

Online Course as a Way to Organize Distance Learning

Prostova D.M.¹ Sosnina N.G.¹ Tikhonova A.D.²

¹*Department of Foreign Languages, Ural State University of Economics, Ekaterinburg, 210046, Russia*

²*Department of Enterprise Economics, Ural State University of Economics, Ekaterinburg, 210046, Russia*

**Corresponding author. Email: natalya789@yandex.ru*

ABSTRACT

This paper explores the possibilities of distance learning that meets the requirements of the digital economy. Based on the legal documentation of the Russian Federation, the theoretical research of distance learning and taking into account the European Digital Competence Framework, the authors have developed the map of online course design on teachers’ ICT-competences development. The design map demonstrates the possibilities of asynchronous interaction of all participants in the educational process and the use of digital educational environment conditions for personal and professional development. The implementation of the developed online course will prepare teachers for the effective use of the digital educational environment in the process of teaching and research activities.

Keywords: *digital economy, distance learning, distant education, online course, information and*

communication competences, European framework of technological competencies, online course design map

1. INTRODUCTION

The conditions for the development of digitalization and the digital economy require fundamental changes in the education system. The regulatory and legal documents of the Russian Federation establish rules for the use of organizations engaged in educational activities, e-learning, distant education technologies in the implementation of basic educational programs and / or additional educational programs [1].

In legal documents distant education is considered as “a complex of educational services provided to the general population of the country and abroad with the help of a specialized educational environment based on the use of the latest information technologies that provide the exchange of educational information at a distance” [2].

Taking into account the requirements of the state, business, society and households, the strategic aims of distant education system development are the following:

- development of the regional economy;
- continuity of learning throughout human life;
- integration of organizational and pedagogical conditions of the distance learning with existing pedagogical systems;
- focus of education on personal development priorities.
- Distant education is characterized by the following features:
- modularity – each course creates a unified view of a certain subject area, which allows to create a curriculum for individual and group needs;
- flexibility – in distant education learners work at a convenient time, in a convenient place and at a convenient pace, where everyone can study as

long as he personally need to master the subject area and take the necessary examinations in the chosen courses;

- specialized technologies and means of learning – a set of methods, forms and means of interaction with a person in the process of independent but controlled mastering of a certain area of knowledge, which are accumulated in data and knowledge banks, video libraries, etc. [3].
- specialized quality control of training – distance-organized examinations, interviews, practical, course and design works, externship, computer intelligent testing systems.

Following the regulatory and legal framework and taking into account the specific characteristics of the new learning format, online courses are considered economically and pedagogically reasonable to be introduced in the process of distance learning. The economic reasonability of the designed online courses lies in the reflection of the regional problems that should be leveled through this form of learning.

One of the main conditions for effective development of distant education system is the possession of information and communication competences by all participants in the educational process, an analysis of the development level of which revealed a number of problems.

Thus, the aim of this study is to design an online course on information and communication English teachers’ competences development.

1.1 Related Work

There are two terms in the scientific literature: “distant education” and “distance learning”. Some scientists consider them synonyms. The authors of this research

believe that both concepts are not identical, just as the concepts of “education” and “training” are different.

1.1.1. Distance learning

Distance learning begins long before the massive spread of PCs and Internet technology. In France, distance learning was actively developed in the first half of the 20th century (National Center for Distance Learning). In 1969, the Open University was founded in the UK. Distance learning systems in American general education (School Tech News, 1986) were actively developed in the 80s of the XX century.

A group of American mark the advantage of distance learning in increasing the ability to know and/or behave through indirect experiences that are limited in time and/or distance so that the student does not have the same situation and the subject being studied [4].

Distance learning in Russia developed intensively in the early 90s, especially after the adoption of the "Concept on the creation and development of a unified system of distant education in Russia" in 1995.

In the domestic literature, distance learning is considered to be a specially organized, purposeful process of interaction between the trainer and the student, which is aimed at the acquisition of knowledge, skills and abilities, as well as at the formation of a worldview, the development of mental abilities and potential capabilities of the students, the development and consolidation of self-education skills in accordance with the goals [5], as an ordered interaction between the teacher and students, which is aimed at achieving the goal [6], and as a specific process of interaction between the teacher and students [7], [8]. The main idea of these definitions is the process of interaction, so their targeted, reflexive links are emphasized. In this direction learning can be seen as a bilateral activity [9].

R. Flink defined distance learning as a learning system in which the learning process is separated from the teaching process. The student works alone or in a group, guided by training materials prepared by the instructor, who as a consultant is far from the students; however, student may communicate with the instructor using one or more technical means. Besides, distance learning can be combined with various forms of face-to-face meetings [10].

According to D.J. Keegan [11], the following main characteristics of distance learning are the following:

- teacher and student separation in terms of time and space;
- educational establishment participation in the planning and preparation process;
- use of technical means by students;
- provision of two-sides communication;
- the possibility of holding seminars and consultations periodically;
- participation in the industrialized form of learning.

E.S. Polat and N.V. Elashkina share D.J. Keegan's opinion on distance learning [12], focusing on the principle of independent student learning [13].

A.A. Andreev and V.I. Soldatkin add case technologies, as well as possibilities of personal consultations, giving preference to asynchronous mode of learning to the content of distance learning. These authors do not emphasize the interaction only between students and the teacher, but also between the students themselves [14].

Thus, summarizing the above viewpoints, distance learning is a form of learning the main elements of which are the physical separation of teachers and students during the learning process and the use of different technologies to facilitate communication between the student and the teacher. In the context of this study, distance learning is defined as formalized learning process organized through asynchronous teacher-student interaction, which is separated in time and space.

1.1.2. Distant Education

In the pedagogical encyclopedic dictionary distant education is defined as a broader concept than distance learning, meaning a system of implementation of distance learning, the implementation of individual achievement and confirmation of educational qualifications [15].

E.S. Polat [16] and V.A. Slastenin [17] also emphasize the non-identical nature of the concepts been studied. In the Cambridge Dictionary, distant education is a way of learning where a student does not go to school, college or university and receives assignments via the Internet [18].

According to American scientists M.G. Moore and H. Kersley, distant education is a global system of knowledge transfer [19]. However, the scope of the concept for them coincides with distance learning in the traditional form: the spatial and temporal separation of the process of teaching and learning; use of technical means; the possibility of two-ways communication.

V.V. Polovinkina summarizes that distant education is a set of educational services provided to the general public through a specialized information educational environment based on the means of exchanging educational information at a distance [20].

B. Holmberg puts the following two mandatory elements into the basis of his definition:

- spatial and temporal separation of the teacher and students;
- planning and structuring of a course by an educational institution.

According to Holmberg's definition, it is the structuring of educational materials and their integration into an effective system of educational environment that distinguishes distant education from individual learning, as well as learning through television programs [21].

Summarizing the above analysis of the concepts studied, the authors of this research consider distant education as an area of education that focuses on the development of pedagogical and technological systems that are effectively used to provide education to students, both in

asynchronous form and in real time using information and communication technologies.

1.2. Our Contribution

This study presents a design map of an online course on the development of information and communication technologies (ICT) competencies of English teachers, created on the basis of theoretical analysis of distance learning and taking into account the European Digital Competence Framework. The design map demonstrates the possibilities of asynchronous interaction of all participants in the educational process and the use of digital educational environment (DEE) conditions for personal and professional development. The implementation of the developed online course will allow preparing English teachers for the effective use of the DEE in the process of pedagogical and scientific activities.

1.3. Paper Structure

The rest of the paper is organized as follows. Section 2.1. introduces the theoretical base of on-lines course, which includes the definition of the term and the preconditions for its creation. Section 2.2. presents a structural analyses of the ICT-competences of school and university teachers, held by National Agency for Financial Research, the demonstration of the development level of the competences under consideration, as well as the analyses of retraining programs for teachers in the Sverdlovsk region implemented by Institute of Education Development. Section 2.3. analyses the modelling map of on-line course for English teachers' ICT-competences development.

2. BACKGROUND

This research aims to design an online course on the development of ICT-competences of English teachers. In this regard, it is useful to consider the general methodological requirements for developing online courses and to analyze the structure and content of teachers' ICT competences.

2.1. Online course as a promising form of digital educational content

On the basis of a number of legal and regulatory documents [22], [23], [24], [25] online courses should become the central link of modern education, ensuring the quality of students' training at the world level.

Online courses first appeared in the 70s in America and a number of European countries [26] as a form of organization of students' individual education who do not have the opportunity to get education in a full-time form.

Today, an online course is a set of types, forms and means of educational activity, fulfilled using only distance learning technologies within a single educational path. The preconditions of online courses are the following:

- the introduction of new educational technologies and following the trends of modern society,
- the increasing confidence in learning outcomes and openness of the learning process,
- the rhythm of the learning process and increasing students' motivation for self-learning and self-organization,
- the possibility of compiling individual educational path by students,
- the costs redistribution on the educational program towards active teaching methods; reduction of costs on the programs implementation.

2.2. Digital competences of teachers

2.2.1. Content of digital competences

The requirements for the modern stage of educational development dictated by the emerging digital economy [27] are mainly related to the possession of digital competences (ICT-competences) by all participants of the educational process [28]. In the context of this study, digital competencies and ICT-competencies are considered by the authors to be identical concepts.

Nowadays there is a number of sufficient researches on the structure and content of ICT-competencies. Based on the international experience and following the National Agency for Financial Research (NAFR), we view ICT-competencies as a set of knowledge, skills, and values that enable us to design all stages of educational work and improve learning results using digital educational resources.

The European Digital Competence Framework 2.0 (DigCompEdu), which illustrates the structure and content of teachers' ICT-competencies under discussion, is used to determine the development level of teachers' ICT competencies [29] [Table 1]. DigCompEdu includes 22 competences grouped in six blocks. The six levels of ICT-competencies are distributed accordingly: Newcomer, Explorer, Integrator, Expert, Leader and Pioneer.

2.2.2. Assessment of the development level of teachers' ITC-competences in the Russian Federation

According to NAFR, Russian teachers have demonstrated an average level of ITC-knowledge in pedagogical activities [Table 2]. Most teachers were tested as Integrators and Experts – 68% of school teachers and 63% of university teachers totally. The Leader and Innovator subgroups included only 14% of school teachers and 12%

of university teachers [30]. School teachers are more qualified to exchange information with colleagues from other schools by digital technologies, to improve their own skills by online learning, to use digital technologies in the educational process consciously and safely, and to take better care of their pupils as demonstrated by the individual characteristics and needs of children in the educational process.

University teachers use digital technology to communicate with colleagues more actively, they are better able to cope with the need to change existing digital teaching materials and resources, and are more likely to organize students into working groups to carry out project activities using digital services, such as shared documents and cloud technologies. University teachers also actively use various digital technologies to provide their students with feedback on their progress.

The data discussed above make it possible to identify competencies in all 6 blocks where further development of teachers' ICT-competencies is possible and necessary:

- learning digital communication with students and colleagues;
- developing skills for sharing and creating materials with teachers in cloud technologies;
- using a computer to create training materials and adapt existing ones;
- deepening knowledge about information protection;
- assessing the reliability of information and the identification of false one;
- using digital technology safely;
- using of digital technologies creatively to solve educational tasks;
- using digital technologies in the educational process and tracking online student activity;
- using digital tools to measure and track student progress and the need for additional support.

2.2.3. Analysis of teacher retraining programs in the Sverdlovsk region

The retraining process for general school teachers as well as for high school teachers in the Sverdlovsk region is organized and fulfilled by the Institute for Education Development. The aim of the institute is not only to organize a modern process of professional development of teachers and managers, but also to introduce modern forms and technologies of organization of students' activities in educational organizations.

Today the Institute is implementing a certain number of various internship programs, seminars, master classes, webinars, video conferences and forums [31]. Here is the list on those aimed at ICT-competences development:

- Internship of educational consultants, tutors in the field of "ICT in the educational process";
- Creating multimedia presentations in preschool educational organizations;

- Educational robotics;
- The use of interactive teaching aids in the educational process of preschool organizations
- Techniques for working with an interactive whiteboard;
- The basics of using 3D modeling and prototyping in extracurricular activities of students;
- A multimedia studio in a preschool educational organization;
- Modern designers and methods of their use for preschoolers;
- Website building.

The subject of the programs described above allow us to conclude how much the programs implemented by the Institute meet the European requirements for ICT-competencies. Thus, we can mark that only three blocks of the European Digital Competence Framework have been developed: digital resources, teaching and learning, and the development of students' ICT-competencies. The remaining blocks are not represented in the Institute's development program at all: professional duties, student assessment and student empowerment and autonomy in the learning process. Thus, it can be mentioned that in the Sverdlovsk region the work on the development of teachers' ICT-competencies is not being done in full.

Recently, the Institute has implemented the project "School of Distance Learning", which aims to create a single information education space of the region, the development and implementation of distance learning programs for pupils of educational institutions of Sverdlovsk region. However, this project covers only 4% of educational organizations in the Sverdlovsk region, and only 1.8% of pupils are active participants in the Institute's digital projects.

2.3. Map of designing an online course on ICT competencies of teachers

Online courses may exist as autonomous educational programs for self-study or may be included in the program of higher professional education.

The process of designing online courses involves the following steps:

- Strategic goals setting in terms of professional competences.
- Formulating the expected results of the course in terms of students' learning activities, the achievement of which ensures a consistent development of the planned competences of the course.
- Designing the expected results of each module of the course according to the logic of mastering its subject content; means of achieving them; means of control; time required to master the training material.

- Designing a final test to assess the level of achievement of planned learning outcomes throughout the course.

Based on a deep theoretical analysis of the principles of distance learning and the analysis of the European Digital Competence Framework, as well as taking into account the needs of the region in the development of ICT-competencies of teachers, the authors of this study developed a design map for an online course on the development of ICT-competencies of English teachers [Appendix1].

The map includes six modules, which correspond to the six blocks of the European Digital Competence Framework. The focus of each module reflects the content

of teachers' ICT-competencies. The distance learning tools offered by the authors demonstrate the broad possibilities of the DEE to the online course participants. Various forms of interaction between all participants of the online course contribute to their personal and professional growth.

The authors of this study believe that the implementation of this online course will allow English teachers to use the DEE effectively in the process of teaching and research activities.

Table1 European Digital Competence Frame

№	Blocks	Contents
1	Professional responsibilities	communication with colleagues
		professional collaboration
		reflective practice
		continuous learning with digital technology
2	Digital resources	digital resource selection
		content and adaptation of digital resources
		digital governance, security and capacity
3	Teaching and learning	teaching
		learning management
		collaborative learning
		self-directed learning
4	Students' assessment	assessment strategy
		paper review
		feedback and planning
5	Students' empowerment of and their autonomy in the learning process	digital access
		differentiation and personalization
		student involvement
6	Development of students' ICT- competences	information literacy
		digital collaboration
		digital content creation
		responsible digital citizenship
		troubleshooting with digital technology/ digital solutions

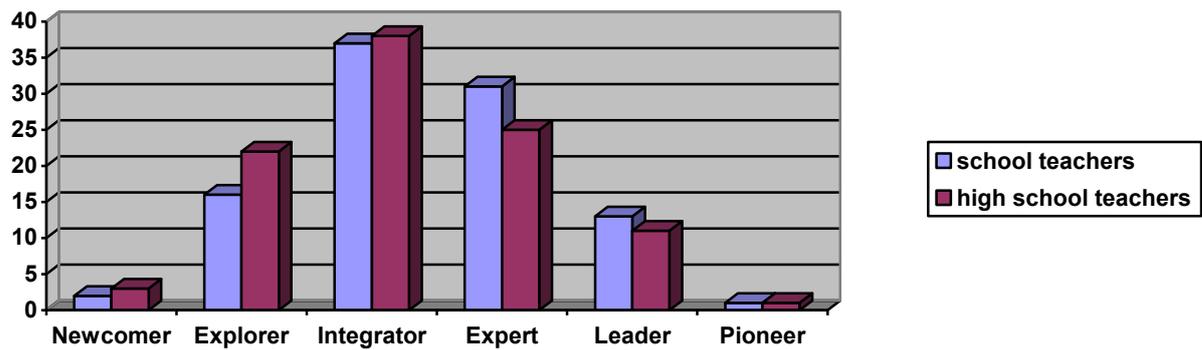


Figure 1 The Level of ICT-Competences Development

3. CONCLUSION

The advantages of distance learning over traditional one is to provide students with the opportunity to receive lifelong education. The DEE allows to organize asynchronous interaction between teachers and students, as well as active interaction in real time in the conditions of video conferences and webinars.

Effective distance learning is possible under condition of possession of ICT-competencies by all participants in the educational process. A study of data from NAFR has shown that most school teachers and university teachers demonstrate an average level of ICT-competences in their teaching activities. However, ICT-competencies that require additional development have been identified.

Today in Sverdlovsk region the Institute of regional development is engaged in the development of ICT-competencies of school teachers. The analysis of the announced retraining programs and the number of educational institutions involved in these programs showed that there is a number of unsolved problems regarding the development of ICT-competencies of teachers in the Sverdlovsk region.

Based on the European Digital Competence Framework and taking into account the general methodological principles of developing online courses, the authors of this study developed a map for designing an online course on the development of ICT-competencies of English teachers. The design map reflects the content of the European Digital Competence Framework in full, and also demonstrates the wide possibilities of online courses regarding asynchronous interaction of participants in the educational process and the use of DEE conditions for personal and professional development. The implementation of the developed online course will allow English teachers to use the DEE effectively in the process of teaching and research activities.

REFERENCES

- [1] Prikaz Ministerstva obrazovaniya i nauki RF ot 23 avgusta 2017 g. N 816 "Ob utverzhdenii Poryadka primeneniya organizacijami, osushhestvlyayushhimi obrazovatel`nyu deyatel`nost`, e`lektronного obucheniya, distancionny`x obrazovatel`ny`x tehnologij pri realizacii obrazovatel`ny`x programm" [E`lektronny`j resurs] <http://ivo.garant.ru/#/document/71770012/paragraph/1:0>
- [2] koncepciya sozdaniya i razvitiya edinoj sistemy` distancionnogo obrazovaniya v Rossii [E`lektronny`j resurs] <https://pandia.ru/text/78/302/22561.php> (data dostupa: 01.04.2020)
- [3] Xabibulina E.M. Distancionnoe obuchenie: osnovny`e terminy`, principy` i modeli [E`lektronny`j resurs] Rezhim dostupa: <https://nsportal.ru/vuz/pedagogicheskie-nauki/library/2011/12/07/distantsionnoe-obuchenieosnovnye-terminy-printsipy-i>
- [4] Frederick B. King, Michael F. Young, Kelly Drivere-Richmond, P. G. Schrader. Defining Distance Learning and Distance Education. https://www.researchgate.net/publication/228716418_Defining_distance_learning_and_distance_education
- [5] Kodzhaspirova G.M., Kodzhaspirov A.Yu. Pedagogicheskij slovar`: dlya studentov vy`ssh. i sred. ped. ucheb. zavedenij. M.: Izdatel`skij centr «Akademiya», 2000. S. 176.
- [6] Podlasy`j I.P. Pedagogika: ucheb. dlya studentov vy`sshix ped. ucheb. zavedenij. M.: Prosveshhenie: Gumanit. izd. centr VLADOS, 1996. S. 432.

- [7] [Slastenin V.A. Pedagogika: ucheb. dlya stud. vyssh. ucheb. zavedenij / V. A. Slastenin, I. F. Isaev, E. N. Shiyarov; pod red., V. A. Slastenina. 8-e izd., ster. M.: Izdatel'skij centr «Akademiya»; 2008. S. 576
- [8] Gryaznova E.V., Treushnikov I.A., Bobykina N.U, Afanasiev S.V. (2019). Remote Training: Problems of Conceptualization and Definitions. *Azimuth of Scientific Research: Pedagogy and Psychology*, 4 (29), 63-65.
- [9] P'yannikov M. M. K voprosu o ponyatiyah «distancionnoe obuchenie» i «distancionnoe obrazovanie» *Gumanitarnyj vektor* 2010 № 1.S.41-45.
- [10] Informacionny`e i kommunikacionny`e texnologii v distancionnom obrazovanii. *Specializirovannyj uchebnyj kurs*. — M.: Institut YuNESKO po informacionny`m texnologiyam v obrazovanii, 2006. — 632 s.
- [11] Kigan D.Dzh. Opredelenie ponyatiya «distancionnoe obuchenie». *Per. M. Yu. Buxarkinoj // Po izd. D.J. Keegan (1980). On Defining Distance Education. Distance Education*, 1(1), p. 13–26.
- [12] Polat E.S. Nekotory`e konceptual`ny`e polozheniya organizacii distancionnogo obucheniya inostrannomu yazy`ku na baze komp`yuternyx telekommunikacij // *Inostranny`e yazy`ki v shkole*. 1998. № 5. S. 6 – 11.
- [13] Elashkina N.V. Samostoyatel`naya poznavatel`naya deyatel`nost` obuchayushhegosya pri distancionnom obuchenii inostranny`m yazy`kam // *Filologiya. Istorija. Mezhdul`turnaya kommunikaciya, tezisy` dokladov regional`ny`x konferencij molody`x ucheny`x (Irkutsk, 26 fevralya 2003 g.)*. Irkutsk: IGLU, 2003. S. 33 – 34.
- [14] Andreev A.A., Soldatkin V.I. *Distancionnoe obuchenie: sushhnost`, texnologiya, organizaciya*. M.: Izd-vo ME`SI, 1999. S. 196.
- [15] *Pedagogicheskij e`nciklopedicheskij slovar` [Tekst] / gl. red. B.M. Bim-Bad*. - M.: Bol`shaya rossijskaya e`nciklopediya, 2002. - 528 s.
- [16] Polat E. S. *Theory and practice of distance learning / E. S. Polat*. - M., 2004
- [17] V. Slastenin. The quality of education as a socio-pedagogical phenomenon [Text] / V. A. Slastenin // *Pedagogical education and science*. - 2009. - No. 1. - S. 4-11.
- [18] Cambridge dictionary on-line <https://dictionary.cambridge.org/ru/%D1%81%D0%BB%D0%BE%D0%B2%D0%B0%D1%80%D1%8C/%D0%B0%D0%BD%D0%B3%D0%BB%D0%B8%D0%B9%D1%81%D0%BA%D0%B8%D0%B9/distance-learning>
- [19] Moore M.G. and Kersley G. *Distance education. A system View* Belmont: Wadsworth Publishing Company, 1996. - P. 219–222.
- [20] Polovinkina V.V. *Pedagogicheskaya model` organizacii distancionnogo obrazovaniya v vuze [Tekst] / V. V. Polovinkina: avtoref. dis... kand. ped. nauk: 13.00.01*. - Nizhnij Novgorod, 2010. - 19 s.
- [21] Holmberg B. *Theory and Practice of Distance Education*. London, Routledge, 1989. Mode of access: <http://www.londoninternational.ac.uk/distance-flexible-learning>
- [22] Perechen` poruchenij Predsedatelya Pravitel`stva Rossijskoj Federacii po itogam vstrechi s rektorami obrazovatel`ny`x organizacij vysshego obrazovaniya (Gorki, 4 iyulya 2018 goda)[E`lektronnyj resurs] http://fgosvo.ru/uploadfiles/PostPrav/Por_prav_rector.pdf (data obrashheniya 1.04.2020)
- [23] Federal`nyj proekt «Molody`e professionaly`» [E`lektronnyj resurs] <https://new.avo.ru/documents/33446/1306658/%D0%9C%D0%BE%D0%BB%D0%BE%D0%B4%D1%8B%D0%B5+%D0%BF%D1%80%D0%BE%D1%84%D0%B5%D1%81%D1%81%D0%B8%D0%BE%D0%BD%D0%B0%D0%BB%D1%8B.pdf/ff2a3886-6586-861c-c5d3-5d6332cfca96>
- [24] Federal`nyj proekt «Cifrovaya obrazovatel`naya sreda» [E`lektronnyj resurs] http://майскийуказ.рф/upload/iblock/b0d/TSifrovaya-obrazovatel'naya-sreda-_obnov.-red_.pdf
- [25] Nacional`nyj proekt «Obrazovanie» [E`lektronnyj resurs] <https://edu.gov.ru/national-project>
- [26] Sosnina // *Analiz tendencij razvitiya otkrytogo obrazovaniya v Rossii i Kanade // Otkrytoe obrazovanie*. 2018. T. 22. № 6. S. 65-72.
- [27] Prostova D.M., Tikhonova A.D., Sosnina N.G. *The Influence of Digital Technologies on the Development of Economic Subjects // Digital*

Economy: proceedings of the International Scientific and Practical Conference. (ISCDE 2019). – 2019. – Atlantis Press. – P.443-449.

[28] Zarovnyaeva V.I. (2019). Information Activity of the Teacher in the Digital Educational Environment. *Azimuth of Scientific Research: Pedagogy and Psychology*, 4 (29), 86-88.

[29] The Digital Competence Framework [E`lektronny`j resurs]. 2018. Data obnovleniya: 13.12.2018. URL: <https://ec.europa.eu/jrc/en/digcomp/digital-competence-framework> (data obrashheniya: 12.01.2019).

[30] Cifrovaya gramotnost` rossijskix pedagogov. Gotvnost` k ispol`zovaniyu cifrov`x texnologij v uchebnom processe./ Avtory`: T.A. Ajmaletdinov, L.R. Bajmuratova, O.A. Zajceva, G.R. Imaeva, L.V. Spiridonova. Analiticheskij centr NAFI. – M.: Izdatel`stvo NAFI, 2019. – 84 s.

[31] The Institute of Regional Education in the Sverdlovsk Region. Official Site. <http://elearn.irro.ru/>

[32] Dvoryadkina E.B., Efimova E.G. (2019). The spatial aspect of regional policy in the field of the vocational education system development. *Upravlenets – The Manager*, vol. 10, no. 6, pp. 28–41. DOI: 10.29141/2218-5003-2019-10-6-3.