Implementation of E-learning in Lithuanian Vocational Training System

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Abstract

Nowadays in the light of technological, economical and social changes, the problems of overall occupation of people and continuous growth of economy become more important and complex. Continuous development of people’s knowledge and skills, investment in education and vocational training are the main factors stimulating the economical and social development of the state. This paper analyses the situation of implementation of e-learning in vocational training system, the organizational and financial problems of e-learning and their solving methods.

1. Introduction

The constitutions of most European countries emphasize the right of all their citizens to learning and good professional training. This right also is declared both in European Union’s Charter of Fundamental Rights, 2000 and in other EU documents [1, 2, 3, 4]. The main problem in the implementation of this right is the need of continuous upgrading of knowledge. Therefore, Memorandum on Lifelong Learning is announced in the EU, where learning, e-learning and information communication technologies (ICT) are recognized as the main tools of such learning.

Active implementation of e-learning in higher education, vocational training systems has to be a key part of both, development of Lithuanian educational system, and adaptation of all the economy to the needs of knowledge economy and information society [5, 6, 7]. Therefore, the development of LieDM network will help to reach general strategic objectives of Lithuanian development – to provide the equal possibilities for all the citizens to use and to develop their abilities, to get a good education which satisfies needs of society and to get the job which fits to such education.

The problem. In order to ensure quality of lifelong learning and services of labour market, accessibility of education and vocational training services to all Lithuanian citizens, to modernize learning environment and to improve the infrastructure of educational system, it is necessary to increase the ICT possibilities in the areas of education, vocational training, science and higher education.

The objectives and methods. To overview the implementation of e-learning in Lithuanian vocational training system, to find out the main problems of this implementation and to suggest their solving methods.

2. Relation between employment level and education

The demand of higher education and vocational training is always closely related with employment situation and unemployment level. Restructuring of economic, privatization processes and economic depression during the first year of independence of Lithuania caused high unemployment rate, especially among young people. For instance, in 2001 general and youth unemployment rates were highest among Baltic States and amounted respectively 16.5 % and 30.9 %. While in the EU these rates were two times less and amounted respectively 7.4% and 14.9%. According to the data of Department of Statistics to the Government of the Republic of Lithuania (Table 1), people with lower qualification constitute the major part of the unemployed. About 4/5 of the registered on the labour exchange unemployed are unqualified or their qualification does not suit the demand of current labour market. About half of the registered young unemployed are unqualified. It indicates a very important social problem, because in most of well-developed
countries the demand on unqualified work is fewer than 20% and has tendency towards reduction.


<table>
<thead>
<tr>
<th>Education level</th>
<th>Total, %</th>
<th>ER, %</th>
<th>UR, %</th>
<th>AR, %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LT EU LT EU LT EU LT EU</td>
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<tr>
<td>High skilled</td>
<td>32.3 18.9 72.7 82.6 10.6 4.5 81.3 86.7</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Medium skilled</td>
<td>30.9 42.6 55.9 70.2 21.9 7.2 71.6 75.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low skilled</td>
<td>35.8 38.5 20.8 49.0 22.6 10.8 27.3 55.0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 Tertiary education completed; 2 Upper secondary completed; 3 Less than upper secondary completed.

Particularly high unemployment level is among young people of age 15-19. It reaches 31% despite the fact that 85% of them studied in general secondary schools (Source: Key indicators on VET: Central and Eastern Europe. 2002). Key factors that determine such high unemployment level are:

- After leaving general secondary schools and without vocational skills and enrolment to higher schools, young people become the unemployed;
- In Lithuania a high percentage of wastage exists in general education period. Frequently education system is left before acquiring basic school education. For instance pupils who have acquired basic school education as compared to number of young people of age15 amounted only 80% in 1992, and 73,7% in 2000.

The integration possibilities for this not inconsiderable part of young people into labour market are rather limited. Long-term unemployed people accounted 46% of all the unemployed in 2000. While this rate in the EU reached 31,9% and has tendency towards reduction. The increase of youth unemployment indicates very important social problems. Differentiation of society and insufficient financing of education are one of the reasons of such situation. Active implementation of e-learning technologies using ICT in higher education and vocational training stages would contribute to the problem solving. This would create better conditions to choose appropriate learning programs and to use services of education institutions not only for youth but also for everyone who needs re-qualification or qualification upgrading.

The competition and the requirements for qualification of employees are increasing; a lot of specialists with higher qualification are leaving for other EU countries. According to the forecast of Department of Statistics to the Government of the Republic of Lithuania, about 150 000 specialists with higher qualification will leave Lithuania during next 2-3 years.

3. Tendencies in Lithuanian Education System

Education is a main tool for development of “human resources”, competitive ability of the country, employment and social stability. It should be open and high quality and oriented towards developing and upgrading of human abilities.

According to the last data of the EU Statistical Office “Eurostat”, Lithuania is in the EU top five by number of educated citizens. In 2002 in Lithuania 85% of citizens of age 25-64 had not lower than secondary education. In 2002 in Lithuania 85% of citizens of age 25-64 had not lower than secondary education. Lithuania was the fifth among European countries by this rate (the average in EU is 65%).

Despite of high percentage of wastage in general education period, the tendency is towards increasing the number of Lithuanian youth which are studying. In the last year 82% of young people of age 7-24 were studying and every third young people of age 19-24 tired for higher education. In the last autumn 69% of secondary-school graduates became students of colleges and universities. Currently there are 19 universities and 24 colleges with 119500 students put together (in full-time and part-time studies) (Table 2). It accounted 15% of total number of learners (810.4 thousands of young people). In the EU more than 12 millions students are studying in higher schools. It amounts 15% of total number of students and pupils of in education system. In the EU and EFTA/EEA public higher schools, the high percent in comparison with total number of learners is in Greece, Spain (18%), Finland (19%), Italy and Norway (17%). In new EU members this rate is 10 % on the average.

Tab. 2. Number of educational institutions and their learners.

<table>
<thead>
<tr>
<th></th>
<th>Number of institutions</th>
<th>Number of full-time students</th>
<th>Number of evening and part-time students</th>
<th>Total number of students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universities</td>
<td>19 (4 of them are private)</td>
<td>77800</td>
<td>41700</td>
<td>119500</td>
</tr>
<tr>
<td>Colleges</td>
<td>24 (9 of them are private)</td>
<td>13672</td>
<td>12538</td>
<td>26210</td>
</tr>
</tbody>
</table>
In Lithuania professional education is provided and improved in professional training institutions (professional training schools, professional training centres, courses and specialized professional training institutions) and enterprises as well as in colleges. Vocational training is also related with general education. Pupils with basic and general secondary school education are enrolled in vocational training schools. The professional training is regulated by the law of vocational training of the Republic of Lithuania. Vocational training schools provide not only professional qualification, but also general education. In the school year 2004/05 in Lithuania there were 86 vocational training schools with more than 44000 students and that amounted about 6% of total number of learners. Recently there is a tendency towards reduction of number of students in vocational training schools. Firstly, it is caused by demographical problems of the country. Secondly, the vocational training and schools of the state are being reorganized and some of the schools are eliminated or unified and colleges are being created on their basis. And finally, more learners are self-motivated to relate their future and future career with higher education.

According to the data of Department of Statistics to the Government of the Republic of Lithuania, very few adults are studying. In the last year the rate of adults participating in various courses and seminars amounted only 4.5% and was lower not only than the average in European countries, but also than in neighbouring countries such as Latvia (8.1%) and Estonia (9.6%). It is caused by a lot of material, juridical aspects and the capacities of educational system itself:

- Professional training is not enough open for everybody who wants and is able to study, especially in the rural regions and for peoples with low finances;
- The capacities of educational system: there are not enough human and financial resources in order to ensure the high quality lifelong learning and to respond structural changes of economy;
- Adequacy of higher education, vocational training and needs of economy is insufficient;
- Legal basis practically does not regulate and motivate the training of working people.

5. Supply of vocational schools with computers and software

As it was mentioned above, 44260 pupils study in 87 vocational schools (Table 3). Total number of computers is 3452 (Table 3). So, the ratio is: approximately 1 computer for 13 pupils. Almost the same proportion is in 9-12 forms at schools and gymnasiums. Unfortunately this proportion fulfills the needs only of these specialties where only general competencies of computer literacy are needed.

<table>
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<tr>
<th>Number of schools</th>
<th>87</th>
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<tbody>
<tr>
<td>Number of pupils</td>
<td>44260</td>
</tr>
<tr>
<td>Number of computers</td>
<td>3452</td>
</tr>
<tr>
<td>Proportion of pupils and computers</td>
<td>12.82</td>
</tr>
</tbody>
</table>

In system of vocational training most of computers do not have insufficient technical characteristics (see Table 4): 52% of all computers have 300 MHz or better processors, all schools have access to Internet, but only 33% of them have high-speed Internet access.

| Number of computers with less than 300 MHz processors | 1655 |
| Number of computers with 300MHz or better processors | 1797 |
| Number of computers with local area connection | 2747 |
| Number of computers with Internet connection | 2656 |
| Number of computers with high-speed internet access | 1153 |
| Number of schools with Internet access | 87 |
| Number of schools with high-speed internet access | 50 |

Expenditure on learning programs accounts for about 8% of total expenditure on ICT implementation at vocational schools. Such small percent is justifiable only at the initial stage of ICT implementation when the main objective is to develop the basics of computer literacy.

6. Professional competence of e-learning specialists and its upgrading

Usually, 2-3 specialists work in one distance education classroom of vocational training school. The functions of these employees usually are administration and technical maintenance of Classrooms. Therefore, there are no human and financial resources for designing e-learning courses, projects and organizing learning seminars. That is the reason of such a low number of e-learning courses prepared in vocational training system. Experience of west countries shows, that from 10 to 15 various IT specialists (OS, databases, programmers, web-designers) work in one course designing group. Also action groups of managers are involved.

It is important to note that most of e-learning specialists have higher education. Specialists of information technologies (educators and engineers of informatics) and retrained specialists of other subjects (physics, mathematics, engineers and etc) teach e-learning technologies.

Because of the rapid development of e-learning technologies, the specialists of this field have to upgrade their knowledge each 4-5 year. Special attention should be drawn to learning seminars and courses for lectures and teachers of various subjects. They should be introduced how to use e-learning technologies in learning process, how to manage virtual learning environments and modeling programs. LieDM network organizes such training from 2001.

Budget for the upgrading teachers’ qualification accounts 4-7% of total budget for ICT implementation in education. While in the USA, the EU it varies from 20 to 40% of total budget [4]. In Greece this percent reaches 60%. In the context of the budget for the development of human recourses Lithuania together with Bulgaria and Cyprus goes in the last place. According to the experience of developed countries it could be stated that the budget for upgrading qualification of teachers have to account 30% of total budget for ICT implementation in education.

7. Financing

In all European countries the vocational training programs are financed from the state budget and private capital. However, ICT implementation always has a priority. In Lithuania the systematic ICT implementation began in 1986. The long-term strategy for such implementation is described in the Strategy for ICT Implementation in Lithuanian Education documented in the year 2000, and the detailed plan of implementation of defined goals in comprehensive schools is described in the Programme of ICT Implementation in Educational System prepared in the year 2002 [6]. The documents of the programme shows that expenditure on hardware and Internet equipment accounts for 69% of total expenditure, on systemic and general purpose software 17% and remaining 14% on development of ICT competencies and upgrading qualification and other questions.

According to that programme for purchasing hardware and software state budget gives only about 30% of required funding. Remaining funding have to come from private sector, European funds and other programmes (PHARE, SOCRATES, LEONARDO DA VINCI and etc.)

Business and industry organizations usually give direct support for particular initiatives of schools in their regions: used computers, other equipment and funding for one purchasing are given to schools. But such support is episodic, because contemporary tax system doesn’t motivate enterprisers to participate in vocational training.

8. Conclusions

1. Solving the problem of unemployment, it is necessary to use the experience of the EU in development of formal, non-formal, continuing, vocational training, lifelong learning and implementation of modern e-learning technologies in education.

2. Education ensures development of knowledge society and knowledge-based economy. Therefore, it is necessary to develop open and flexible e-learning system that ensures lifelong learning.

3. Not only computer literacy courses but also courses of e-learning technologies practical usage in the teaching process there should be organized for all teachers of system of vocational training. In order to ensure high quality services in Lithuanian vocational training system it is necessary to considerably increase financing for development of human resources in this field.

4. In order to ensure equal development of all regions of Lithuania, it is necessary to develop the e-learning network of vocational schools. The
representatives of local government should find a funding for establishing e-learning classrooms.

5. In order to expand a learning market, closer collaboration with representatives of business and industry in delivering continuous vocational training programs is necessary.

9. References


