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S. I. BUKHKALO, A. O. AGEICHEVA, O. I. KOMAROVA, L. V. BABASH**INTELLECTUAL PROPERTY PROTECTION IN DISTANCE EDUCATION SYSTEM**

Main aspects of intellectual property protection in the implementation of distance learning are studied. The relevance based on the need of implementation distance learning and the use of the opportunities offered by e-learning. The problem of the protection intellectual property in distance education. It is determined that technical means should provide a program of students' work on the content of the educational material (program of its learning process), a combination of training and education functions, strengthening the control and self-control of the process and its results of the process of learning knowledge, assistance in implementing the ideas of differential and problem learning.

Keywords: distance education; e-learning; information and communication technology training; adult life long education; intellectual property.

С. І. БУХКАЛО, А. О. АГЕЙЧЕВА, А. І. КОМАРОВА, Л. В. БАБАШ**ЗАХИСТ ІНТЕЛЕКТУАЛЬНОЇ ВЛАСНОСТІ В СИСТЕМІ ДИСТАНЦІЙНОЇ ОСВІТИ**

В роботі розглядаються головні аспекти захисту інтелектуальної власності при впровадженні дистанційного навчання. Актуальність роботи зумовлена необхідністю впровадження дистанційного навчання та використанням можливостей, які дає електронне навчання. Досліджено проблему необхідності захисту інтелектуальної власності в системі дистанційної освіти. Визначено, що технічними засобами має бути передбачена програма роботи студентів за змістом навчального матеріалу (програма його навчального процесу), поєднання функцій навчання та освіти, посилення контролю та самоконтролю процесу та його результатів процесу вивчення знань, допомоги у реалізації ідей диференційованого та проблемного навчання.

Ключові слова: дистанційна освіта; електронне навчання; інформаційно-комунікативні технології навчання; безперервна освіта дорослих; інтелектуальна власність.

С. И. БУХКАЛО, А. О. АГЕЙЧЕВА, А. И. КОМАРОВА, Л. В. БАБАШ**ЗАЩИТА ИНТЕЛЛЕКТУАЛЬНОЙ СОБСТВЕННОСТИ В СИСТЕМЕ ДИСТАНЦИОННОГО ОБРАЗОВАНИЯ**

В работе рассматриваются основные аспекты защиты интеллектуальной собственности при внедрении дистанционного обучения. Актуальность работы обусловлена необходимостью внедрения дистанционного обучения и использованием возможностей, которые дает электронное обучение. Исследована проблема необходимости защиты интеллектуальной собственности в системе дистанционного образования. Установлено, что технические средства должны обеспечивать программу работы студентов по содержанию учебного материала (программа его учебного процесса), сочетание функций обучения и образования, укрепление контроля и самоконтроля процесса и его результатов процесса обучения знаниям, помощи в реализации идей дифференциального и проблемного обучения.

Ключевые слова: дистанционное образование; электронное обучение; информационно-коммуникативные технологии обучения; непрерывное образование взрослых; интеллектуальная собственность.

Introduction. The main factors in the organization of student training, for example, in complex innovative projects, are the updating of their components intellectual property objects and distance education [1–5]. It does not exclude the creation and constant updating of electronic courses of intellectual property in the system of distance education, the development of didactic fundamentals of distance learning, tutors training.

Teachers are assigned functions such as coordinating the cognitive process; correction of courses both basic and related; counseling in the preparation of an individual curriculum, management of educational projects, etc. At the initial stage, the teacher manages mutual assistance learning groups, assists students in their professional self-determination and development, for example, to identify literature on selected objects of intellectual property for integrated technologies [7–13].

Problem research. The main principles of constructing distance learning in an educational institution are the unified methodological basis, the decentralization of the creation and management

of distance education, the most favored mode, the complexity, accessibility, modularity.

Distance learning is also based on some important principles: the principle of interactivity [1–4], the principle of starting knowledge [5–8], the principle of individualization [11], the principle of identification [9, 10, 12, 13], the principle of regulatory training, the principle of pedagogical feasibility using new information technologies.

Distance learning has many advantages both social and economic. As in the case of corporate learning, economics is a major driving force, since it easily determines economies and economic justification. Distant education also has many benefits to society, although they are more difficult to quantify. Despite the huge number of educational institutions in the world, the demand for the educational services market is still higher than the supply. Distance education creates equal opportunities for those who wish to study, improve their qualifications, undergo retraining and find work.

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This system enables to get higher education in parallel with the basic human activities, expands the ability to study abroad, obtaining degrees recognized by the international educational community.

Distant education provides a wider perspective in choosing a higher education. The basis of the educational process in distance learning is focused and controlled intensive independent work of the student, who learns on an individual schedule in a convenient for him tempo.

Of course, the level of education and access to education through communication technology varies depending on the economic development of a single country.

Systematization and analysis of existing workshops and methods for ensuring the quality of distance learning provide the necessary basis for scientific advancements.

Statement of the problem in general and its connection with important scientific or practical tasks.

The study of current IP policy in research universities in relation to online distance learning materials is a very important aspect of the research. The dissemination of distance learning convinces teachers, administrators and institutions that institutional policies must protect and maintain an environment that encourages creativity, productivity, and academic freedom. It provides the foundation for analyzing, criticizing and further developing consistent copyright and intellectual property rights associated with distance learning materials.

Investigation of the security of information resources of this study represents a great scientific and

applied interest. In the implementation of the distance learning system, there are problems with the protection of the intellectual property of the training courses, control of student knowledge, and confirmation of the authority of the remote client.

With the development of information technology, more and more attention is paid to research in the field of distance learning [14–16]. The above problems are caused by large losses from the leakage of information provided by the authors of the training courses, the loss of credibility in the control and accounting positions, as well as the ability to substitute the results of distance learning by students. The security of information in the system of distance learning affects many aspects of functioning, often being the main factor in its existence and development. To successfully solve the above problems, it is necessary to determine the necessary and sufficient level of protection of information resources. As the criteria for the necessity and security measure adequacy, criticism, value of information resources of the distance education system, and, accordingly, actual tasks are the development of methods for assessing the value, criticality and security of information resources of the distance learning system.

An important factor in the development of intellectual property in the system of distance education is to determine the levels of legal protection for them. For example, the levels of legal protection (Table 1) the objects of intellectual (industrial, technical and technological) property can be defined as: individual private, production service, state and transnational.

Table 1 Intellectual property objects legal protection levels

Individual private	Production service	State	Transnational
Own publications	Production standards	License	Foreign patent
Models	Specifications of the enterprise	State patents	Conventions
Certificates of activity type	Technical documentation	Laws	Transnational Contracts
Certificates of quality	Corporate publications	Standard Acts	Others
Work of authorship	Agreement, contract	Contracts	
Others	State standards	Certificates of quality	

It should be noted the following possibilities of classification and identification of intellectual property for students' competence innovative innovations at higher educational institutions:

1) The basis of copyright is the concept to determine the original result of creative activity, available in some form of objective;

2) Compatible rights are a group of exclusive rights, formed on the basis of a model of copyright for types of activities that are not sufficiently creative to disseminate their results to copyright;

3) Patent law is the order of inventions, utility models, industrial designs and breeding achievements protection through the issuance of patents;

4) The rights to individualization mean a group of objects of intellectual property, the rights which unite into one legal institution the protection of marketing indications: trademarks, trade names, the name of the place and origin of goods;

5) The right to production secrets (know-how) is information of any nature, for example, original technology or technical solutions, knowledge, skills and others that are protected by the regime of commercial secrets and may be the subject of sale or used to achieve a competitive advantages over other subjects of entrepreneurial activity;

6) Protection of new varieties is a system of legal norms governing the copyright for new varieties of plants brought out by breeders.

Researchers argue that the transfer of copyrighted material is illegal, even if there was no personal benefit to the seller [17].

Studying current policies in the field of intellectual property at universities in relation to online materials is a very important aspect of the study. The dissemination of distance learning convinces teachers, administrators and institutions that institutional policies must protect and maintain an environment that encourages creativity,

productivity, and academic freedom. It provides the foundation for analyzing, criticizing and further developing consistent copyright and intellectual property rights associated with distance learning materials.

Main research material statement.

The number of online courses is increasing in higher education institutions. The increasing use of online courses raises issues of ownership of course materials and increases the tension between teachers and universities regarding the rights and responsibilities associated with online courses. Electronic means are protected from piracy, but this does not apply to information that is posted on the Internet. After all, this information, especially concerning science, education, refers to intellectual property. At present, the vast majority of distance learning courses are closed, only demo versions are shown, for which it is sometimes impossible to judge their quality. Open courses, articles, and books are explicitly used without any references. There is no quick solution to this problem, but it is necessary to solve it, because the distribution of educational and educational information in the world's network space, the quality of the educational products being created and used is directly dependent on it. These problems are mainly related to the pedagogical side of distance learning. Of course, there are other issues related, for example, with the need for a systematic upgrade of the hardware park, software, respectively, consistently improving the level of proficiency in the user's personal computer teachers. A typical justification for such an approach, the use of intellectual property means that teachers are not authors of works created with the resources of the university.

With the introduction of distance learning through digital delivery facilities such as training, e-mail and other Internet technologies, intellectual property rights violations have spread.

As soon as copyrighted material is recorded in a material format such as a manuscript or electronic file, it automatically becomes protected. Nevertheless, registration with the Copyright Registration Office provides additional protection in case of violation and is often in the interests of the author, if the violation becomes a problem. Copyrighted works may be reproduced, adapted for the creation of derivative works, distributed and executed by other authors. The latter may also transfer rights to others. If copyrighted material is reproduced without the consent of the owner, the offender may be held responsible for copyright infringement. Such an example of copyright infringement is the use of software and multimedia materials. Materials such as ideas, facts, and discoveries are not covered by copyright, since they are not recorded in material form.

If there is no written agreement granting the right of ownership to a teacher, then upon dismissal, the property rights may remain with the employer. Under the terms of employment, the right of ownership moves from the original owner to the employer, which in turn changes the term of the copyright from 50 years in the case of

individual ownership for 75 years with the organizational rights of ownership. This corresponds to a change in defense that the university's policy defines them as traditional scholarly work [18].

Intellectual property issues relating to software and other electronic materials are more complex with the increasing number of online courses and programs at the universities and the increasing use of technology faculty to administer their courses. It should be borne in mind that in the past, traditional scholarly work was not the main source of income for the university. The emergence and development of digital formats, such as courses and programs, may affect the right of universities to define traditional scholarly work by future policy of educational institutions [19].

As part of distance learning, some institutions and teachers solve the problem of authorship of digital personal materials. One problem is that the materials advanced digital course content often use a significant amount of organizational resources such as design, location on the server management and maintenance, specialized software and other costs associated with infrastructure.

Teachers spend a lot of time and effort and want to be recognized accordingly to help finance and develop their future research and publications.

One element that complicates the process is that materials developed by instructors with institutional resources can be easily transmitted through the media and quickly disseminated among large audiences.

Undoubtedly, online learning will in no way be a substitute for traditional teaching. It is unable to create a student atmosphere and to replace communication with a living teacher. With the help of distance education, residents of small cities have the opportunity to pass and successfully complete the courses of metropolitan universities and academies. With the help of distance learning, it is possible to strike a balance between the public demand for education and its offer.

All educational institutions that use information and communication technologies are in fact out of the legal field. It should be noted that today for the development of the system of distance education practically there is no regulatory and legal basis.

In higher educational institutions and other organizations, electronic textbooks and libraries of them, information and educational environments are gradually being created, but there are no legal bases for the use of these materials placed on the network. For the effective work of educational institutions using remote learning technologies, coordination of their activities is necessary, as well as the creation of a relevant regulatory framework and the provision of distance learning for official status.

The regulatory framework of distance education should be formed in the form of a package of national acts on the organization of legal regulation of relations between objects and subjects in the field of distance education, taking into account the uniform requirements defined by the Ministry of Education and Science.

The following principles should be based: accounting of constitutional norms, openness and availability of information, protection of intellectual property rights, information security, coherence of norms with acts of other branches of legislation, as well as with international law. If the distance education system has a regulatory framework, it will become one of the official forms of education. It is determined that technical means should provide a program of students' work on the content of the educational material (program of its learning process), a combination of training and education functions, strengthening the control and self-control of the process and its results of the process of learning knowledge, assistance in implementing the ideas of differential and problem learning. However, it should be noted that today, speaking about distance education and solving the problems of its introduction into practice, leading Swedish scientists pay much attention to the main aspects of information exchange as a basis of advanced education, oriented to the existence of a person in the information society [20].

Educational process in distance learning is focused and controlled intensive independent work of the student, who learns on an individual schedule in a convenient for him tempo. Intellectual property is a term that encompasses many different forms of creative work. It includes the primary fields of copyright, patent, and trademark law, as well as incorporating trade secrets, unfair competition, and other subspecialties of the law. Generally, intellectual property covers the principle rights governing the ownership and disposition of an individual's creativity.

Conclusions and prospects for further research into the problem. The priority of the development of education is the introduction of modern information and communication technologies, which provide improvement of the educational process, accessibility

and efficiency of education, preparation of the young generation for life in the information society.

Possibility of distance learning is the ability to most adequately and flexibly respond to the educational needs of society and ensure the implementation of the constitutional right to education of every citizen of the country. That is why the concept seeks to complete distance learning. Prospects for further study may be related to study characteristics of distance education, comparing domestic and foreign distance learning technologies, development of new forms and methods of distance education. At this stage of development distance education is heavily in the education sector, due to the many benefits of this educational system. Moreover, some experts believe such education is the most effective form of training persons, regardless of their age. Based on modern media learning tools in conjunction with the information and communication technologies and modern methodological support allow to master the training activities, creating the conditions for independent mastering academic subjects. Distance learning is characterized by high professionalism, desire for cooperation, and self-development, which is essentially the result of the use of computer-based training and modern means of communication.

Overall, the hardware must provide a program for students over the content of the training material (program process of its assimilation), combining the functions of training and education, enhance the ability to control and self-control over the process and the results of the process of learning, to assist in the implementation of the ideas of differential and problem-based learning. Also characteristic of the education is the presence of a significant number of publicly funded further education, courses retraining, adult schools and educational groups.

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