2nd World Conference on Educational Technology Researches – WCETR2012

A combination of distance, modular and credit learning technologies in the training of specialists at the technical universities

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Abstract

The paper substantiates the possibility and necessity of a combination of distance, modular and credit technologies in the training of students in technical universities, offer a model system of mixed education of students of technical high school, providing for the use of distance learning technologies and unit training in terms of the principle of a credit system for training students in technical schools, the orientation of the content learning to real professional tasks, interactive learning tools of information, a combination of individual, collective, real and virtual forms of learning, approaches to the proposed development and use of information learning, acting as a basis for the methodology of remote sensing technology in the credit system teaching students the technical specialties universities, teaching conducted an experiment that demonstrated the effectiveness of the proposed method of blended learning and information systems of training students in technical high school.

Keywords: Blended learning, Combination of learning, Training of specialists;

Introduction

In many countries introduction of system of electronic training in educational practice led recently to even bigger updating not only means and methods of electronic training (e-learning), but also theoretical methodological bases, development of methodical system of such training.

In our country the State program of a development of education for 2011-2020 of the Republic of Kazakhstan (RK) determines by one of priorities introduction of system of the electronic training providing equal access by the pupil, to teachers to the best educational resources and technologies, automation of educational process for education and management efficiency improvement of quality.

As the Minister of Education and Science of RK B.T.Zhumagulov noted: «To create such system, we should create absolutely new legal base, methodology, the personnel and technical providing, the massed digital content» [1]. In particular, it is supposed that by 2012 additions will be made to the State general educational
standards of education (SE) of secondary education regarding obligatory use of system of electronic training, in SE of the higher, technical and professional education regarding preparation of pedagogical shots for work in system of electronic training.

Let's notice that the system of electronic training is one of the main possible ways of realization of information of education, and education information as separate actual and perspective scientific and pedagogical area (meaning methods, technologies and means of the uniform and integrated information of the educational, control and measuring, research, extracurricular and organizational and administrative activities peculiar to all levels of an education system) can become, somewhat, a fundamental methodological basis of system of electronic training [2-4].

Now all Kazakhstan higher education institutions, as well as other educational institutions of different level, are anyway connected with electronic training. "Wikipedia" treats e-learning (reduced from English Electronic Learning) as system of electronic training and a synonym of such terms, as electronic training, distance learning, training with use of computers, network training, virtual training, training by means of information, electronic technologies. There is a definition which specialists of UNESCO gave: «e-Learning — training with the help the Internet and multimedia».

Therefore, it is possible to consider safely that everywhere where there are networks where there is network training and the Internet is already elements of electronic training. Another matter – that means "anyway" and how they are connected. Not the secret that in some educational institutions has use of e-learning sometimes especially formal means, and electronic training is treated substantially as a rigid necessity of following to certain installations from above, say, on the state accreditation or by recognition of educational institution innovative, or for any other tactical reasons.

For above specified reasons there are enough bases to address to a question of inevitability and, therefore, correctness of expansion of electronic training occurring now (e-learning) as educational practice shows, the need for this argument still remains system of electronic training actual, especially, in the conditions of introduction in our country.

In the conditions of transition to information society and implementation of information of education inevitable introduction e-learning is promoted by more and more obvious contradictions which are available in our education systems (different levels) and which can't be overcome effectively without introduction e-learning. Let's consider most obvious of them [5]:

1. Contradictions of social and economic and social and pedagogical character:
   – between the increasing cost of preparation of competent experts, and on the other hand – a low cost and the low efficiency of traditional mass training which is potentially conceding to training with application of high-grade electronic technologies;
   – between need of ensuring availability and difficulty of access for some category being trained for which access to traditional education – either owing to remoteness, or for other reasons is complicated, i.e. availability obstacles;
   – between need of ensuring the academic mobility of trainees and almost impossibility of this providing (becomes business almost inconceivable) in the conditions of usual organizational and educational and methodical support of educational space even a choice and "pilotage" in a large quantity of educational services offered by the market without electronic technologies of management of training, i.e. obstacles of the academic mobility;
   – between need of providing an individualization of training and impossibility it always in full to provide in traditional group (or cool and fixed) system of traditional (mass) training. Other business – possibilities of the interactive educational content allowing and offering to the trainee of a task taking into account speed of its advance and other its personal characteristics, i.e. difficulties in providing an individualization of training.

2. Contradictions of organizational and methodical character:
   – between (an eternal problem) activization of informative activity, independent educational activity of trainee (imulation) and not efficiency of support of self-training by traditional methods. (It is necessary to recognize, at last, that self-training by traditional methods effectively isn't supported!);
   – between rapid growth of volume of new knowledge, comparable with «information explosion» and traditional orientation of educational programs to list structure of paper sources, instead of to free search of resources on the Internet. (Here it is free or the question of a condition and change of a role of libraries of
educational institutions – a shrine of traditional higher and secondary vocational education is involuntarily mentioned. Not casually that new standard requirements to similar libraries force a certain percent of information resource to show in electronic form that gives the chance to address to these resources remotely;

– between obvious obsolescence of traditional methods of study, in particular, lectures and that in new conditions assembly meetings with students gets rather a form of the consultations accompanying independent work on attraction and the analysis of theoretical sources (Some teachers quite often by inertia continues to revel in the lectures, and also resolute revision of many developed high school forms of certification and control – final qualifying works is necessary, "course" and so forth – their students without effort take on the Internet. Today no more than a regret the picture when the meticulous teacher starts to get a grasp of accurately issued text of the paper student's creation transferred to it can cause, without suspecting because of the IKT-bezgramotnosti that all this is absolutely free of charge offered on obliging student's sites);

– between need of carrying out continuous monitoring of the current achievements of trainees and impossibility of providing in full without use of electronic control systems by training of the specified monitoring, and from here – lack of a basis for self-motivation of independent work of trainees;

– between development of new technologies of training and impossibility to carry out though a little effective decisions at introduction of innovations in modern education without e-learning, without the Internet and uses of control systems by training, i.e. restrictions for development of new technologies of training.

The specified contradictions (and their list can be grown stout) practically to the same extent belong to different education levels – vocational school, comprehensive school, system of additional education, etc., and all together – confirms inevitability of carrying out processes of information of education in favor of introduction of electronic training.

3. Additional arguments which follow from the modern directions of modernization of the general and professional education, introductions of a requires approach which, in particular, demands reorientation of technologies of training to independent research work, developments of creative qualities in trainees that, in turn, demands innovative methodological reorganization of system of an assessment of quality of the acquired knowledge, skills and abilities.

This inevitability follows as well from modern requirements to the educational process, new SE caused by introduction, and at the higher school – also systems of test units (credits) and modular and rating system of training as anything from told it can not be realized practically without use of electronic control systems by training.

At the same time a state of affairs on introduction of electronic training in educational institutions of different level unequally – one left further and are occupied with the solution of major problems, others only start this work, but in most cases educational process goes generally according to the traditional scheme of training, and e-learning means new technologies and new forms of education.

Many wrongly consider that to make as they call it «electronic training» - to develop powerful program system in which it would be possible to impose, edit, show to teachers and pupils training materials, dispatch training enough, to consider being trained, to ask them questions, to put down marks, to consider them, etc. So it is simplest to operate – it is not necessary to think of the maintenance of these Wednesdays – enough them to develop, shout about their possibilities and people will buy them. But when the teacher will be hit such system in hands, it will face a problem that at it isn't present in the necessary type of the necessary materials and as a whole it has nothing this system to fill. And even if it will fill it with something the, new and useful he won't receive anything and will return to the usual teaching. The matter is that as a whole usual materials for usual training don't suit training with application of these systems. There should be a special technique of training that to the person who is sitting in front of the computer, it was interesting that it didn't leave on other site, etc. When internally – before it the teacher and he listens, anywhere won't get to. And when with the computer – can distract. Special approaches on introduction of system of electronic training are necessary.

In our opinion, it is necessary to integrate smoothly these new elements e-learning into system existing in our educational institutions, destroying nothing. It will allow not only to achieve the necessary results of training, but also to provide compliances of a skill level of shots of educational institutions to modern and perspective requirements. From all versions of e-learning in this regard the special role is got by the so-called mixed training (blended learning) in which network training is combined with resident or independent instruction and has for modern development as education systems as a whole, and local educational process special importance and
prospects. There are bases to believe that that time when any study will naturally combine work in the real and virtual world is close.

It is important to note that the mixed training is a training in which different types of training events, including traditional resident instruction are integrated into audiences, electronic training and self-training. I.e. this training combining traditional auditory training with self-training with continued support of the tutor. Mixed training raises an urgency and value of e-learning as effective modern technology not only for distance learning in the standard sense, but also for other forms and types of studies.

It is obvious that preparation of high quality experts in technical colleges is impossible without use of the advanced pedagogical approaches one of which is the distance learning which is carried out on the basis of the latest means of information of education. Shortcomings of distance learning are shown in absence of internal communication of the teacher and students that affects insufficiency of educational influence. Besides, at such approach lack of the created initial skills of students for work in system of distance learning is available shortcomings of development of motivation and self-discipline at the students necessary at distance learning, and also. Carrying out the training of specialists within remote courses probably far not on all specialties and the directions. There are also other essential shortcomings characterizing remote technologies, applied in training of students of higher education institutions. One of solutions of problems, characteristic for introduction of distance learning use of the mixed (combined) training is. The concept of the combined training assumes that in modern conditions the student should have all possibilities provided both by classical training, and application of remote technologies of training. Implementation of the concept of the mixed training creates conditions for the solution of the main problem of the traditional training consisting in limitation of possibilities for realization and development of potential abilities of each trainee. The mixed model of training is a model of use of the distributed information and educational resources in resident instruction with application of elements of asynchronous and synchronous distance learning. Thus, unlike usual distance learning the mixed training allows to receive both knowledge, and personal contact as the mixed training gives the chance active communication with colleagues, other listeners of a course and teachers.

Quality of preparation of the graduate of technical college in many respects is defined by features of the educational and information environment of concrete educational institution, adequacy of its contents to requirements of the State educational standards. The present stage of reforming of a republican education system is characterized by formation of multilevel system of the higher technical education. Essential aspect of reforming is transition to use of credit technologies in preparation of students. It is known that the main features of introduction of credit technologies in educational process of any higher education institution is strengthening of an individualization of training, the academic mobility of the students, assuming in turn, active independent work of students. Introduction of credit technologies of training together with technologies of distance learning, characteristic for modern technical education in the republic, need of development of technological abilities of the identity of students, need for ensuring effective education cause formation of multilevel university education and creation of preconditions for self-training during all life. It involves change of the contents, forms and methods of training of students, in particular, changes of the contents, forms and methods of preparation of bachelors and masters of a technical profile, features of credit technologies of training. In the report possibility and need of a combination of remote, modular and credit technologies within training of students locate in technical college; the model of system of the mixed training of students of the technical college, providing use of technologies of distance learning and a modular principle of training in the conditions of credit system of preparation of students of technical colleges is offered, to orientation of the content of training to real professional tasks, interactivities of means of information of training, a combination of individual, collective, real and virtual forms of education; approaches to development and use of means of information of the training, representing itself as a basis of methodology of use of remote technologies in the conditions of credit system of training of students of technical specialties of higher education institutions are offered; pedagogical experiment which showed efficiency of the offered technique of the mixed training and information of system of preparation of students in technical college [6,7] is made.

Let’s note that at the same time today very few scientific researches on introduction of E-learning concerning, first of all methodical, ergonomic and other problems, content creation, its quality, questions of providing an interactive mode of training, search of further effective combinations of e-learning with traditional bases of academic resident instruction, activation of independent work of trainees (the mixed forms), techniques of
control and an assessment of knowledge of trainees, disclosures of innovative potential of school and university students etc. Thus it is necessary to reveal not only positive, but also negative sides of introduction of electronic training in the course of education information because process of its introduction and wide use on the various directions and education levels is inevitable.

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