




Improving Qualification and Life of disadvantaged young People by Open Distance Learning based on Networking Technologies

Ileana Hamburg¹ und Bucur B. Ionescu²


¹ Institut Arbeit und Technik,
Wissenschaftszentrum Nordrhein-Westfalen
Gelsenkirchen, Germany
hamburg@iatge.de

² Pilot Center for Information and Communication Technologies (CePTIC)
Bucharest, Romania
bbi@snsipa.ro



Abstract Open Distance Learning (ODL) has adopted new forms due to the development of networking technologies like the Internet and the Web. These forms can help young people with locomotive disabilities or social difficulties to be integrated into the contemporary knowledge-based economy. In this paper ODL 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 economic 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 networks as powerful tools for social and educational development which supports the notion of life-long learning.

Many countries know how to change their educational system and to provide new learning opportunities based on networking technologies. They use increasingly Open Distance Learning (ODL) which seems to be an innovative answer to challenges and demands constantly arising at the work place.

ODL has adopted new forms due to the development of information and communication technologies, like the Internet and the Web. These forms 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 organisation

of learning, e.g. the building of learning communities and of virtual competence centres of ODL (part 4) are briefly described in this paper.

Showinh 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" (short title EURO H) are also presented (part 5 and 6).

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, 1995).

New forms of ODL in this millennium and increased 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. So 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 networking technologies in ODL processes.

Networking technologies like the Web are used in this form of learning 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 learning communities which support knowledge acquisition by linking learners with experts.

In our projects we use Web-based ODL (Web-ODL).

That is a growing consensus between trainers, administrators and students that the Web provides an opportunity to improve the quality of learning. By using the Web many people hope that we will be able to provide students with high quality educational materials which 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 important 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 being 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 processes. 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 should be closely integrated to 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 meet also disapproval by teachers and students because there is not clear if flexible, easy to use open learning environments (OLE) based on these technologies can be developed which bring progresses in changing traditional classrooms and are easy to use. Additional functions as conventional learning which have to be satisfied by ODL like computer-supported acquiring, distributing and creating knowledge as well as collaborative learning should be also supported by them.

In order to fulfil such requirements, we use in our projects (see also part 5 of the paper) the OLE ProTo (*Pulkinnen, 1998*) developed at the University of Oulu, Finland and the Web-based learning environment developed within the German project FrauTelNet (*Engert, 2000*).

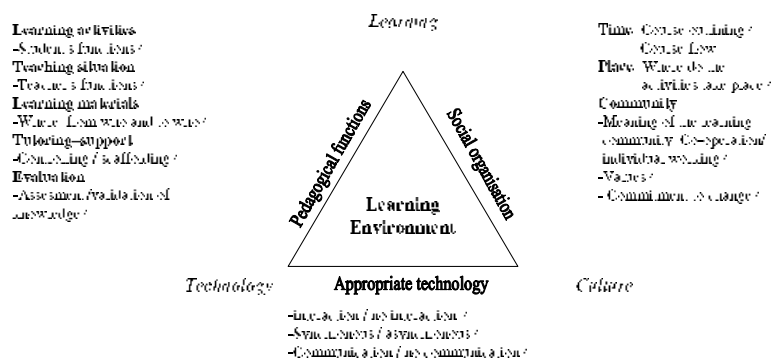


Figure 1. The main elements of the open learning environment ProTo

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

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 by using new media (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 approach that best suits their learning and own evaluation styles.

In an OLE the learning (teaching) material has to play a role of a library for the student. 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.

Referring to decisions on choice of media and technologies they 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.

The OLE should 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 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.

There are also related activities (administration, promotion, marketing) 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 (*Logofatu & co, 1999*).

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 (*Shale, 1990*).

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

One person cannot create an on-line learning community. Although the trainer (professor) is responsible for facilitating the creation process, the community is entirely dependent on participants and their willingness to contribute time, attention, ideas and commitment. In order to be considered "present" in a virtual learning community, 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 supporting learning communities 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 with respect to the building and maintaining of a "real" learning community and the understanding of the training program. If the Web-based learning environment which supports the learning community is new for the trainees, 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-supported learning communities, 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 learning communities and to carry out ODL systematically.

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 within competence centres 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-based discussion 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 in Bucharest, Romania and the IAT in Gelsenkirchen, Germany, 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 particularly in the field of young disabled people qualification.

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

Our competence centre will be a professional platform for information, learning and communication facilitating staff of different organisations from the partner countries which would like to improve situation of handicapped people 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 Web-ODL and tele-working for people with locomotive disabilities to support their integration into modern European economies.

Some activities of this centre take place within the project EURO H (see part 6).

The centre will be connected with similar centres in the European Union.

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 in society of people with disabilities. 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" (e-Europe)

In Europe the industry failed to use the market potential for many services and products targeted at disabled people. 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.

Most handicapped people have satisfaction in their professional activities but sometimes there are certain work environment conditions and a 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.

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 for 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 to maintain a job by improved qualification.

In practice, there is not much knowledge about the modalities of distance studies for handicapped persons and so a controversial issue about the use of ODL for the optimisation of handicapped qualification.

An international comparison of relevant literature reveals that the following attitude is adopted: 'Distance learning in Germany and in many European countries is something for people who enjoy good health and who have no other problems anyway.'

In the following we present an example of a Euro-cooperation with partners being non-governmental organisations, universities, research institutes and other economical agents from Germany, Great Britain, Hungary and Romania for improving this situation. It should help young persons with mobility disabilities to improve their qualification by ODL and so to find work places easily in nowadays society.

6 The Project EURO H

The main objectives of the EU-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 by using ODL,
- to promote and reinforce the contribution of vocational training to the process of innovation.

The work within the project will bring benefits to both society and young people with mobility impairments.

Benefits to the society include the following:

- encouragement to use the creativity and skills of a wider section of the population,
- contribution to meet the skill gaps faced by employers by providing wider pools 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 have to be applied, have been settled, and the priorities, which have been 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-ODL, 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. During the project the community will be extended with other specialists.

Another activity which is planned for the first year of the project is to carry out comparative studies about the employment situation of young people with mobility impairments in Romania, Germany, Great Britain and Hungary. The studies should include the degree of access to computers of young people with mobility impairments and the adaptations required for their particular disabilities and how the Internet and the Web are used by them for ODL processes

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

7 Conclusions

Open distance education based on networking technologies can partly help to overcome the obstacles that the handicapped 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 like EURO H 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 also to promote and support European projects with this topic.

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