DEVELOPMENT OF DISTANCE EDUCATION AND ICT USE IN EDUCATION IN HUNGARY[13]
Problems, Challenges, Solutions

Gabor Laszlo, Hungary

Abstract. The appearance and rapid spread of ICT tools have created a new challenge for society. It also represents both a challenge and opportunity for education. ICT completely changes all of our ideas about education. ICT in education is a complex subject. It has many professional and political aspects. We must think about transforming education with ICTs and the new forms of learning activities to support the objectives of education. This paper will introduce a brief analysis of the Hungarian situation.

Foreword

In this sub-region (Central and Eastern Europe) the countries face similar problems. Their political systems have changed, but the past still strongly affects the current situation. No country on earth can afford to lag behind. However, the solutions in applying ICT in education within each country may follow its own unique path. It is impossible to say that one way is the only way to success.

Education is especially important in the life of a nation's economy, since it will determine the economic potential of the country. Changes within the educational system have a long life span. The effect of the new technologies on the educational system, depending on the speed and unification of the introduction, could be as long as 5 to 15 years. We could safely say that the sooner adaptation happens the better.

Problems in Distance Education

Distance education creates a broad possibility for life-long learning and the spread of traditional structures. Among the most important elements of distance learning is that its cost is lower than the cost of the old fashioned traditional training and education. Most of the cost comes from preparing and producing the training material. Distance education ensures great freedom for all students due to its flexibility in scheduling, timing and placing.

One of the basic requirements of distance leaning is continuous quality supervision, in both the preparation of the learning material and the final exams.

---

[13] (This paper is the edited version of the presentation "Using ICT in Hungarian Education" at UNESCO Seminar in Kiev, 21-23 November 2002.)

This paper discusses only ICT based distance education.

The appearance of ICTs on the one hand brings up the need for life long learning, and on the other hand creates new possibilities and challenges for traditional education, and therefore changes it fundamentally.

In the case of distance education, (as in the case of ICT technologies) the basic teacher-student model changes, and contrary to the current situation, the student becomes the centre of attention. The role of the teacher changes fundamentally as well, because the process of learning becomes indirect. The traditional roles and tasks in teaching become the duty of professionals, who develop training materials, and assist the students in learning. The role of the Educational Institute changes as well, because the Organizational Centre and the content provider roles may become separate. At the same time, the informatical elements used in today's education are often applied using traditional modes of teaching and learning and hardly make good use of the existing potential of ICT to transform education.

Currently Hungary is facing the following obstacles to distance learning:
  – No unified framework;
  – Lack of agreement in methodology;
  – Lack of experience;
  – Lack of content;
  – Access.

The sources are fragmented, because several organizations and institutes are working on further developing content for distance learning, and concepts of distance learning and e- learning, but they lack a unified framework. They also lack pre-developed standards and frameworks.

The level of co-operation is low. The organisation, which needs to fulfill its duty as the centre of distance learning can not live up to expectations because it lacks the capacity to unify the results and develop recommendations. It also lacks experience, although this could be gained in time. But without developing a unified framework, it cannot expect a meaningful step forward.

Although, one can observe a desire for cooperation, this usually stays within the sphere of academia. This was clearly shown at the conference, which was entitled "Electronic Learning: The Pedagogical Challenge of the Third Millennium", where one could see that fragmented initiatives were unable to reach a unified framework.

By access, one usually thinks of physical infrastructure (computer, network, etc.) but, access, means a lot more than this.[14] It is important to know the cost for accessing information and its contents. Cognitive knowledge is vital-one must also know how to use this knowledge. For this reason it is crucial to train people in ICTs. Content appears again, in the previously mentioned meaning, and the lack of it. Institutions have important roles, including their creation of access to this information. Last, but not least, politics and the intentions of the political leadership and the effect of their influence on the market are important.

---

[14] By Ernest J. Wilson

Digital Divide

The problem of access leads straight to the question of the digital divide.

The digital divide may be observed at 3 levels:
– between countries,
– inside the country,
– between students and teachers.

Among these, the division inside Hungary will be examined through the interrelation of access to computer equipment and Internet usage.[15] In recent years, the number of households equipped with a computer showed a dynamic growth, but this number is still quite low.
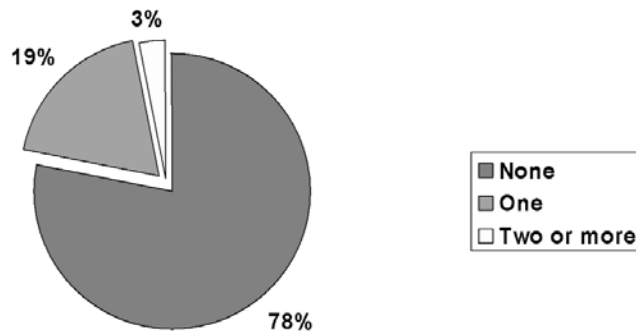
Source: ITTK-TARKI-WIP 2001.09 N=5020

Figure 1. Households equipped with computers

Another aspect is geographical location. "There is a significant difference between the most and least developed regions in Hungary with regard to the use of information technology. The southeast region of the country reached only 19.95 points in an IT scale of 1 to 100 points, while households in Budapest scored 33.1 points."[16]

In general, one can safely say, even in a worldwide respect, that the divide between users and non users is growing. Those who can not access ICTs and those who refuse to use the new ICTs are falling behind.

The digital divide also varies with the degree of education. The following two illustrations show the Internet usage in Hungary, based on the degree of education and the age of users.
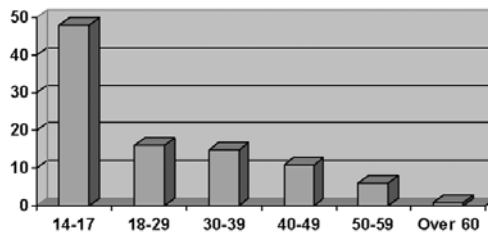
---

[15] The complete text of studies: http://www.ittk.hu
[16] Digital divide in Hungary http://www.europmedia.org
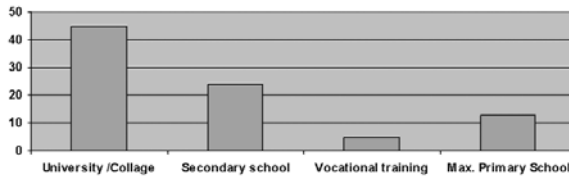
Source: ITTK-TARKI WIP 2001.

Figure 2. Education / Internet use (%)

Source: ITTK-TARKI WIP 2001

Figure 3. Age and Internet use (%)

It shows that the Digital Divide in Hungary is also age-related, and this reveals an important aspect about the usage of ICT tools in education.

Several studies show, that recently-to varying degrees-there is an important role in the rejection, or the lack of interest, and not the relevant content. There is a role, therefore, for the previously mentioned political and institution aspects.

According to an OECD study, the cost of the access (on average) is the highest in Hungary among the OECD countries.[17]

SchoolNet

The SchoolNet program was started in Hungary in September 1996. Its main goal was to supply educational institutions with computers and Internet access. Hungary, at that time, was severely lagging in communication infrastructure, and the institutes for public education also lacked computers.

The rapid growth of the "New Economy" led to the development of today's knowledge society which has required that we integrate the appropriate level of information into public education and create effective communication channels between the participants of public education.

---

[17] Local access pricing and e-commerce OECD report 2001. OECD http://www.oecd.org

	Jun. 1997	By the end of 1997	Sept. 1998	Sept. 1999	Sept. 2000	Sept. 2001	Sept. 2002
Additional connection by SchoolNet	0	700	1350	1775	1875	1875	2340

Source: SchoolNet

Table 1. School Internet Connection Numbers

SchoolNet Express

SchoolNet Express is the next phase of SchoolNet. It was announced on the 16th of November, 2002. by the Minister of Education.

The Main elements of SchoolNet Express are:
- Network;
- Hardware:
  - Computers in schools,
  - Computers at home;
- Additional training for educators;
- Development of digital study material.

Network

According to the plan, the School Net Express will provide Internet access to all schools by 2005.

	Hungary	**EU**
Computers in schools	30 students / computer	9-12 students / computer
Internet access in high-schools	100 %	100 %
Internet access in elementary schools	34%	91-100 %

Source: TARKI, Ministry of Foreign Affairs, OECD

Table 2. Comparison data between the Schools of Hungary and Europe in reference to their number of computers and Internet access capacities.

The plan recognizes the educational value of developing internet access in Hungarian schools to allow access to cultural institutes in neighbouring countries, therefore making it possible to pursue the idea of over-the-border education.

Computers at Schools

By 2006, the goal is that all schools will be equipped with a minimum of 1 computer to 5 high school students, and 1 computer for 10 elementary school students, in contrast to the current 30 students per computer.

Computers at Home

In the interest of supplying educators with computers, the Swedish model was used. Starting in 2003 this model provides tax benefits for those purchasing computers.

Those educators, college and university students, and the parents of such students, purchasing or leasing computers will receive tax benefits. In some cases, this might mean that the computer is free. Starting in 2003, employers (such as schools) will be able to provide employees free computers and Internet access.

	1997	May. 2002	From Juny 2002.	From 2003
Educators who received a computer	650	+ 13.000	+ 6.500	Tax exemption for all educators who buy a computer

Source: SchoolNet

Table 3. Computers were given for educators

Teacher Training

The low level of teacher ICT competence is the main problem for ICT-based educational methods.

First, the competency for using ICT must be created and then this competency can be the basis for further training. Training programs for educators will start January 1st, 2003, and will make a distinction between educators with or without computer skills, and will provide training for those without computer skills.

All educators, who purchase, rent, or lease a computer during 2003, within the program called Sulinet Express, will receive free training, (informatical skills), and exams (for example, ECDL).

In those countries where information-communication technology training programs were introduced into the school systems, they have also prepared the educators for these programs. This was ensured by the training of educators of the elementary and middle schools; the training focused on general technology tools and software programs to be used in instruction. In some rare cases special methods were introduced, for example, those for teaching foreign languages and natural sciences.

The training of these educators was completed by using different levels of programs, and they have also considered the educator's prior knowledge of certain subjects. In Hungary, they have recently introduced the most important informatical skills into the educator's basic training programs. A number of countries have made advanced training in informatics mandatory, and there are some countries, where, besides having a degree in teaching, it is also mandatory to earn a certificate in a basic computer course. (The Netherlands for example, has developed an excellent program for this in distance learning.)

Development for Digital Study Material

Four independent associations have encouraged the development of educational content on a large scale recently in Hungary: Apertus Foundation, Soros Foundation, IKB, and the SchoolNet Program Office. At the moment SchoolNet P.O. does, for official reasons, provide some content for schools.

The amount invested in this area exceeds 1 billion HUF, but it is not easy to estimate the improvements due to communication limitations, lack of strategy and other facts. The above-mentioned organizations, for example, are totally independent from one another. Furthermore a quality evaluation system has not been developed in this area.

Basic tasks for the next 2 years are:
– decentralization of curriculum development,
– inviting partners to the program,
– more intense participation in building European standards,
– starting and coordinating teacher training,
– providing professional and technical background to teachers involved in the program.

Most important goals

The Main goal is a complete curriculum-database that can be developed and customized.

Main points:
– contents should be widely accepted and agreed upon;
– large number of teachers should take part in developing contents;
– "learning objects" should be developed freely, database shouldn't be "closed";
– elements can be movable to fit in different teaching-learning strategies;
– content should be compatible to the European qualifying standards of teaching software and Internet;
– content should be compatible to the International standards of e-learning;

– set up of the knowledge base;
– require the review of the system regularly, follow-up.

ICT in Education

Using ICTs in education is not the same as teaching ICT use. ICT is a subject and also an educational tool.

According to the SchoolNet plan, by 2006 informatical education will be mandatory from the fifth class on in elementary school, and school-leavers in high school will be required to take the ECDL exam.

Last year much successful work proved that informatical and communication technologies have a place not only as a subject, but also as working tools in the schools. This thinking has reorganized the structure and the function of the school system.

The demands for providing in-service training of teachers have intensified. The skills necessary (such as independence, effectiveness of teamwork, skills for solving problems, etc.) are growing and becoming more important. At the same time, those who adopted new technology (for example benchmarking) are participating in pedagogical research.

"Teaching and research centres for educational technology and ICT are currently being established. The UNESCO Chair for ICT in education, found at Eotvos University, acts as a catalyst for educational research and the introduction of computer culture in teacher training. Major research efforts of this centre are testing of ICT-based teaching and examination packages and multimedia teaching aids. These efforts are jointly undertaken by the centre, the Hungarian research site of the EMILE-Educational Multimedia in European Schools project, and the Association of ICT Teachers (ISZE). Increased support allows school libraries to act as knowledge centres, through regular grants for hardware and through grants and training programmes for software."[18]

Conclusion

To build the knowledge-based society, new technologies are necessary in the education and in-service training of teachers. These technologies change the foundation of the educational system. These changes are now underway and it remains to be seen where all this will lead. Until then, the present technologies must be integrated to make the most of their potential.

---

[18] Karpati, A.: ICT in Hungarian Education - A brief overview

References

1. Szabo I., Educational challenge and the possibilities of the distance learning (Study) (Oktatasi kihivasok es a tavoktatas lehetosegei (tanulmany)) (2000) http://www.ntt.hu (Downloaded Nov 16. 2002) (Hungarian)
2. "The age of the digital study material (SchoolNet Program Office Topic of debate) ("A digitalis tananyagkorszak" Sulinet Programiroda, vitaanyag) 2002. http://www.sulinet.hu/sulinetwork (Downloaded Nov 16. 2002) (Hungarian)
3. "ICT in public education, ICT in the ScoolNet", Research program and teacher training schedule by the SchoolNet Program Office ("IKT a kozoktatasban, IKT a Sulinetben" Kutatasi program es tanar-tovabbkepzesi terv, Sulinet Programiroda) (Hungarian)
4. Karpati, A.: ICT in Hungarian Education - A brief overview
5. Local access pricing and e-commerce OECD report 2001. OECD http://www.oecd.org (Downloaded Nov 16. 2002.)
6. World Internet Project http://www.ittk.hu (Downloaded Nov 16. 2002)
7. Information Society and Trend Research Institute http://www.ittk.hu (Online Nov 16. 2002)
8. Ministry of Education http://www.om.hu (Online Nov 16. 2002)
9. SchoolNet http://www.sulinet.hu (Online Nov 16. 2002)