Collaboration Technology for Education of the Young People with Special Needs

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Abstract

The paper is devoted to the problem of the inclusion of young people with special needs in education, society and wherewith improvement of their level of life. The educational opportunity currently offered to the young people with special needs in the Republic of Latvia has been analyzed. The feasibility of the implementation of Web-technology to educational events as well as the experience of Riga Technical University in e-learning have been examined. Finally, the requirements for e-environment that could provide learning and communication of the people with special needs have been defined. The European Social Fund in Latvia is co-financing the project.

Keywords

Collaboration, eLearning, feedback, disables

1. Introduction

In the basic programming document of European Union Structural Funds for Latvia for period of 2004-2006 [1] is stressed that one of the potential social exclusion group of risk is the young people with special needs, including disabled youth. For these young people is necessary exclusive support for integration into educational system, to become well-educated and to develop both social and labor skills and proficiency for the further incorporation into society.

According to the Programme Complement [2] and the guideline developed by European Social Fund, the Riga Technical University (RTU) has been implementing the project which objectives are:
- to study the opportunity for the young people with special needs to get educational background in the existing educational institutions of Latvian Republic;
- on the based of nowadays information technology to develop measures which make easy for the young people with special needs to integrate to all-round education and society.

RTU already has the certain experience of lifelong educational program for the teachers of Informatics implemented on Internet [3]. This expertise has to be further developed and customized for the education of the young people with special needs within the project "Information technologies for the integration of the young people with special needs to the education and society". This project is fulfilled with the support of European Social Fund in Latvia.

2. Possible forms of education

There are several forms of education for young people with special needs in the Republic of Latvia. These forms of education basically envisage:

- fulltime studies at all-round educational institutions;
- fulltime studies at dedicated educational institutions;
- correspondence education and distance education, including life-long.

2.1. Correspondence education

In the case of correspondence and distance education the student receives the studying materials directly, via mail or e-mail. Both correspondence and distance education events with tutorials in the cities are poorly applicable for the young people with special needs, because their lifestyles usually doesn't intend frequent turn-outs. In this situation the young people with special needs in Latvia often are not motivated enough to participate in educational events and get the education which would comply with their feasibilities and health conditions.

2.2. E-learning courses

One more essential disadvantage of the existing distance and especially e-learning courses is their methodical features. The distance learning courses are being often developed by highly qualified experts in the particular area, who don't have appropriate pedagogical experience. Wherewith e-lectures are often too compressed and describe only a small part of the necessary material. This is the reason of the e-lectures being short, during which some specific problems can be considered, but the systematic education (as at full time studies) can't be provided.

It is very difficult to provide an appropriate fluency of the material during the e-courses (compared to full time lectures), as well as the level of detailed elaboration of the examples considered. It means that it is impossible to organize the feedback process between the student and the lecturer, which in fact has the biggest impact on the lecturer's activities.

2.3. Disadvantages of the existing opportunities

The analysis of the existing forms of education in the Republic of Latvia allows concluding that:
- the existing full time education all in all is appropriate for the young people with special needs;
- correspondence education for the young people with special needs often doesn't provide necessary tutorials and the possibilities of communication with the society;
- offered e-learning courses often are "methodically incomplete" and can't provide the necessary quality of education.

People with special needs often face the necessity to study further long after they have finished the school (e.g., after an accidental disability a person needs to change his/her occupation). At the present moment people with special needs are offered to attend training courses which are usually organized in the same premises where the further courses will be held. The participation in these courses becomes very problematic due to transportation difficulties.

3. Environment

3.1. Comprehensive objective

It is necessary to develop a specific system for the preparation of the young people with special needs for further studies. The system has to provide the teaching of the young people with special needs also at their places of living, moreover, it has to "imitate" as much as possible face-to-face teaching.

The problem which doesn't allow the young people with special needs to fully integrate into the society (because of their lifestyle) is the difficulties of communication between themselves and with the other people. For instance, it is very difficult to explain on the phone

solution of the technical problem, while a piece of graphical information would be of great help.

3.2. RTU experience

RTU has an experience in e-learning which is close to face-to-face teaching. An e-learning program for the teachers of Informatics "E-course in the practical use of the computers for teaching of programming and mastering the application programs" has been developed and implemented, as well as approved by the Ministry of Education and Science of the Republic of Latvia [3].

The implementation of this program intends that the trainees meet the trainer directly only during the introductory lecture and the final assessment, but all the other communication happens with the help of the Internet. Despite this the organization of the training intends that the trainees will partly fulfill the assignments in the particular time when they will be given the possibility to ask the trainer questions, as well as send him/her the practical assignments completed etc. In this way the e-course is similar to face-to-face teaching.

The course was highly appreciated by trainees [4]; however, its methodic isn't completely appropriate for a wider audience. On the one hand, it was developed for highly qualified IT specialists, but on the other hand – for teachers – i.e. for people who constantly work with large audiences and have no problems with communication.

This course has to be seriously readjusted in order to satisfy the needs of a wider audience, especially for the people with special needs [5].

3.3. Properties of the environment

Therefore new teaching methodology is necessary, as well as corresponding training of teaching staff, development and implementation of teaching materials, application of new communication forms.

All of these should enable the young people with special needs make themselves ready for study and allow to obtain education relevant to their state of health, abilities and level of advancement. This in turn ensures their further integration into society.

3.4. Feedback "trainer – trainee"

One of the essential problems is development of e-learning methodology that ensure as possible the feedback "trainee – trainer" [6]. In the case of e-learning links between lecturer and trainee in classical meaning do not exist at all. Therefore is necessary to provide tools for students to ask questions after lecture, to discuss issues between themselves as well as other tools allowing substituting classical links "trainee – trainer" and "trainee – other trainees" with new collaboration and mutual interactions "devices".

Taking into account the lifestyle of the young people with special needs it is necessary to provide in e-learning environment special tools for Web-intercommunications between the participants of the training process. These tools have to be as simple and convenient as possible so that offhand users could apply them. At the same time these tools have to be powerful enough so that the users could make sense of their usefulness and efficiency. These tools cannot replace direct contacts between people and even cannot serve as e-conference implementation tools, but they must be simple, do not require significant computer resources and must get ready the users for the mastering of up-to-date tools.

3.5. Specific target

Our objective is the creation of e-environment and its further application to education and communications between people. The e-environment should facilitate the feasibility to the young people

with special needs to integrate into the all-round education and society.

The effect will be achieved by ability of the young people with special needs to accomplish part of educational materials outside classes in the most convenient to them time and quickness as well as in certain cases to minimize unwanted movement keeping at the same time the link "trainee – trainer" appropriate to face-to-face contacts.

The other property of e-environment is ability of communication that allows carrying out collaboration between many peoples virtually without physical contacts.

4. Requirements to the environment

The effective solution of described above issues is an integrated approach that includes application of nowadays IT tools as well as appropriate teaching staff. Consolidation of two mentioned above will form actually the e-environment for teaching and communication. This environment as much as possible is drawn nearer to intramural teaching, and allow to the students to study both in the classroom and away from the lectures-room.

To implement such a teaching is necessary to form specific e-environment which includes the management system that should provide:
- tools for the teaching staff for the creation of learning materials in computerized form (video plus sound);
- tools for the teaching staff for the deployment of learning materials in the e-environment;
- tools for delivery and "playing" the teaching materials that means ability for trainees being away from the classroom "to participate" in the lesson that is beforehand prepared, recorded and placed into the e-environment;
- tools for trainees to prepare questions, comments and other materials in computerized form (video and sound) – tools similar to creation of teaching materials, but simplified;

- tools for trainees to place in e-environment questions, comments, homeworks and other materials;
- tools for the teaching staff to receive via e-environment mentioned above questions, comments, homework etc;
- tools for the teaching staff for "playing" the materials received from trainees and for preparation of responds on them – answers, evaluation of fulfilled tasks etc;
- different access rights to the data to separate several courses, discussion groups, conversations "employer – employee" etc.

By this means e-environment provides for the process of e-learning the characteristic features of full-time education and as by-product serves as low-price communication facility.

5. Team created

To achieve the declared objective the following team have been build up:
- teaching staff of Riga Technical University whose are experts in Information Technology and education including distance e-learning;
- teaching staff of government agency "Social Integration Center" whose have practical working experience and particular knowledge in the teaching of the young people with special needs;
- representatives from "The Latvian Umbrella body for Disability organizations SUSTENTO" whose best of all know needs of the young people with special needs and their disposition in the state.

6. Foreseen consequences

The created e-environment (technical provision together with ready teaching staff) will ensure for the people with special needs the ability of lifelong education.

The communication facilities of e-environment will become an integral part of the lifestyle for the people with special

needs and will serve as intermedia to society including employers and thus will bring new labor opportunity to the people with special needs in the country, first of all in Latvian outlying areas.

The created e-environment will be the convenient and low-cost tool for inservice training courses also for other inhabitants as it gives an ability for trainees to study at their living places and in the most appropriate time without loosing of "the spirit of auditorium" natural for full-time lessons.

As Information Technologies will evolve the cost of e-learning will decrease and if the legislation of the Republic of Latvia will permit to use e-learning also in all-round educational system simultaneously with conventional academic education then the demand of the service of e-environment will grow. There is no reason to consider that any other approach could compete with the learning in e-environment providing to audience the similar comfort and quality of teaching.

The proposed methodology provides not only ability of learning but also potentialities of low-cost e-communications. These inexpensive multilateral communications without any doubts is very convenient solution also for the regional administration that provides the support for the work of local offices. As the created e-environment brings new facilities for the multi-user interactive communications, the local authorities will be concerned in this medium and thus also in e-environment maintenance and dissemination.

By this medium we hope that proposed approach for the inclusion of the young people with special needs to education will contribute also to the distribution of Web-technology within the whole country.

References

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