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**RESEARCH OF CONDITIONS APPLICATION OF DISTANCE  
LEARNING TECHNOLOGIES IN THE MASTER'S PROGRAMS**

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***Abstract***

The article presents the main results of a study conducted in 2018 at the Institute of Economics and Management of Kemerovo State University (Kemerovo, Russia) in order to determine the conditions for the effective realization of the potential of distance learning technologies in teaching courses in the Master's program of Management. The study included the study of the master students' opinion on the possibilities, limitations and prospects for the use of distance learning technologies. The results of the study show that students have the necessary competencies and motivation to learn using distance learning technologies, have a positive attitude to distance learning, they know and understand its main capabilities and limitations. However, undergraduates underestimated the real scale and nature of changes in the conditions necessary and sufficient for the use of distance technology. The presence of a well-functioning electronic information-educational environment and technical support for distance learning are not sufficient to ensure the quality of education. In the transition from traditional educational technology to distance technologies, the structure of situational factors and their influence on the quality of training, the role of individual characteristics of students, their working and living conditions, image life and other factors increase. The study showed that the preliminary special training of master students for distance learning, focusing their attention on autonomy, self-organization, self-government, as well as the obligatory consideration of situational factors, the influence of which is less noticeable during the traditional educational process, becomes an indispensable condition for the effective use of distance learning technologies.

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**Keywords:** Creation and development of competencies, distance learning technology, hard skills, improving the effectiveness of training, soft skills, survey of students in a master's program.



## 1. Introduction

Acceleration of technological and social development, qualitative changes in the nature and content of work, along with the development of information technologies and communication capabilities in post-industrial society, impose quite stringent requirements on the transformation of both hard skills and soft skills of people. The process of formation of competencies is also undergoing major changes. In fact, the trend of strengthening the role of electronic information communication technologies in vocational education, which has emerged several decades ago, continues.

The development of distance education is the global tendency to form human capital. Currently, the use of distance learning technologies in higher education is a completely natural, obvious and common practice. Prospects for the development of distance education will largely depend on two factors: on the adaptation of all stakeholders to the post-industrial environment (including universities, society, business, government structures and others) by taking into account the results of distance education research the goal is to reduce the cost of education while expanding access to learning opportunities for all (Saba, 2011). Creating an educational semantic network, as the next step in the evolution of e-learning, is viewed as a completely realistic and practical answer to modern challenges (Aroyo & Dicheva, 2004). Another option for the development of distance learning technologies is the transition to advanced blended learning in higher education as a response to the changing digital landscape (Adekola, Dale, & Gardiner, 2017).

Problems of providing effective distance education are considered in a number of works by Marshall (2010), researching e-learning activities conducted at universities in the United States, the United Kingdom, Australia and New Zealand, notes that university culture and existing opportunities largely determine the nature and extent of organizational change. One of the aspects of cultural change is cross-functional collaboration that eliminates both institutional and cultural barriers to the long-term sustainable development of e-learning (Gunn, 2010). The benefits of teamwork in developing e-learning resources and ensuring continued support from developers (for example, universities that invest in the development of e-learning resources) are of particular importance for teachers who are beginning to master a new e-learning technology, developing relevant academic skills using and changing the electronic resource (Scott, 2014). Constructive for the development of e-learning is the online experience of using various instant messengers and social networks to share educational resources, as well as to communicate with colleagues on professional issues. At the same time, members of social networks connected to several groups can perform the function of a “bridge” ensuring the transmission and dissemination of information through the network (Macià & García, 2018).

The practice and means of communication in distance learning are related to the involvement of students in the educational process (Kayode, 2018). Insufficient and inefficient use of communication tools has a negative impact on the involvement of students in the educational process and determines the need to improve the management of the process of interaction between the teacher and students (Kayode, 2018).

Distance education provides the learner with the opportunity to independently choose the place, time, mode and duration of training. However, the flexibility of online distance learning can devalue it (Sheail, 2018). The time aspect of online education is presented in the work of Oliphant & Branch-

Mueller (2018). The study shows the critical importance of student learning flexibility, but it is noted that many students underestimated the imperatives arising from time and pointed out the limited time for various types of training and extracurricular activities (Oliphant & Branch-Mueller, 2018). Improving the effectiveness of e-learning through time management is devoted to the study of the effect of multitasking and distractions in the online environment on learning, as well as methods and technologies to reduce the negative effect of their manifestation (Winter, Cotton, Gavin, & Yorke, 2010). At the same time, in order to increase the academic performance of students studying remotely through online access to information and training resources, it is necessary to notify students about the value of resources and the best ways to use them (Crampton, Ragusa, & Cavanagh, 2012).

Developing the ideas of organizational and methodological support for distance learning, we note that a necessary condition for its sustainable development is the scientifically based formation of competencies for managing team rewards (Akulov, Babina, Nesterov, & Khaliulina, 2018), as well as taking into account personality traits and psychological characteristics of students, in many ways determining academic achievement (Blau, Weiser, & Eshet-Alkalai, 2017). At the same time ensuring the compliance of educational technologies with the goals and needs of students in their dialectical development is of fundamental importance. In organizational terms, this means the formation of a learning environment that promotes interaction between students, staff and resources, matching individual needs with collective goals (King & Honeybone, 1996).

The study by Simsek (2005) shows that the functions of educational technologies in various fields are mainly related to learning processes and educational resources there are no significant differences associated with problems arising in different countries.

The relevance of the development of distance learning in Russia has been repeatedly emphasized on various discussion platforms (Babina, Akulov, Nesterov, & Khaliulina, 2018; Sitarov & Shutenko, 2017).

The feasibility of developing distance learning is reflected in the regulatory legal framework. Today in Russia fundamental provisions have been defined, they establish a fairly rigid framework and requirements for the quality of the education result and the basic conditions for obtaining it, providing educational organizations with a wide choice of educational technologies, methods and forms of ensuring results. Educational organizations have the right to apply e-learning and distance learning technologies in order to provide students with the opportunity to develop educational programs, directly at the student's place of residence or his temporary stay.

## **2. Problem Statement**

Given the feasibility of using distance learning technologies, their potential, obvious and latent risks of their use, as well as a specific request from students and other stakeholders, the study of the conditions for the effective realization of the potential of distance education remains relevant. The presence of a large amount of scientific information on various issues of distance learning technologies allows to improve the quality of university education, both in the direction of developing hard skills for students and in the direction of developing soft skills. It is important to ensure the unity of

methodological, institutional, organizational and methodological approaches to the formation of an effective system of teaching a course with the use of distance learning technologies in Master's program.

The object of the research was the graduate students of the program "Management" of the Institute of Economics and Management of Kemerovo State University, who study the discipline "Compensation Management" in accordance with the curriculum.

### **3. Research Questions**

As part of the study, the following tasks were set:

- to study the opinion of graduate students on the opportunities, limitations and prospects for the use of distance learning technologies;
- to assess the degree of understanding of the essence of distance educational technologies by students, the specifics of their implementation and the measure of readiness to master the training course with their application;
- to form a system of distance teaching of the course "Compensation Management" in the Master's program of the training area "Management".

### **4. Purpose of the Study**

The main expected result of the study is to determine the conditions for the effective realization of the potential of distance learning technologies when teaching training courses in the Master's program in the Management course:

- conditions created by the educational organization;
- conditions created by the graduate student himself.

### **5. Research Methods**

The main research methods were:

- anonymous online survey (questioning) of master students prior to the application of distance learning technologies;
- in-depth interviews of master students and scientific and pedagogical workers in the process of applying distance learning technologies and after completing the course;
- method of expert assessments of learning outcomes using distance learning technologies;
- holding a round table with master students after completing the training course.

### **6. Findings**

Research aimed at improving the quality of the educational process in the master's program at the Institute of Economics and Management of Kemerovo State University has been conducted on a regular

basis since 2011, which has made it possible to form the basic conditions for the use of distance learning technologies. The study in 2017-2018 focused on the study of the conditions for the effective realization of the potential of distance learning technologies.

The first stage of the study involved an anonymous online survey (questioning) of master students studying the discipline "Compensation Management". The structure of respondents: 73% - girls and 27% of boys; 80% of respondents are aged 16–25.

The general part of the questionnaire "Distance education in the Master's program: opportunities and limitations" allowed us to create a "profile" of the student. It was found that all respondents without exception use the Internet daily. Being on the Internet, most of the time they spend on searching for information, viewing media content.

To obtain new knowledge and skills, 93% of respondents used online libraries, 60% used educational and training sites on the Internet, and 53% used video lessons or lectures. Special training computer programs at work and training applications (programs) for mobile phones, tablets were used by 27% of respondents. Most of the time for training purposes, 73% of respondents visit the Internet search systems as the initial stage of the educational process.

The main purpose of acquiring new knowledge and skills using a computer and (or) the Internet was 53% of respondents had self-education or personal development, 40% received basic (professional) education. With the help of special computer programs and (or) the Internet, 80% of those who took the survey "gained knowledge for study and education", 67% "new knowledge, necessary information for self-development"; 60% - "knowledge for work".

At the same time, 87% would like to get new knowledge, skills and abilities using special computer programs and (or) the Internet.

The most important thing when choosing a tutorial on a computer or on the Internet, according to the respondents, is: "understandable, accessible statement of material" (87%), "usability of the program" (80%), "availability of a version for mobile devices (smartphones, tablets)", "The opportunity to receive a (recognized) diploma (certificate) of training completed" (47%).

The second part of the questionnaire was aimed at identifying the attitude of master students to distance learning technologies.

Overall, 67% of respondents support the idea of introducing distance learning technologies. At the same time, 73% of respondents would prefer a combination of distance and full-time study.

It was found that 87% of respondents *constantly* use a personal computer and the Internet for self-training. The most acceptable form of independent work is training using online resources (67%). Master students rarely use "printed learning materials" and "prepare in the library".

In general, respondents are well aware of Russian and / or foreign educational institutions that offer distance learning via the Internet (67%), as well as distance learning systems (53% of respondents). It should be noted that almost half of the respondents studied distantly in the past or are currently studying. Among the respondents there are no disappointed with the results of distance learning.

60% of respondents prefer a form of distance learning, such as web-classes, 20% each - teleconferences and telepresence. This is due to the fact that webinars and video conferences are the most

familiar to the respondents and (or) the positive experience of participation of the respondents in webinars and teleconferences has been formed.

The third part of the questionnaire was aimed at identifying and assessing the opportunities and risks, expectations and concerns associated with the use of distance learning technologies, problems and factors affecting the quality of education. The survey was conducted before the beginning of teaching “Compensation Management” course and was to serve as one of the bases for the formation of an effective training system.

The open-ended question “What do you see as advantages of distance learning?” we received the following answers (as the frequency of answers decreases):

- saving time (including time spent on the road to the university and back);
- flexible planning of time use (including training at a convenient time for yourself on a self-compiled plan-schedule, free employment);
- mobility in gaining knowledge, the ability to be geographically remote from the place of training (including the place of work, home, transport and other convenient places for the student with access to the Internet);
- the ability to combine study with family, work, hobby;
- the opportunity to study in prestigious universities (including foreign and on open educational online sites), in organizations providing additional education and advanced training.

To the open question “How is distance education attractive for you?” the following answers were received:

- flexible training schedule (100%);
- no need to travel (73%);
- the opportunity to study on the job (60%);
- significant time savings (53%).

Answers to the open question “What risks does the use of distance learning have for you?” allowed us to identify two groups of fears and the most serious risks:

1) possible reduction in the quality of education in the conditions of using distance learning technologies and limiting the frequency and duration of direct contacts with the teacher (for example, in connection with “possible reduction of consultation time”, “inability to ask again, clarify if something is not clear”, “decrease in efficiency control”, “replacement of highly qualified teachers with less qualified ones” and others);

2) the need for high motivation and will to self-study, as well as a serious and responsible attitude to self-planning of the learning process, self-organization and self-control with a high level of self-discipline.

According to respondents, distance learning would be the most effective in the field of information technology (60%), in management (33%), but not in engineering sciences or economics.

Master students noted that *the real knowledge and competences* are most likely to be the result of the process of distance teaching of individual sections (topics) of the discipline, and not the discipline as a whole.

Only 20% of respondents believe that the quality of education in connection with the use of distance learning technologies in the teaching of certain disciplines "certainly will increase".

Questions from the fourth part of the questionnaire were aimed at assessing the degree of understanding of the importance of conditions affecting the quality of education.

Kemerovo State University has the opportunity to implement distance learning on the basis of the open, freely distributed platform "Moodle" and on the basis of the electronic information and educational environment of the university "EIOS".

When forming the system of teaching the course "Compensation Management", all elements of the electronic information and educational environment were preliminarily developed and tested: the author's electronic multimedia textbook, video lectures, presentations and other resources. Were also identified, configured and tested technical means to ensure the implementation of distance learning technologies.

The survey showed that 86% of respondents are familiar with the Moodle virtual learning environment to varying degrees, and almost all respondents would like to master it. The "EIOS" website ("Electronic Information and Educational Environment") is not only familiar to the respondents, but is also constantly visited (40% of respondents visit it several times a day).

Summarizing the results of the survey, we can state the following:

- master students have the necessary competencies and motivation to learn using distance learning technologies, have a positive attitude to distance learning, know and understand its basic capabilities and limitations, realize personal benefits;
- master students are aware of the potential risk of reducing the quality of education in the application of distance technologies and the increasing personal responsibility for the result of training.

Taking into account the results obtained, a system of distance teaching of the "Compensation Management" course was created in the virtual learning environment "Moodle". An in-depth interview of students and academic staff in the process of distance teaching and after completing the course has shown that:

- master students underestimated the real scale and nature of changes in the conditions necessary and sufficient for the use of distance technology;
- availability of EIOS and technical support for distance learning are not sufficient to ensure the quality of training;
- the structure of situational factors and their influence on the quality of education in the transition from traditional educational technology to distance ones change significantly; the role of individual characteristics of students (autonomy, responsibility, discipline, punctuality, commitment, etc.), the conditions of their work and life, lifestyle and other factors.

The results of learning with the use of distance learning technologies - the degree of formation of hard skills and soft skills - were evaluated by the method of expert assessments in the process of public protection of collective (group) projects developed by master students. The quality of projects and their protection in general testified to the formation of competencies and, consequently, to the successful approbation of the developed system of distance teaching of "Compensation Management" course in the Master's program in Management course.

Following the results of the study of the entire course, a round table was held with the participation of experts, teachers and master students. During the analysis of the experience of using distance learning technologies, it was noted that the most likely result of distance learning is the formation of professional competences (hard skills); the formation of flexible communication and social skills (soft skills) is much more difficult.

## **7. Conclusion**

The effective realization of the potential of distance learning technologies in teaching courses in the magistracy is possible when the following conditions are met:

- conditions created by the educational organization: the effective functioning of the electronic information and educational environment; reliable technical support of distance learning technologies; competent motivated staff;
- conditions created by a master student: the motivation for the result of training; formed competences in the application of information and communication technologies; self-determination of the place, time, mode of study; systematic time management and more.

The study showed that the preliminary special training of master students for distance learning, focusing their attention on autonomy, self-organization, self-discipline, and self-government becomes a prerequisite for the effective use of distance learning technologies. However, the formation of distance learning systems must take into account the individual characteristics of students, their working and living conditions, lifestyles and other situational factors, the effect of which is less noticeable during the traditional educational process.

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