employees to keep up with state of the art technologies and remain competitive in the market, as well as for non-qualified people to make a transition to the industry [1].

The traditional teaching-learning process provided in a classroom setting has proven successful. However, certain restrictions are imposed by the nature of classroom setting, such as the lack of tailor-made education and training. These restrictions can be overcome by e-learning. In fact, e-learning can be used in conjunction with traditional approaches. One of the main interests in e-learning is the creation of platforms for introducing technologies into the educational world, otherwise known as virtual learning environments (VLEs), and using these platforms in combination with other learning methodologies.

In this paper, WEBBITT which integrates four different approaches in the learning process, including a VLE, is presented, along with the results obtained. Section 2 presents an overview on integrated methodologies and Section 3 on VLEs. Section 4 describes WEBBITT and Section 5 its results. Section 6 presents some conclusions.

2. The Integrated Methodology

The integrated methodology for learning is a significant issue in the educational sector. Integrated learning is often used in order to show the combination of asynchronous self-study with the traditional way – the face to face activity. Traditionally, colleges and universities have used this integration for over 200 years: the professor teaches live in the classroom, and then assigns homework - an asynchronous activity.

The wider uses of the term "integrated learning" propose another more complicated and useful approach which examines a broader spectrum of traditional and e-learning ways of delivery. Through his experiences, R.H. Jackson, [2] interprets the combined learning as an opportunity for the life long student to be educated and obtain his/her diploma. The integrated education seeks the most optimal mix of self-study, guided by the teacher, and the team work. It embraces all the vehicles of delivery (traditional, WEB based, computer-based, and so forth) and selects the "mix" which responds better to the needs and requirements of the target group.

Successful programs of distance education attempt to combine all forms of education (self-study, education guided by the instructor, and team work) in both dimensions of delivery (asynchronous and synchronous) within the frames of programs of study.
2.1 Distance learning vs. face-to-face traditional learning

The United States Distance Learning Association (USDLA) defines distance learning as:

“the delivery of education or training through electronically mediated instruction including satellite, video, audio, graphic, computer, multimedia technology, the internet and other forms of learning at a distance” [3].

Distance education refers to the teaching and learning situation in which the tutor and the learner are geographically separated and therefore rely on electronic devices and hard copy material for instructional delivery. Various advantages and disadvantages exist between traditional face-to-face teaching and distance learning. Distance learning is characterized by the following advantages: (1) reach a wider learner audience, any time, anywhere, (2) meet needs of learners who are unable to attend class, (3) link learners from different social, cultural and economic backgrounds, (4) scheduling conflicts associated with traditional classes are avoided, (5) learners gain computer skills required by online classes thus learning new technologies often required in today's job market, (6) learners are provided with motivation and goal setting skills applicable to all other areas of life, (7) learners have the opportunity to take a specific course they might not have access to otherwise, (8) it provides access to teacher-training opportunities for teachers with family responsibilities who are earning an income and need to remain within their communities.

Disadvantages to distance learning are: (1) face-to-face interaction may be minimized or eliminated. Tutors, sometimes, rely on a number of visual actions and reactions from their learners to enhance their delivery of the course, (2) learners may feel isolated and alone, (3) learners must be self-motivated and diligent to complete coursework

One solution to some of the problems experienced with distance learning is to opt for “blended learning” where both the strengths of distance and face-to-face are blended together in one training program. WEBBITT takes this approach [4].

3. Virtual Learning Environments

The development of the new information communication technologies, including the Internet based ones, education via a VLE, has become a daily phenomenon.

Web sites are usually information pools. In a lot of cases however, these pools of information are simply unstructured spaces made up of HTML files without any architectural structure and layout of information.
Structure, however, results from the analysis of functional requirements of an environment which still need to be studied systematically. Some examples are [5]:

- Use of information in educational interactions. For example, the answer to a simple question such as "give me an example...or give me a supporting argument......". This kind of information should be stored dynamically in databases or in HTML files enriched by meta data.
- Multi-authoring. The information that is found in a VLE is produced by a multiple authors: instructors, students, and other experts. Thus, there is a need for control mechanisms for determining the material that should be stored by the system, and also who has access to it.
- Maintenance of information. The Web site should be designed and developed carefully, also that the maintenance would not be cumbersome.
- Sharing of information with the outside environment for educational purposes.

3.2 A VLE is a social cyberspace

A book can hardly by itself be considered as an educational environment. But, reading and discussing a book in a seminar with others, it constitutes an educational environment. In a similar way, a Web site does not constitute a VLE, unless there exists social interaction for or about the information on the Web site. To achieve social interaction, synchronous (e.g. chat rooms) and asynchronous (e.g. email, forum) communication is necessary based on text, audio or video [6]. Students and instructors become inherently social, as soon as they meet in the cyberspace of the VLE. The researchers have introduced the term "position" [5] in order to underline the social impact of this space. “Positions” are places where people interact [7].

3.3 The virtual space is presented explicitly

A VLE is not simply a Web site. It can oscillate from straightforward text to complex 3-dimensional graphical productions which influence students’ work. The basic issue is not how a VLE is presented but what the students do with it. However, the impact on students may not last for long, as it is usually the case with all exogenic motives [8].

3.4 Students are also contributing members to a social informational space

In Web-based environments, learning activities oscillate among multiple choice questions to problem solving. Their activities, however,
are not limited to the utilization of information. Students become part of the system as well as information producers. The difference between the virtual and the traditional environment is the fact that the students in the virtual environments are not only active, but also contributing members of the social informational space [3].

3.5 VLEs are not limited to distance learning

The Web-based education is often connected with distance learning, while in practice, is also used widely to support traditional learning. The gap between distance and traditional learning narrows down for various reasons. A lot of distance learning students do not live far away from the physical school but have time restrictions. Asynchronous communication provides them with time flexibility, an increasing concern in our society. A lot of WEB based courses combine the distance and the face to face methodology, which renders the educational environments more robust. This issue is important when it comes to vocational training, tertiary education and life long learning in those disciplines.

3.6 A VLE incorporates multiple tools

The traditional educational environment incorporates in general the courses offered, the resources (libreries), the official communication and the informal communication (cafeteria), as well as the administration. Similarly, a VLE incorporates various tools that support these operations. The idea of an environment includes this meaning of integration. This is evident in virtual universities where most of the operations that exist in a real university environment such as registration, help desk, leisure time and amusement, have to be reproduced.

4. WEBBITT

WEBBITT, has been carried out within the framework of European program Leonardo da Vinci, and it aimed at broadening the access to vocational training by developing new innovative educational methodologies which incorporate the use of Information Technology and distance learning into more traditional means of delivery. Its main objective was the development of information technology skills and products in order to address the problem of ICT skills’ gap in the European Union. The target competences were based on Pan-European standards (European Computer Driving License- ECDL).

WEBBIT combines four different approaches to distance learning. The first approach is WEB-based. It uses - LearnOnLine - a virtual learning environment. LearnOnLine courses have been designed for learners who have access to a personal computer and to the Internet. The
second approach is through the use of a CD-ROM, which allows learners to work off-line but interactively. The third approach is the traditional face-to-face method where courses were carried out in the traditional way. The last approach is through printed material where the learner finds the necessary tools such as demonstrations, quizzes and exercises along with their answers. The material was also distributed via the virtual classroom.

The four approaches have been integrated to form a collaborative learning instructional paradigm rather than the self-instructional model of multimedia authoring systems. Programs that combine conventional and distance methods are likely to work better than those that rely on a single approach. The four approaches combined have not been designed as second-class alternatives to one of the delivery methods described above, but as a part of a complementary system using the four approaches, each chosen for its appropriateness to the curriculum and the audience. As such, they make extensive use of the asynchronous and synchronous collaborative tools available via the Internet.

All such blended learning programmes need to deploy the appropriate technologies and approaches to learning. The needs of the learners must determine the technology rather than the needs of the technology determining how learning takes place.

4.1 To VLE LearnOnLine

Access to LearnOnLine virtual classes is via a username and a password. Some of the tools that exist for instructors and students are: (1) conferencing system, (2) chat rooms, (3) ability to download documents, (4) ability to upload documents in their virtual classroom, (5) user profiles, (6) hyperlinks in related web pages, (7) email, (8) timetable for every student, (9) notepad for every student, (10) tracking facilities for the instructors. Figure 1 shows part of the LearnOnLine environment.

Figure 1. Part of the LearnOnLine environment
4.1.1 The creation of a virtual classroom

The tools available in the VLE are decisive on how the instructor will create its virtual classroom. The knowledge for the available resources and how they can be used in the virtual classroom are equally important. The explicit objectives of learning with reasonable correlation of the objectives are as important in the virtual class as they are in the traditional one. Experienced instructors have generally an explicit comprehension of what resources would like to use in order to achieve their objectives.

The structure of the virtual class depends of factors such as: (1) the particular needs of students, (2) the particular characteristic and traits of the VLE, (3) the nature of the subject taught, (4) the technology available, (5) team work courses or self-paced.

5. Results

Twelve trainers from four different countries (UK, Ireland, Cyprus and Hungary) shared experiences and worked together in developing methodologies and materials to support distance and flexible learning. The four methodologies mentioned earlier were integrated to form a collaborative learning instructional paradigm rather than the self-instructional model of multimedia authoring systems.

The blended approach was tested in pilot courses run in the four countries mentioned above. The trainees were chosen to be public sector workers interested in continuing education and acquiring knowledge in Module 2 and Module 7 of ECDL.

Upon completion, instructors had to evaluate the pilot course. All instructors thought that the blended approach required more skills and work from their part having to coordinate all aspects of the four methodologies including the setting-up of the virtual online class. They all thought though, that this method was more beneficial for the trainees.

Trainees had to anonymously complete an evaluation form for the pilot course. 90% of the trainees considered the blended approach to be better than the traditional face-to-face or CD-ROM alone instruction. Comments on their evaluations indicate that they felt that they benefited from the advantages of every method. It should be noted that face-to-face classes were held occasionally. Most of the training and studying was done individually, remotely, under the instructor’s guidance, through LearnOnLine, CD-ROM, handbook or plain e-mail. Trainees simply stressed out the fact that, on one hand they studied on their own pace, during the hours convenient to them, and on the other hand they had the gentle instructor’s pressure, guidance, assistance and control. Trainees valued the instructor’s guidance (LearnOnLine or face-to-face) mainly because they were not in touch with school and education for some time. The other 10% of the trainees were also satisfied with the quality of the
course but preferred that face-to-face is not included in the integrated methodology. Due to their lack of time to attend classes, they preferred that the face-to-face instruction is incorporated in the LearnOnLine environment.

Instructors acknowledged the fact that individuals seeking to attend such courses require some basic knowledge about computing. Face-to-face meetings proved to be more beneficial to weak-in-computing trainees, because they needed the extra help to understand how to go about using the CD-ROM and the LearnOnLine.

6. Conclusions

This work acknowledges that there is a continuing and vital role in every constituent methodology of the integrated approach. Instructors and trainees were able to apply and compare different approaches to the learning process and see the advantages and disadvantages of synchronous and asynchronous tools. They were all positive about the blended methodology and it is evident from the results that programs combining conventional and distance methods are likely to be better than those relying on a single approach.

Our research findings are based on public sector employees but are easily transferable to other target groups.

References


