Asesorías y Tutorías para la Investigación Científica en la Educación Puig-Salabarría S.C.
José María Pino Suárez 400-2 esq a Lerdo de Tejada. Toluca, Estado de México. 7223898475
RFC: ATI120618V12

Revista Dilemas Contemporáneos: Educación, Política y Valores.
http://www.dilemascontemporaneoseducacionpoliticayvalores.com/
Año: VII Número: Edición Especial Artículo no.:43 Período: Octubre, 2019.

TÍTULO: Análisis FODA del aprendizaje a distancia en la educación superior.

AUTORES:

1. Assist. Prof. Irina A. Leontyeva.

2. Assist. Prof. Fayruza G. Rebrina.

3. Gulnaz G. Sattarova.

RESUMEN: La educación a distancia se implementa a través de los portales educativos de Internet creados sobre la base de instituciones educativas y se lleva a cabo con el uso de tecnologías modernas de telecomunicaciones sin contacto directo entre el maestro y los estudiantes. La respuesta a las preguntas al respecto se recibió a partir del análisis de publicaciones científicas e investigaciones tanto nacionales como de síntesis de experiencias con los cursos de capacitación electrónica remota organizados en base a la facultad natural y matemática del Instituto Elabuga de Universidad Federal de Kazán (EI KFU). El artículo revisa los aspectos principales del aprendizaje a distancia, se realiza un análisis FODA que revela las fortalezas y debilidades, oportunidades y amenazas de la educación electrónica y se definen formas óptimas de solución.

PALABRAS CLAVES: aprendizaje a distancia, análisis FODA, the Higher School, curso de capacitación electrónica.

TITLE: SWOT-Analysis of E-Learning in Higher Education.

AUTHOR:

1. Assist. Prof. Irina A. Leontyeva.

2. Assist. Prof. Fayruza G. Rebrina.

3. Gulnaz G. Sattarova.

ABSTRACT: Distance learning is implemented through the educational Internet portals created on the basis of educational institutions and is carried out with use of modern telecommunication technologies without direct contact between the teacher and students. The answer questions in this regard, received proceeding from the analysis of scientific publications and researches of both domestic, as well as on the basis of experience synthesis with the remote electronic training courses organized on the basis of natural and mathematical faculty of the Elabuga Institute of Kazan Federal University (EI KFU). The article reviews the main aspects of E-learning, and SWOT analysis revealing strengths and weaknesses, opportunities and threats of electronic education is carried out and optimal solution ways are defined.

KEYWORDS: e-earning, SWOT analysis, the Higher School, electronic training course.

INTRODUCTION.

Now, informatization of an education system assumes computerization of educational process, as well as "implementation of educational programmes with use of remote educational technologies" (The federal law of 29.12.2012 No. 273-FZ "About education in the Russian Federation"), and competences of students have to become the result of such education: professional skills (hard skills) providing realization of professional functions and universal skills (soft skills) increasing efficiency of life in society.

The modern educational standard of the higher education provides the choice of new strategy of education in which the realization of competence-based approach is enabled. Assimilation of classroom work with electronic training in the form of the remote electronic training courses (ETC) can become such a strategy. Today, it became urgent in connection with a tendency of hours number

reduction on resident training whereas the hours allotted for independent work of students on the contrary increase. The mixed training, according to S. Bonk (Bonk, 2005), represents a combination of traditional training (face-to-face) with the training based on use of modern computer technologies.

Currently, electronic training as an integral part of the mixed training becomes the main direction of increase in competitiveness of education in Russia (Sukhanova, 2016; Shurygin & Krasnova, 2016), as well as other world countries (Burns, 2013; King & Boyatt, 2015). The realization of educational programmes with application of electronic training in higher education institutions has to be enabled on condition of creating the base including electronic educational resources in the form of ETC on different disciplines, the telecommunication technologies and technical means providing development of educational programmes irrespective of the students' location.

In order to improve the quality of distance learning educational IT technologies, as well as thorough methodical training allowing classroom training are required; and for independent work with ETC harmoniously to interact with each other and to create uniform educational space of higher education institution the same is required (Bakharev & Nagayeva, 2016).

Electronic education at the present stage can become means of forming the ability to promote self-education since it assumes large volume of students' independent work. According to Shurygin & Krasnova (2016) remote electronic education promotes the development of independent work skills and gives the student a chance to independently form a certain system of knowledge. Besides, distance learning, according to Belko E. S. (Belko et al., 2016) allows to transfer the student from the passive consumer of knowledge to the active creator able to formulate a problem, to analyze ways of its solution and to find optimal result.

The higher schools have rather high potential for introducing the electronic training courses into the learning process, among them - existence of own servers and the websites, computer classes, competent experts, electronic educational environments (LMS MOODLE), possibilities of teachers training for creating electronic content.

DEVELOPMENT.

Methods.

In a research, SWOT analysis of remote ETC introduction in system of students' training in higher education institutions for pedagogical activity is used. The analysis allowed revealing strengths and weaknesses of education with application of ETC, as well as external opportunities and threats for realization of this approach. The correlation analysis of interactions for each of four combinations groups is carried out: strengths - opportunities (SIV), weaknesses - opportunities (SLV), strengths - threats (SIU), weaknesses - threats (SLU).

Results and discussion.

Nowadays, remote ETC are actively being developed in EI KFU and widely taken root into educational process; for instance, at department of biology and chemistry remote ETC on disciplines were developed and introduced in educational process: "Health and Safety", "Zoology of Vertebrata", "Structural Botany", etc. Courses are placed on Tulpar electronic platform in a learning management system (LMS) of MOODLE KFU (Platform of Distance Learning of KFU "Tulpar"). They are available for full-time bachelors of the corresponding directions and specialties.

LMS MOODLE allows to organize training in the course of the joint solution of tasks and to carry out interchange by knowledge both between the teacher and students, and between students. According to Cole J. LMS MOODLE, differs in usability, reliability and flexibility (Cole & Foster, 2008). One of this system's strengths is ample opportunities for communication. The electronic system allows controlling educational activity of students, carrying out monitoring and assessing its quality, stimulating corrections of inaccuracies and mistakes, increasing the discipline development level. Distance electronic learning is a part of a general educational process including classroom work.

To increase learning efficiency with use of IT technologies, it is necessary to find out: what positive effect does ETC have when training students and what risks can arise during their use. Having faced a number of organizational and educational problems, including those concerning improvement of

remote education quality with use of ETC LMS MOODLE we carried out SWOT analysis of this form of training (tab. 1). The analysis assumed revealing strong and weak sides of education with application of remote ETC, as well as external opportunities and threats for realization of this approach.

Table 1. SWOT-analysis of a distance learning using an electronic educational course.

Name	Description
Strengths	
Flexible hours of training.	The student can: • Study the educational module at any time, convenient for him. Having Internet access on the personal cell phone (smartphone), training becomes available in any place. • Study discipline material at individual speed, being guided by the established time frames. • Be in educational process during sick leave.
An opportunity to use various information content including electronic for training.	During class work, in view of limitation in time, it is not always possible to show various versions of information (video fragments, presentations, audio recordings), printed sources can be absent or outdated that is corrected by means of ETC. In educational institution not all educational audiences are supplied with the computer equipment and there is an Internet connection while ETC gives ample opportunities of educational content use
A broad set of "tools" for check and control of knowledge, abilities to apply knowledge.	MOODLE possesses various resources for control of knowledge: tests and tasks, essay, interactive lecture, group chat, forum, etc. For detection of abilities to apply knowledge it is possible to use: a case task, drawing up questions and tests to the studied subject, group projects online, etc.
Control of the student's work with remote ETC.	MOODLE allows controlling activity of students, periodically tracing their progress and keeping their results
Feedback.	Feedback in the on-line and off-line mode allows to individualize training, to hold consultations, to carry out personal communications between the student and the teacher
Development of independent work skills.	When studying discipline with application of ETC it is focused on the independent work of the student promoting forming the skills of self-training and self-organization, as well as rational planning of school hours. The student can independently define the number of repetitions of educational modules and need of repeated studying of a course separate sections
Psychological comfort	Use of remote ETC reduces degree of students' nervousness when performing control tasks (tests, offsets, examinations)
Improvement of training quality due to visualization	Use of the various information report receptions to students by means of an interactive lecture, video, sound, etc. gives the chance to make the studied material more evident and thereof clear and well memorable
Weaknesses	
Insufficient motivation of teachers and students for working with ETC	In case of a large number of the students signed at a time on ETC, check of the problem developing tasks becomes a resource expensive. Lack of material compensation reduces interest of teachers in their use that reduces efficiency of distance learning. Classroom communication of the teacher with students motivates them for work more, than communication in the on-line and off-line mode.

Identification problem of the student identity performing tasks in ETC	Control of student knowledge is in a zone of "a blind spot" of the teacher since he has no idea of the one who exactly solved tasks. Students have an opportunity to give results of others work
Big expenses of time for developing ETC and work with it	Competence-based approach demands introduction in distance education of various creative tasks which development and check require enough time
Lack of choice when performing tasks	Realization of competence-based approach in ETC is accompanied by development and deployment of a big variety of tasks. All tasks are equated by system to 100%. The more tasks, the less grade "cost". It excludes a possibility of variable performance of tasks by students, otherwise they will not gain the threshold number of points.
Increase in an academic load and violation of the students' activity rhythm	At increase in quantity of ETC on various the volume of tasks increases, which can lead to overfatigue and decrease in working capacity
The possibilities of the environment increasing efficiency of electronic training	
Information material of the websites	For the solution of tasks, search of answers to questions, performance of creative tasks, (excepting the testing limited in time), students can use the Internet
Check of tasks for plagiarism	The teacher of ETC can use the Antiplagiarism system for checking the independence of tasks' performance by students
"Symbiosis" of classroom and remote form of education	The mixed model in which class work and ETC is mutually advantageous, they supplement each other, increase educational efficiency
Possibility of continuous training material updating in remote ETC	ETC contains various educational materials which can periodically be updated to avoid obsolescence of information and to keep up to date
Simultaneous training of a large number of students	All-educational ETC (Health and safety) gives the chance of simultaneous training of various profile students
The environmental threats reducing electronic training efficiency	
Lack of the legal base regulating use of author's information resources	In remote ETC references to author's materials (video fragments, movies) uploaded publicly in YouTube by other users are used. In case of copyright infringement material is removed from the website, and references cease to work. To avoid this situation the teacher should download material and place it in personal papers on the server of higher education institution that also violates copyright
Lack of a distance learning possibility	Student can lack: personal computer or Internet access; necessary for work with ability ETC: to download, attach and send tasks, to fill in the glossary, to work with wiki, etc.
Lack of the teacher's necessary competences	The teacher of ETC can have a low level: mastering the modern IT technologies (use of Skype, work in chat, forum); skills of ETC development and deployment
Technical difficulties	During the simultaneous work of a large number of students on the training platform and simultaneous sending tasks by them to the teacher, the system can be overloaded and fail
Education system conservatism	Not all students are ready to work independently, and many teachers are still eager to perform traditional form of education

SWOT analysis allowed defining the external and internal factors exerting impact on efficiency of educational process with use of remote ETC. To answer the question: how to increase efficiency of this form of training and how to make it process operated? - it is necessary to carry out the correlation analysis. In a matrix (tab. 2) ways of the optimal problem solution of the distance

electronic learning more successful introduction into educational process of higher education institution are defined.

Table 2. Correlation between environment opportunities and threats with strengths and weaknesses of a distance electronic educational course.

SIV. How to seize the opportunities?	SLV. How to strengthen weaknesses, using opportunities?
1. Websites information material use by the teacher for ETC development saves time and forces. 2. Exchange of knowledge between students and the teacher increases learning efficiency. 3. In case of the arisen difficulties the student can receive the advisory help of the teacher in the on-line and of-line mode. 4. Students with HIA, in the absence of an opportunity to independently attend classroom can master discipline by means of ETC, being guided by requirements of the discipline programme and using at the same time the Internet resources. 5. Teachers have an opportunity to be trained on creating a remote course. 6. The teacher is exempted from need to wait for performance of a task and in any time, convenient for himself can check answers, using the Antiplagiarism system. 7. The electronic course gives the chance of continuous updating of a training material by file exchange service means. 8. The teacher has an opportunity: to operate activity of trainees through system services (exchange of messages, forum, chat, Skype); to periodically trace progress of trainees by means of the Assessment service. 9. Electronic training allows increasing education quality level due to use of modern information technologies (database, electronic libraries, etc.)	1. It is possible to reduce risk of tasks being solved by student's 'friend for the friend' due to transfer of a subject matter certification on class work. To use Skype with the video camera at individual control of students' knowledge, for example, upon termination of large subjects studying. 2. As tasks it is possible to use drawing up creative tasks, tests, questions on the studied subject by students (competence-based approach since it allows to apply knowledge in practical activities). 3. Combination of electronic and classroom training can increase student motivation for training. 4. To introduce system of work encouragement for the teacher working with ETC
SIU. At the expense of what it is possible to reduce threats?	SLU. What biggest dangers does the use of remote ETC hold?
1. The risk of plagiarism is being decreased by use of the Antiplagiarism system opportunities.	1. Lack of an opportunity for a part of students to train in ETC.

2. The used problem tasks force to look for answers to questions by a reasoning, but not direct use of information. 3. The big bank of questions allows system to select tasks for testing in a casual order that reduces possibilities of their repetition for students of one group and attempt to write off answers of each other. 4. To avoid "loss of references" it is possible: to use the materials which do not have author's restrictions and intended for the educational purposes. 5. To avoid teachers and students' problems with computer illiteracy it is possible to provide short-term training in work with information content of a remote course. 6. It is possible to unload system having reduced the number of the students simultaneously studying on the platform, having exposed various terms for holding a course for different academic groups. 7. During the work with the computer it is necessary to lower visual loading having limited operating time (no more than 6 hours a day). 8. For successful realization of electronic training it is expedient to gather small groups that allows teacher to work individually with each student and to control his actions	2. Insufficient computer literacy of many students and teachers. 3. Low teacher motivation for developing a remote course. 4. High labor input in creating ETC

The SWOT analysis of e-learning undertaken by us showed that application of electronic training courses in educational process of the higher school will allow to increase quality of education in case of:

- Developing informative motivation of students in the course of new education forms development.

- Developing professional competences in teachers for creating remote electronic courses.

- Expanding possibilities of students' educational achievements control.

- It is rational to combine various technologies of developing a training material by students.

Results of the carried-out SWOT analysis can be used for planning the further strategy of developing distance learning in higher education institutions for the purpose of effective development of the actions allowing:

- To strengthen weaknesses of distance electronic learning by means of the available opportunities.
- To minimize threats.
- To use possibilities of the environment for increasing efficiency of distance electronic learning.

CONCLUSIONS.

E-learning is a rather difficult process demanding moral and material inputs, as well as corresponding training of the teacher. Success of distance electronic learning introduction into the system of modern high school education is defined by rather high motivation of the faculty and students. It is possible to state that today students are more eager to use distance electronic learning, than teachers are; since at present modern generation has skills of work in social networks and with computer technologies rather widely developed.

Involvement of higher education institution teachers in distance electronic learning is possible on condition of developing well versed motivation system. As ETC development and the subsequent work in it demands big expenses of time and forces, it is necessary to resolve an issue of decrease in the general academic load of the teacher. The second important question is ensuring interest of the faculty through the system of additional stimulating by means of increasing salary. Lack of adequate compensation on creation and work with ETC leads to the fact that preference of distance learning is given to professors and associate professors (whose payment is less and loading is higher) in comparison with younger teachers.

The solution of these questions by the management of higher education institution can lead to successful introduction of distance electronic learning in educational process and to satisfaction of modern society and labor market requirements in the workers capable of self-education during all life.

Acknowledgements.

The work is performed according to the Russian Government Programme of Competitive Growth of Kazan Federal University.

BIBLIOGRAPHIC REFERENCES.

1. Bakharev, M. S., & Nagayeva, S. N. (2016). Degree of the teacher readiness for realization of distance learning. *Electronic Education: Prospects of SMART Technologies Use: Materials of the III International Scientific and Practical Videoconference* (Tyumen, on November 26, 2015) / Under the editorship of S. M. Moor. - Tyumen, TSOGU, 22-24.
2. Belko, E. S. Zykov, T. V., Kuznetsov, E. V. etc. (2016). Use of the electronic training courses at the organization of independent work of students. *The Yarovslavsky Pedagogical Messenger, 1,* 107-112.
3. Bonk, C. (2005). http://elibrary.ru/author_items.asp?refid=335908581&fam=Bonk&init=C Graham C. http://elibrary.ru/author_items.asp?refid=335908581&fam=Graham&init=C Handbook of blended Learning: Global Perspectives, Local Designs. San Francisco, CA: Pfeiffer Publishing. 624.
4. Burns, M. (2013). *Distance Education for Teacher Training: Modes, Models and Methods*. URL: http://idd.edc.org/sites/idd.edc.org/files/DE%20Book-final.pdf
5. Cole, J., & Foster, H. (2008). *Using Moodle. Teaching with the Popular Open Source Course Management System*. Sevastopol, CA: O'Reilly Media. 384.
6. King, E., & Boyatt, R. (2015). Exploring factors that influence adoption of e-earning within higher education. *British Journal of Educational Technology, 46*(6), 1272-1280. URL: http://onlinelibrary.wiley.com/doi/10.1111/bjet.2015.46.issue-6/issuetoc
7. *Platform of Distance Learning of KFU "Tulpar"* [Electron. resource]. URL: http://edu.kpfu.ru/course/index.php? categoryid=328

8. Shurygin, V. Y., & Krasnova, L. A. (2016). Electronic learning courses as a means to activate students' independent work in studying physics. *International Journal of Environmental & Science Education, 11*(8), 1743-1751.
9. Sukhanova, N. T. (2016). Electronic training in higher education institution: assessment of electronic courses quality. *Problems of modern pedagogical education, 52*(6), 302-309.
10. The federal law of 29.12.2012 No. 273-FZ "About education in the Russian Federation". URL: http://sch1213s.mskobr.ru/files/federal_nyj_zakon_ot_29_12_2012_n_273-fz_ob_obrazovanii_v_rossijskoj_federaii.pdf

DATA OF THE AUTHORS.

1. **Irina A. Leontyeva**. Assistant professor of the Department of Biology and Chemistry, Kazan Federal University, Elabuga Institute. E-mail: leontjeva.ira@yandex.ru
2. **Fayruza G. Rebrina**. Assistant professor of the Department of Biology and Chemistry, Kazan Federal University, Elabuga Institute.
3. **Gulnaz G. Sattarova**. Deputy Director for Social and Educational Work, Kazan Federal University, Elabuga Institute.

RECIBIDO: 14 de septiembre del 2019. **APROBADO:** 27 de septiembre del 2019.