IMPROVING QUALIFICATION AND LIFE OF DISADVANTAGED YOUNG PEOPLE BY OPEN DISTANCE LEARNING BASED ON NETWORKING TECHNOLOGIES

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Abstract

Open Distance Learning has adopted new forms due to the development of information and communication technologies like the Internet and the Web. They could help also young people with locomotive disabilities or social difficulties to be integrated into the contemporary knowledge-based economy. In this paper open distance learning methods and suitable supporting open learning environments based on the Web are briefly presented.

The first steps of the on-going LEONARDO project "The vocation training by ODL of young people with a locomotory disadvantage " which is carried out by the IAT and CePTIC in cooperation with non-governmental organisations, universities, research institutes and other economical agents from Great Britain, Hungary and Romania are also described in this paper.

1 Introduction

A strategic document published by the European Union in 1995 entitled “White Paper on Education and Learning” (*EC*, 1995) mentions the possibility of an information network as a powerful tool for social and educational development which supports the notion of life-long learning.

Many countries understand to change their educational system and to provide increased learning opportunities. Open Distance Learning (ODL) seems to be an innovative answer to challenges and demands constantly arising at the work place and it is already used also in many European countries. ODL has adopted new forms due to the development of information and communication technologies, particularly networking technologies like the Internet and the Web (E-learning, Web-ODL). Particularly this form of learning can help young people with mobility impairments or social difficulties to be integrated in the contemporary life and knowledge-based economy. Most young people use the Internet with pleasure.

After a presentation of new forms of ODL (part 2), important aspects referring to learning environments for ODL (OLE) (part 3) like appropriate technologies and social organization of learning, e.g. the building of learning communities and of virtual competence centres of ODL (part 4) are briefly described in this paper.

How ODL can help disabled people to improve their qualification and life as well as an example, the on-going LEONARDO project "The vocation training by ODL of young people with a locomotor disadvantage - EURO H " are also briefly presented (part 5).

2 New forms of open distance learning

Distance learning (DL) has been created as a short gap measure in the continuation of postal tuition and used only when other methods of learning were not possible due to living abroad, illness, disability, etc. At the end of the eighties DL began to use information technologies in the learning process. The third generation of the DL (in the nineties) is characterised by the combination of several mediums and by its open access: open distance learning (ODL) defined by UNESCO as "a return to a philosophy where teaching implies an open and comprehensive access to training opportunities" (UNESCO...).

New forms of ODL and interest in these forms are partly fuelled by widespread availability of the Internet and partly by the understanding that rapid global changes and technological innovation require life long learning and hence non-traditional modes of education delivery. E-learning is a new paradigm of learning which means not only “electronic delivery” of learning material but also innovative methods to acquire *knowledge* and skills by using information technologies (IT).

It includes solutions for open distance learning by using the Internet – *telelearning*, particularly Web-ODL.

A main characteristic of the e-learning is that the network technologies are used to:

- create, foster, deliver and facilitate learning anytime and anywhere,
- deliver individualised, comprehensive and dynamic learning content in real time,
- facilitate individuals and organisations to keep up with rapid changes in the information society and knowledge-based economy
- develop virtual *communities learning* which support knowledge acquisition by linking learners with experts.

That is a growing consensus between trainers, administrators and students that the Web provides an opportunity to improve the quality of learning. Many people hope that by using the Web we will be able to provide students with high quality educational materials that support active learning against a background of declining funding and increasing student numbers.

"Web-based learning is important not only because it demystifies Web technology, but more importantly because it provides a critical link between the technology and the outcomes of learning" (J. O´Connor, educational technology integrator, Motorola University).

Web-based technologies drastically change how distance learners communicate with their professors and with each other. Presently, distance students do not have to wait days and weeks for responses; e-mails are faster than phone calls or faxes. They can access not only local libraries but also other huge amounts of information available on the Internet.

One main advantage of the Web is that the information is dynamic. Trainers can update their material whenever there is a need for it; students are kept up to date with the most recent news about the learning material.

Flexibility is another advantage of Web-ODL. This refers to flexibility of time or/and of place of study, to the choice ("modularity") of learning content, to possible frequent updates and to the ability to respond to specific demands. So, Web-based learning facilitates the development of continuous and life-long learning processes by serving ever-changing needs of learners throughout their life-span and by supporting connections between learning and working. In order to achieve this goal, the content of web-based learning modules can be closely integrated with the work of the trainees, and the knowledge and skills they are learning should find immediate application within their work and life.

3 Open learning environments

The use of the Internet and the Web for ODL met also disapproval by teachers and students because of the question if flexible open learning environments (OLE) using these technologies bring progresses in changing traditional classrooms. Recently ODL has additionally functions as conventional learning, e.g. computer-supported acquiring and distribution of knowledge, creating new knowledge as well as collaborative learning.

In order to fulfil such requirements, we are going to use in our project EUROH as model, the OLE ProTo (*Pulkinnen*, 1998) developed at the University of Oulu, Finland.

Figure 1 shows the main elements of the open learning environment ProTo (*Pulkinnen*, 1998a):

ProTo is an easy-to-use OLE that contributes to modern flexible Web-ODL.

Pedagogical functions of the ProTo refer to the OLE practical activities and study methods that make learning possible.

The learning activity, which is one of the main functions of an OLE, should be closely connected with student's real-world activities, situations and social relations. An OLE should offer to the student tools for studying and reporting the results, but also for a proper assessment of their true knowledge level and learning progress.

The use of materials available in a variety of formats (mainly as computer-based technologies, but also as broadcasts, print, audio and video recordings), can have a reinforcing effect, and allows students to choose the

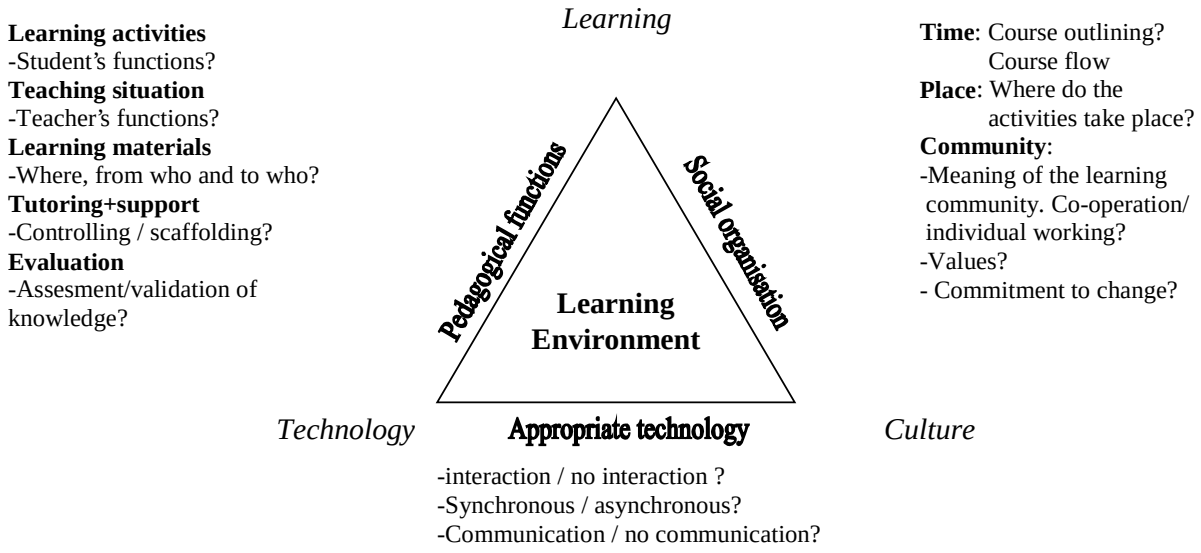

FIGURE 1. *The Elements of the Open Learning Environment (see e.g. Pulkkinen & Ruotsalainen , 1998)*

approach that best suits their learning and own evaluation styles**.** Moreover, the OLE could envisage two different approaches: one in which the ODL methods represent the single way to teaching and the second, in which the ODL methods are used supplementary to traditional courses. The last one would provide to the student an opportunity for choosing the appropriate method or for revising some material previously covered in traditional lectures on the web, thereby increasing understanding and learning. On the other hand, the "ODL-traditional" teaching combination would allow students who miss classes through, for instance, medical appointments, to make up what they have missed (if they have access to the web). This could be beneficial to school as well as college or university students.

In addition, making the best use of the medium to encourage student interest and active learning requires different approaches to teaching. It is not particularly effective to simply place a set of notes on the web or transmit a traditional lecture across a video (or audio link). Therefore some teaching staff will require training and access to appropriate resource materials to learn new approaches that are more appropriate for the new media. On the other hand, web based and other ODL materials need to be updated just as frequently as materials used in a traditional classroom.

Regarding the evaluation activities, it is important not only for tutors to correctly evaluate student results, but also for the students to be being involved in the validation process of the information produced on the course. This would lead to more critical and reflective discussions of the course content.

Another main aspect in an OLE is the learning (teaching) material, which has to play for the student a role of a library. Such kind of material should offer literature references or short advice for problem solving as well as background information about the content of the ODL-modules.

But there are also related activities (administration, promotion, marketing, etc.), which are important in a learning environment and can contribute to the success of an ODL-process (*Hamburg/Ionescu,* IFAC, Kassel). For example, an ODL-teaching material with good content may not reach the user in due time because of a bad administration; another case of unsatisfactory ODL is when an evidence of the progress the trainees do in learning is missing (*Logofătu&co,* 1999).

An important goal in the development of OLE (*Pullkinen*, 1996) is the finding of a balance between the study methods, the content, the technology and the practical organisation of education. Mention should be made that decisions on choice of media and technologies should be based on considerations of access, quality and cost. Corresponding their profile and situation, different institutions will assign different priorities to these three factors.

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In the following part we present an important social aspect of the ODL: the building of learning communities.

4 Virtual learning communities - virtual competence centres

The main disadvantage of distance learning approaches is the lack of direct face-to-face contact with teachers and other students. Social communication, which is an essential component of every educational activity, is missing. High quality teaching support of an appropriate type is of great importance for successful learning. Support from other students and social interaction are also generally vital for maintaining morale and motivation, which have a significant effect on progress and 'success' in any programme of learning. Although distance learning has often promoted the idea of the independent self-directed learner, there is also recognition of the importance of interaction and connection between students and teachers, with learning considered as an essentially social process (*Garrision,* 1990; *Sammons,* 1990; *Shale,* 1990).

The cooperation, which in traditional classroom settings happens sometimes instantaneously, has to be facilitated by a conscious effort to build learning communities.

But one person cannot create an on-line learning community. Although the trainer (professor) is responsible for facilitating the creation process, the community or learning network is entirely dependent on participants and

their willingness to contribute time, attention, ideas and commitment. In order to be considered "present" in a virtual classroom, the students have to access the course site online regularly, and to put in their answers and comments. However, a further advantage of web-based learning environments is that they can facilitate fairly detailed answers and comments, the posting of students' ideas or of full versions of interesting articles (though, technically, this is often done just by sending the Internet address). Also, it is possible to elicit a much more feedback by students on the learning materials and the teaching than in the case of conventional training.

Nevertheless, it is often worthwhile to supplement "virtual" cooperation by some degree of real face-to-face interaction and hands-on experience. Particularly input and output workshops could help the building and maintaining of a "real" learning community and the understanding of the training program. If the web-based learning environment is new for the trainees, sometimes an additional workshop is necessary for them in order to get competence and confidence in the use of the learning environment. This helps trainees to concentrate on the learning content, and not on the technical use of the environment.

Within the process of developing web-based training, care has to be taken to provide solutions, which are right for the medium, but also right for the users. For example: It is necessary to define the level of hardware and software, which the target groups of learners can be expected to use and to design the corresponding learning environment accordingly. On another level, trainees need help and orientation in order to find the right kind of information in the masses of material published on-line.

Many governments are promoting ODL and e-universities, generally as a low cost way of increasing access to (further and higher) education and training. Therefore some teaching staff will require training and access to appropriate resource materials to learn new approaches, which are more appropriate for the new media. Competence centres with a diverse staff of employed specialists are necessary in order to develop and carry out systematically ODL.

The local competence centres (of the ODL) in the form of tutorials can provide teaching support and face-to-face contact both with tutors and with other students, workshops and summer schools. The teaching personnel may be based at the local training centres or the educational centre supplying the course or travel between different centres and/or workplaces.

In addition to more traditional approaches of letters and telephone contact, modern information and communications technologies provide a range of possibilities for interaction between both students and tutors and groups of students, including email lists, discussion and chat rooms and the options of posting queries and solutions to assignments on special web rooms associated with the course and receiving replies and feedback in the same way. Audio and video-conferencing also give a range of possibilities and video-conferencing, in particular, is closer to emulating face-to-face interaction (*Hersh/Ionescu*, 2000).

Starting with this year, the CePTIC (RO), the IAT (GE) and some other partners from Romania, Hungary and Scotland work at the development of a European Competence Centre of ODL, which will co-ordinate the quality of the ODL activities on the European level.

We use the experience of the U.K. where the Agency for the Quality's Assurance proposed a comprehensive code of practices including all the characteristics aspects of ODL.

The competence centre will be a professional platform for information, learning and communication facilitating staff of different organisations to get information referring to different topics, products, services as well as to exchange experiences within discussion forums, per e-mail or in chat-rooms. It is intended to offer training in

basic disciplines like mathematics, in Internet and Web, in e-learning and tele-working for people with locomotive disabilities to support their integration into modern European economies.

5 Improving qualification and life of disabled people by ODL

As shown at the conference "e-Europe – An Information Society For All", "attention must be given to improve education and training opportunities and ensure the full participation of people with disabilities in society. Care networks should be designed to provide special multilingual online services or increase the independence and security of disabled people. Digital technologies can ease the administrative formalities involved in operating both private and public social service systems."

In Europe the industry failed to use the market potential for many services and products targeted at disabled people. Most handicapped people have satisfaction in their professional activities but sometimes there are certain work environment conditions and work rhythm imposed in the offices, which constitute insuperable constraints for people with particular disabilities. The improving of their qualification with conventional training programmes is often difficult. Additionally to these problems there are other limits that disability imposes on daily life.

The labour market is often quite unreceptive to disabled people, so the percentage of handicapped people, which have a paid job, is much lower compared with that of the total population.

In theory, ODL, particularly by using networking technologies (Web-ODL) offers real opportunities to overcome certain handicaps like visual, hearing, and speech problems as well as locomotive deficiencies and to improve the learning possibilities and the quality of life and work for people with such impairments.

For example ODL plays an important role to a better social integration of disabled people:

- by facilitating access to new services, new knowledge and new forms of work like tele-working from any place without having to travel only using the necessary equipment,
- by breaking the isolation that disabled people feel in life and learning through their integration into a virtual learning community,
- by restoring a social identity for them through giving them access to work or helping them maintain a job by improved qualification.

In the following we present an example of a Euro-cooperation in this direction with partners being non-governmental organisations, universities, research institutes and other economical agents from Germany, Great Britain, Hungary and Romania. One of the topics of this European cooperation is to improve the training of the young persons with mobility disabilities by using computer based ODL, particularly Web-ODL and corresponding learning environments in order to help them to find work places in nowadays society within the EU-Leonardo Project EURO H.

6 The Project EURO H

The main objectives of the project "The Vocational Training by ODL of Young People with Locomotory Disadvantages" (short title - EURO H) are:

- to improve skills and competence of young people with disabilities in some disciplines;

- to improve the quality of, and access to, continuing vocational training for young people with mobility impairments from Europe;
- to promote and reinforce the contribution of vocational training to the process of innovation.

This project will contribute to overcoming the barriers to the employment of young people with mobility impairments through the provision of different categories of training for two main target groups: young people (14-28 years old, men and women) with mobility impairments and employers and workers in job centres and training centres, initially in the partner countries and eventually throughout the EU.

The work within the project will bring benefits to both society as a whole and young people with mobility impairments. Benefits to the society include the following:

- encouragement to use the creativity and skills of sections of a wider section of the population;
- contribution to meeting the skill gaps faced by employers by providing wider pool to choose from;
- increasing productivity;
- reducing the social, psychological and financial costs of dependency.

It will benefit young people mobility impairments by increasing the range of opportunities open to them and helping them to become (financially) self-supporting and to make a positive contribution in society. This is very important socially and psychologically, in terms of positive self-image and high self-esteem, as well as practically.

The launch of the project was made in Bucharest (Romania), in May 2001. With this opportunity the strategies, which must be applied, have been settled, and the priorities, which must be taken into account during the project's realisation, have been determined.

A virtual learning community consisting at the moment of some European experts in Web-based training, trainers with experience in teaching disabled people as well as members of organisations of disabled people and last but not least of some disabled students is set up this month. During the project it will be extended with other specialists.

Other activity which is planned for this year is to carry out comparative about the employement situation of young people with mobility impairmants studies in Romania, Germany, Great Britain and Hungary. The studies should include the degree of access to computers of young people with mobility impairmants and the adaptations required for their particular disabilities, the use of the Internet and the Web by them.

According to the results of the studies the development of training modules and of the Web-based learning environment will be done next year.

7 Conclusions

Open distance education can partly help to overcome the obstacles that the handicaped often encounter in learning situations, if for each of the different needs of the various situations and different types of handicap suitable learning tools are used. So many distance learning projects or experiments which offer different ways of approaching distance education, by combining different pedagogical methods and technical means are needed in order to achieve such an objective. The role of our European Competence Centre will be to promote and support European projects with this topic.

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