

EEIA-2017
2017 International conference
"Education Environment for the Information Age"

**ELECTRONIC EDUCATION: PROBLEMS AND PROSPECTS OF
IMPLEMENTATION**

Nikolay D. Morozkin (a), Veronika A. Kovshechnikova (b), Ilmira Z. Tovysheva (c), Yulai A. Yanbaev (d), Oksana N. Yuldasheva (e)*

*Corresponding author

- (a) Federal State Budget Educational Institution of Higher Education "Bashkir State University", 450076, Ufa, Russia, rector@bsunet.ru,
- (b) Federal State Budget Educational Institution of Higher Education "Bashkir State University", 450076, Ufa, Russia, iubp_do@mail.ru
- (c) Federal State Budget Educational Institution of Higher Education "Bashkir State University", 450076, Ufa, Russia, telvira07@mail.ru,
- (d) Federal State Budget Educational Institution of Higher Education "Bashkir State University", 450076, Ufa, Russia, Yanbaev_UA@mail.ru,
- (e) Federal State Budget Educational Institution of Higher Education "Bashkir State University", 450076, Ufa, Russia, 2tov_@mail.ru*.

Abstract

The article reveals the content of the conceptual model for the organization and training of the teaching staff of educational institutions in the Republic of Bashkortostan. This model is understood as a technology, which implies training in the form of e-learning in the following roles: tutor, organizer, student, teacher. Such way of professional development takes into account the use of innovative educational technology along with the national and regional trends in education and best practices, in particular, the transition to the principles of the continuity of education and reformatting this sphere as an integral part of the information society. The basis for the research includes the consideration of the problems for design and application of information and educational environment. Practical experience of realization of the represented model is shown as well as the analysis of statistic data, collected in the educational institutions of the Republic, demonstrating positive progress for its application in the Republic of Bashkortostan.

© 2017 Published by Future Academy www.FutureAcademy.org.UK

Keywords: Information, innovation, e-learning, distance educational technologies, information-telecommunication network.



1. Introduction

Implementation of electronic and traditional education is a condition for the transition to a new paradigm for creating a mobile educational space for people throughout life and for the formation of the personality of a new generation with global thinking and readiness for remote professional interaction. World experience in the development of electronic educational resources (EER) convinces that E-Learning (EL) is successful as much as it is included in the well-thought out general functional-content, didactic and organizational concept of the development of the country's education system as a whole (Aggarwal, 2010), (Cytermann, 2006), (Mugridge & Kaufman, 1986), (Kangai & Mapolisa, 2008).

However, researchers from different countries express concern about the fact that the expectations of the E-Learning have not been fully justified, since it was mostly developed by technical specialists and not by pedagogues (Aggarwal, 1994), David-Evans, 2004). Therefore, the main focus was on the development of infrastructure and technology, whereas methodological approaches to the development of content and methods of EL were not taken into account. In this regard it is necessary to pay attention to improving the professional competencies of teaching staff, to their education before they start teaching as well as to the organization of effective functioning of the system of professional development of the teaching staff of educational institutions in the application of EL (Gromova, 2006), (Nickulicheva, 2016).

The basis and initial data for the development of the issue under consideration include the problems of design and application of information and educational environment, which, as a scientific and theoretical problem, began to be considered just over 10 years ago (Polat, Bucharkina, 2010), (Sabitova, 2011). Since the development of the educational potential of information and computer technologies is at the crossroads of several areas of knowledge, it is possible to single out two aspects of research, namely pedagogical and program and technological. Despite the positive results achieved in the integration of EL, there are still a number of problems, nowadays:

- high level of information inequality due to different opportunities for EL information access caused by geographical, age, social and other factors;
- insufficient normative and methodological support in the field of;
- almost complete lack of work to ensure coherence between the information and software products used and introduced into the education system, and along with natural resistance to the changes mentioned above the problem of EL implementation is more difficult to solve;
- uncontrolled participation of children and adolescents in social networks, which entails a low level of information culture of students and the risk of decreasing the education and upbringing quality due to the use of unverified and uncertified sources of information without state expert recommendations;
- lack of clearly defined expected results of e-learning use and measurable indicators of their achievement;
- insufficient administrative and methodological support of projects on the introduction of e-learning in the republic;
- the backlog of teaching staff from students in terms of using information and communication technologies (ICT);
- insufficient level of readiness of pedagogical staff for work in information environments.

Thus, the novelty of the issue lies in the fact that the solution of the above problems will promote of implementing the Concept of the Development of Electronic Education in the Republic of Bashkortostan.

E-Learning (hereinafter EL) is a relatively new term in Russian legislation. It was introduced by the Federal Law of the Russian Federation "On Education" on December 29, 2012 No. 273-FL in the following wording: «E-learning is understood as the organization of educational activities by using information contained in databases and information used in the implementation of educational programs and providing its processing of information technologies, technical facilities, and information and telecommunications networks which provide the communication of these information via communication lines, the interaction of students and teachers» (Federal Law 2012, 2016).

The introduction of EE in an educational organization assumes a significant difference from the implementation of the educational process using traditional technology: compulsory use of databases and information and telecommunications networks. In fact, we are talking about the creation and use of an electronic information and educational environment in the learning process through which access is made to electronic educational resources, as well as the interaction with a pedagogue.

In contradistinction to e-learning, the use of distance learning technologies (hereinafter DLT) assumes the interaction of students and teachers. DLT is understood as educational technologies, implemented mainly with the use of information and telecommunications networks with indirect (at a distance) interaction of students and teachers (Federal Law, 2012, 2016).

The use of exclusively E-learning covers the situation when the student learns the material independently, without participation of pedagogical workers, by working and interacting in the electronic information and educational environment. An example of such training may be mastering of mass open online courses (hereinafter referred to as "MOOC"), in which the contact with the teaching staff of a particular student can be completely ruled out, but replenished by communicating with the community of students in the electronic information and educational environment.

Any transformations, reforms and innovations, if they claim successful implementation and real support in the sphere of education, in the opinion of Gershunskiy (1998), should begin with "a system ahead of these reforms and the innovation of teacher education, with the preparation of future teachers, and in particularly extreme and urgent situations - with the retraining of teachers already being in operation.

The study of pedagogical literature, existing regulations and specially conducted studies have made it possible to identify a number of significant shortcomings in the process of preparing the pedagogical staff of the university for activities in EE, DLT (Dodds, 1991, Dodds, Kinyanjui, 1996):

- non-systematic approach to the organization of training of pedagogical staff of higher education institutions for activities in the system of distance learning;
- insufficient use of modern achievements of science (philosophy, sociology, psychology, pedagogy) in substantiating the theoretical and methodological backgrounds for the design of the pedagogical system for the training of distance learning teachers;
- the qualification characteristic of the pedagogical worker of distance learning, which would become the "target-reader" of its training;

- forms, methods and means of training teachers at higher educational institutions do not correspond to the specifics of the trained contingent and to the features of distance learning technologies;
- in determining the content of the formation of the competence of a distance learning pedagogue, the main attention is usually paid to the formation of his professional competence, in contrast to its integration with social competence and professionally significant personal qualities (Gromova, 2007), (Sabitova, 2011), (Komisja Europejska, 2012), (Sielatycki, 2008) (David-Evans, 2004).

Elimination of these shortcomings is hindered by the contradictions existing in contemporary social and economic conditions:

- between the continuously growing needs for higher education of the population of the territories remote from the educational centers of the country and the lack of organizational and pedagogical conditions for meeting these needs;
- intensive development of information technologies (hardware and software), a significant potential of universities in technical support and lagging behind the corresponding pedagogical technologies;
- the necessity to increase the contingent of students in the university through the use of distance technologies in the educational process and the lack of experienced pedagogical workers who own these technologies;
- aspiration of the majority of pedagogical workers of high schools to master distance learning technologies and absence of a technique of their training for activity in the system of distance training;
- accumulated experience in the organization of distance learning in foreign and domestic educational institutions and the lack of results of the theoretical and methodological generalization of this experience for use in the training of distance learning teachers;
- the peculiarities of the requirements for the training of pedagogical staff of higher educational institutions for activities in the system of electronic and distance learning and the absence of criteria and indicators for determining their level of readiness for it.

In the works of Gromova (2006, 2007), the essence of the main functional components of the pedagogical activity of the pedagogical worker DL (the functions of designing the learning process, the support and development of students, the management, which, from the point of view of the person-oriented, contextual and activity approaches, are grouped into the following:

- organizational;
- informational;
- communicative;
- developing.

Soldatkin (Andreev, Soldatkin, 1999) believes the success of the tutor to depend on a number of conditions. Relying on the analysis of the specifics of the tutor' activity, the requirements imposed on him, the problems that a tutor may face, the author singled out three groups of conditions that ensure the successful operation of the tutor:

- pedagogical, which are connected with taking into account the psychological and pedagogical principles of the DL and the organization of the pedagogical process, the use of diverse and adequate teaching objectives at this stage of pedagogical methods (for example, encouraging participation, involving experts), providing interactivity throughout the entire learning process;
- organizational and communicative - in general terms they mean knowledge of the psychology of communication, good-order rules, ways to increase the motivation and involvement of students in the learning process, choosing the right style of leadership and education;
- technical, which include the providing of access to computer communications (both tutors and students), the "computer literacy" of the participants of the distance learning process.

Devterova (2011) considers the tutor as a pedagogical worker-counselor who carries out the teaching and methodological support of students during the educational in the distance learning process. A tutor provides the support of students in the DL through consulting, holding tutorials (where in the complex is conducted the solution of educational and professional tasks, the potential of the students is being solved), the organization of groups of mutual assistance, the provision of feedback, organizing / maintaining communication.

Andreev (2013) believes the tutor in the distance learning system to perform the following activities:

- to be able to organize an educational process based on information and communication technologies;
- to have the skills to conduct classes in an interactive form, using effective learning technologies;
- to be able to organize a scientific and methodological examination of educational resources;
- to have the skills to quickly meet the needs of teachers of educational, information, analytical, scientific, methodological and technological character.

In her study Andryanova (Khutorskoy, Andrianova, 2001) developed the technology of the organization of the creative activity of students in distance education, within the framework of which separate blocks of qualities and skills are identified as necessary for the teacher and coordinator of the distance educational activity: organizational, pedagogical, reflexive, analytical, projective, information, telecommunication, technical and practical, personal.

2. Research Questions

The survey of research activities of pedagogical workers when working in the EL system, DLT showed a large number of variations of formulations and approaches to describing the activities of a distance educator, in connection with which it is required to bring them to unity, because activities can be put at the basis for the development of qualification requirements for teaching the pedagogical composition of general education organizations of the Republic of Bashkortostan e-learning technology for the following roles: tutor, organizer, student, teacher, what is necessary to improve the quality of its training.

Thus, in the process of studying the theoretical foundations and methodology of the project, the hypothesis was formulated that the teaching of the pedagogical staff of general education organizations of

the Republic of Bashkortostan the technology of applying e-learning for the following roles: tutor, organizer, trainee, teacher requires the development of a conceptual model of the project. (Feskova, 2013).

3. Purpose of the Study

The purpose of the study is to substantiate the model of training of pedagogical staff and its prospects of a combined use of innovative technologies and existing best practices in the country's and regional trends in this sphere.

4. Research Methods

The conceptual model of organizing and conducting the training of pedagogical staff of general education organizations of the Republic of Bashkortostan is the technology of applying e-learning in the following roles: tutor, organizer, student, teacher is formed by taking into account the Russian and regional trends in the development of education sphere, in particular the transition to the principles of the continuity of education and reformatting this sphere as an integral part of the information society. From this point of view we conduct the current study.

The object of the conceptual model of organizing and conducting the training of the pedagogical staff of the general education organizations of the Republic of Bashkortostan is the technology of applying e-learning in the roles mentioned above.

The subject of the conceptual model of organizing and conducting the training of the pedagogical staff of the general education organizations of the Republic of Bashkortostan is the technology of applying e-learning in the roles mentioned above taking into account the use of innovative educational technology.

The task of the conceptual model of organizing and conducting the training of the pedagogical staff of general education organizations of the Republic of Bashkortostan is the technology of applying e-learning in the roles mentioned above is a system description of the universal structure of e-learning application technology.

In this model, under the organization and training of the pedagogical staff of the general education organizations of the Republic of Bashkortostan, the technologies for applying e-learning in the roles mentioned above one should understand the organization of the learning process in conjunction with other educational organizations, the development of teaching materials, taking into account the overall accumulated pedagogical experience, the creation of tools for the exchange of experience and professional development. The organization and conducting of training of pedagogical staff of general education organizations of the Republic of Bashkortostan of e-learning application technology consists of 3 main sub-processes: training, support, certification. Support can be divided into three components: maintenance of technical elements, which is technical support; support of teachers, i.e. methodological support; development of educational materials and advanced training, support for students (Avdeeva et al., 2015).

5. Findings

According to the data of 2016, the proportion of students using electronic educational resources in the educational organizations of the republic in the total number of students in state (municipal) general education organizations is 75%, and the proportion of students using electronic educational resources at home in the total number of students in state (municipal) general education organizations is 49.9%. The share of educational organizations implementing innovative projects (which are their initiators, developers) in the total number of educational organizations of the republic is 50%. The proportion of disabled children who study at home with the use of EE and DLT in the total number of students at home for handicapped children in the region is about 20%. The coverage of the population studying on the basis of public access centers is more than 10%. 17.4% of the republic's teachers regularly use distance educational technologies, including in the unified communications system, to which all general education organizations of the country are connected. 100% of the republic's schools are connected to the republican system of distance education, distance lessons and webinars are held daily. Each user of the system can connect to them using the portal www.edu02.ru.

Therefore, the model is formed by taking into account regional trends in the development of education, in particular:

- creation on the basis of the integrated use of information and communication technologies in the education system of the Republic of Bashkortostan;
- formation of the republican information educational system, development and introduction of innovative educational technologies;
- creation of the republican center of methodical, organizational and consulting support of informatization of the education system in the Republic of Bashkortostan.

While creating the organizational and pedagogical support for the training of the pedagogical staff of the general education organizations of the Republic of Bashkortostan, the technologies for the application of e-learning in the following roles: tutor, organizer, student, teacher in the EE system, DLT the problems solved by its should be systematized, and its activities should be determined. On the basis of the qualification requirements, competence should be formulated, developing qualification program should be worked out, a distance course model should be created and the course itself should be developed in terms of roles: tutor, organizer, student, teacher in the EE system, DLT, which in the course of the experiment will be tested.

6. Conclusion

The reliability and validity of the scientific results obtained is confirmed by the high degree of convergence of analytically obtained results with the data obtained during the analysis of existing solutions and achievements in this field.

The article was prepared with the financial support within the contract No. 06-1 (on grant in the form of a grant for the development of e-education in general education organizations of the Republic of Bashkortostan) of December 19, 2016.

References

- Aggarwal J.C. (2010). *Essentials of Educational Technology (Innovations in Teaching-Learning)*, Vikas Publishing Housing PVT LTD, New Delhi. Page No. 1-10.
- Aggarwal D.D. (1994). *Otto Peters on Distance Education: The Industrialization of Teaching and Learning*. L. N. Y., Routledge.
- Andreev A.A. (2013). E-Learning and distance learning technologies. *Otkryitoe obrazovanie*. № 5. P. 40-46 [in Rus].
- Andreev A.A., Soldatkin V.I. (1999). *Distance education: essence, technology, organization*. Moscow, 1999 [in Rus]. Retrieved from: <http://diss.seluk.ru/m-tehnicheskije/30008393-1-aa-andreev-soldatkin-distancionnoe-obuchenie-suschnost-tehnologiya-organizaciya-moskva-1999-udk-378-bbk-7458-655-andreev-soldatkin> (date of reference 22.04.2017).
- Avdeeva S.M., Bosova L.L., Zaichkina O.I., Nickulicheva N.V., Starovoytova O.R., Khapaeva S.S. (2015). *Information technologies for the development of school libraries: methodical recommendations*. Moscow, Federal Institute for Educational Development, 139 p. [in Rus]
- Cytermann J.-R. (2006). Les spécificités du financement de l'éducation en France. *La revue de l'inspection générale*. № 3.
- David-Evans M. (2004). *E-Learning-Paradise Kanada*. Klett-Themendienst. December 28. P. 25–26.
- Devterova D.R. (2011). Distance learning as a social necessity of the present. *Bulletin of the University of the Russian Academy of Education*. № 3. P. 37-40. [in Rus]
- Dodds A. (1991). *The Development of Distance Teaching: An Historical Perspective*. In J. Jenkins, B.N. Koul, eds., *Distance Education: A Review*. New Delhi: Indira Gandhi National Open University. P. 10–12.
- Dodds A., Kinyanjui P. (1996). *Recent Developments in African Distance Education. Proceedings of Conference on Internationalism in Distance Education*. London: University Park. P. 76–81.
- Federal Law No. 273-FL of December 29, 2012 "On Education in the Russian Federation" (amended on December 19, 2016). Art. 16. Implementation of educational programs using e-learning and distance learning technologies. Konsultant plus. Retrieved from: http://www.consultant.ru/document/cons_doc_LAW_140174/9ab9b85e5291f25d6986b5301ab79c23f0055ca4/ (date of reference 11.02.2017). [in Rus]
- Feskova A.A. (2013). On the problem of increasing the motivation of students to learn. *International Scientific and Research Journal*. № 3-4 (23). P. 11-13 [in Rus].
- Gershunskiy B.S. (1998). *Philosophy of Education for the XXI century*. Moscow, Sovershentvo, P. 34-107. 608 p. [in Rus]
- Gromova T.V. (2006). *The formation of professional readiness of high school teachers to work in the system of distance learning: monograph*. Moscow Tezaurus, 32 p. [in Rus]
- Gromova T.V. (2007). *Current aspects of the formation of professional readiness of high school teachers to work in the system of distance learning: monograph*. Samara, Glagol, 268 p. [in Rus]
- Kangai C.V., Mapolisa T. (2008). Citation Analysis of Research Projects Submitted by the Bachelor of Education (EAPPS) Students (2000-2004) to the Department of Education at the Zimbabwe Open University: Implications for Educators and Librarians. *African Symposium Journal*. Volume 8. No.1. June 2.
- Khutorskoy A.V., Andrianova G.A. (2001). Knowledge at a distance. Center «Eidos» –history, practice, principles of activity. *Internet-magazine "Eidos"*. February 2. [in Rus] Retrieved from: <http://www.eidos.ru/journal/2001/0202.htm> (date of reference 15.04.2017).
- Komisja Europejska. (2012). Kluczowe dane o edukacji w Europie 2012. Retrieved from: <http://www.eurydice.org.pl> (date of reference 15.04.2017)
- Mugridge I., Kaufman D. [Ed.]. (1986). *Distance Education in Canada*. Beckenham, Kent, Croom Helm, 1986.
- Nickulicheva N.V. (2016). *Introduction of distance learning in the educational process of an educational organization: practical manual*. Moscow, Federal Institute for educational development, 72 p. [in Rus]

- Polat E.S., Bucharkina M.J. (2010). *New pedagogical and informational technologies in the system of education: textbook for students of pedagogical high schools*. Moscow, Publishing Center "Academy", 368 p. [in Rus]
- Sabitova N. G. (2011). Practical application of e-learning in the educational process. *Collection of the works of the International Scientific and practical Conference "Information and communication technologies in education, science and production»: in 2 parts*. Protvino. P. 1. P. 321-324. [in Rus]
- Sielatycki M. (2008). Kompetencje nauczyciela w Unii Europejskiej. K. Sujak – Lesz (red.). *Kształcenie nauczycieli w szkole wyższej. Wybrane zagadnienia*. Wrocław.