

Education Quality Problems in Using Distance Learning Technologies

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Abstract. The article deals with the process in distance learning in the Republic of Kazakhstan, as one of the main parameters for introducing digital literacy development at the tertiary level. Buketov Karaganda University has been taken as the research site for data collection and analysis of quality distance learning. The authors have revealed the devices used by students in distance learning, the amount of available educational materials, the positive aspects of online teaching. At the same time, the paper aims at identifying the problems of distance learning in Higher Education Institutions (HEIs), electronic library resources. The analysis proved the effectiveness of distance learning at the university. It suggests some assumptions on the improvement of distance learning and education technology based on the survey results among students and teaching staff. It is believed that the development of distance education and their technologies will enable HEIs to meet students' demands and rights to quality education. It will allow anyone to receive bachelor degree and professional engagement simultaneously.

Keywords: education, distance education, educational resources, platforms, problems of distance education.

Introduction

The governments of many foreign countries have declared distance education as a priority area and regularly invest to its development. Many believe that distance education is simply a new form of distance learning that we know. To some extent, it is true: a person can study without leaving home. But there is a single condition: if a learner has a modern computer equipped with a standard program. Within this type of learning modern devices and technologies are inseparable. And a student with no difference in geographical location can study in any Western university without leaving motherland. Education is becoming open and accessible to all. It is ahead of political and economic processes.

Distance learning is an educational process in which the teacher and the student are separated by time and distance, or both. In practice, three types of distance learning are most common: synchronous, asynchronous and blended [1].

One of the main parameters of implementing distance learning is digital literacy. Digital literacy and digital didactics always serve as the basis for developing new learning models and improving the quality of learning. This direction is considered in the works of Zhi-Jiang Liu, Francesc M. Esteve-Mon, etc. [2, 3].

What is distance learning? There are many definitions, but here is the most successful one, «Distance learning is understood as a set of educational services provided to the main population in the country and abroad with the help of specific information and edu-

cational environment based on means of exchanging information at a distance (satellite TV, radio, computer communications, etc.)». In the idea of distance education, it is the transition from «students' activities towards knowledge» to «the knowledge movements towards students» in both forms (full-time and part-time) of education. Initially, distance learning was widely popular as an additional type of learning to improve professional skills to people with a bachelor degree. The simplest form was the series of television programs widely viewed ten years ago. The entire broadcasting TV channel worked for transmitting educational programs. Now, with the advent of more powerful technology, the possibilities of this type of learning are expanding. In world practice, a certificate is necessarily issued for all distance education courses, which is almost impossible to counterfeit.

The aim of the research is to determine the practical and methodological foundations for improving the quality of distance learning, as well as to realize their practical implementation in the educational process.

The subject of our research is to identify the difficulties and problems in the implementing distance education. In the course of our research, sources on this topic were analyzed. The experience of other scientists from different countries was studied, namely the formation and implementation of distance learning.

What is a distance education program? It is delivered to students in the form of a certain amount of

knowledge on a packed file. After studying the educational material, the student has a test – a program provides with check-knowledge questions. Based on the student's test results, she is asked to move to the next level or is informed that a careful study is needed. In natural sciences, the questions of knowledge assessment are solved relatively simply, and the use of testing is quite justified, but in art and humanities, of course, a written is required. The experience of many universities suggests that control is best carried out in the form of full-time studies, similar to how it is carried out in the courses of our research.

Why distance education is so popular, apart from sitting at home and the opportunity to get a degree in different areas of qualifications? Dwelling on its features, first of all, it should be noted flexibility. Distance learning students generally do not attend regular classes in the form of lectures and seminars, but work at a convenient time, in a convenient place and at a usual pace. This is a great advantage for those who are unable or unwilling to change their daily routine. In addition, a certain educational level for applying is not requested, and everyone can study as much as they need to master the subject and gain credits. Distance education programs are based on a modular principle. Each individual course creates a holistic view of a specific subject. This makes it possible to form a curriculum from a set of independent courses-modules that meets individual or group (for example, for the personnel of a separate company) needs.

In recent years, e-learning has become an integral part of the educational process in universities and is used in all forms of education. The use of e-learning makes it possible to improve the quality of education through the use of rapidly growing world educational resources and due to the fact that when using elements of e-learning and distance learning technologies, the proportion of students' independent work in the material acquisition is increased. E-learning is becoming especially relevant in the context of the introducing the state educational standards of a new generation. Since it is recommended to reduce the volume of classroom work, to increase and expand the forms of students' independent work, where distance learning opens up new opportunities [4].

The average assessment of the world's educational systems shows that distance education costs half of the price of traditional forms of education. The experience of non-state distance education centers shows that their costs for training a specialist are about 60% of the costs for full-time education. The relatively low cost of training is ensured by a high concentration of material and its unification, an orientation towards a large number of students, and more efficient use of teaching space and technical devices.

The new role of the teacher should also be noted. The teacher is now responsible for coordinating the learning process, adjusting the curriculum, consulting on an individual curriculum design, managing training projects, etc. The teacher manages educa-

tional groups of mutual support, helps students in their career choice. Interaction between students and a teacher in the distance learning system involves message exchange by sending them to the addresses of correspondents through computer networks. This allows to analyze incoming information and respond to it at a convenient time for students. As for knowledge control in the new form of learning, exams, interviews, practical, coursework and design work, computer intelligent testing systems are remotely operated. It should be emphasized that the successful problem solution of quality control in distance education, its compliance with standards by creating a unified system of state testing is of fundamental importance. Academic recognition of courses, the possibility of implementing them in traditional HEIs.

When distance learning is considered along with the basic requirements, the question is raised about the possibilities of teaching particular disciplines. For example, U. Kosybayeva, M. Shayakhmetova, I. Utebayev, N. Syzdykova, Zh. Abishev, R. Orazbekova in the article «Multilingual programs in mathematics education: the case study of Kazakhstan» described on base of case-study teaching mathematics [5].

When it come to teaching informatics at a distance, scientists Serik, Karelkhan in a scientific article describe a comparative analysis of a parallel computing cluster using the matrix multiplication by a vector with large dimensions. The authors have described that creating a parallel computing cluster in educational setting will help in teaching the subject of parallel computing in universities, which are lack of hardware resources [6].

Today, concepts such as distance learning and e-learning are seen as the main keywords in the field of education. Along with these, there were some requirements for workers in these areas.

E-learning and distance learning are increasingly included in the practice of professional personnel training. New requirements for the quality of training of specialists and managers have appeared. Today, to the list of professional skills such qualities are added:

- ability to quickly adapt to changing market conditions;
- the ability to navigate the business processes occurring in the organization;
- the ability to cooperate with other people, sometimes geographically dispersed, including using the latest telecommunication means;
- the ability to think critically and make independent decisions [7].

The problem of the quality of education always shows its relevance. This problem can be viewed from the point of view of teaching disciplines, educational content, from the point of view of teaching aids, teaching methods, from the point of view of regulatory documents, the problem of online learning, etc.

Let's consider some of them.

Janelli M., Senior Manager of Online Teacher Education Programs at the American Museum of Natu-

ral History, explores three closely related aspects of e-learning: theory, practice, and research. An overview of the main theories that are used in the development of theoretical foundations and practical means of e-learning is presented: behaviorism, cognitivism, constructivism, digital media theory and active learning theory. The purpose of this review was to show how e-learning is similar to traditional learning models and how it differs from them. The following is a concrete example of e-learning, the Massive Open Online Course (MOOC) developed by the American Museum of Natural History in New York for the Coursera platform. This case study shows how learning theory becomes the foundation for creating MOOCs and how the MOOC platform serves as a laboratory for pedagogical design. In conclusion, the author provides examples of e-learning studies that demonstrate the importance of coordinating eLearning theory, online learning practice, and learning about the specifics of MOOC education [8].

Distance learning platforms have been analyzed in the works of the following scientists: Hands-On, S.M. Haggis, E.V. Shevchuk, A. Tussupova, B.Ch. Meskhi [9-13].

Research methodology

To clarify the problems in distance learning at HEIs:

- create a system of parameters;
- to define diagnostic methods for research of results;
- take into account the main methods of pedagogical diagnostics.

Discussion

The department for assessing and monitoring the quality of education at Buketov Karaganda university conducted a survey to analyze the effectiveness of distance learning among students and teachers.

2610 students took part in the survey, including the Kazakh department – 1976 people, the Russian department – 634 people; the teaching staff – 516 people, 89 of them in the Kazakh language, 427 people in

the Russian language.

Firstly, if to analyze the survey among students «on satisfaction level with distance learning».

The survey covered students of all courses. The quantitative indicator of respondents is shown in the figure (Figure 1).

Distance learning requires technical support (Internet connection, technical devices). Based on the analysis of the questionnaire, 92.2% of students have access to Internet resources, while 7.8% note the lack of access or difficulty in accessing the Internet (low speed, network problems, run out of mobile Internet, poor internet connection due to locations etc.) (Figure 2).

The main type of device that students use to work on educational platforms is a smartphone – 85.8%, then – laptops 57.8%, in the third place – a stationary computer – 18.5%, and only 4.8% of students use a tablet. It is important to emphasize what technical device the students apply to download assignments (Figure 3).

As a part of distance learning, the main materials are placed on the educational platform idl.ksu.kz. The students rated the quality and amount of accessible reference materials, 79% of students highly rate the educational content, 17.9% note that the materials are limited, only a small percentage of students (3.0%) note the lack of necessary materials on the platform (they use paper textbooks that recommended by teachers; use publicly available e-books, etc.) (Figure 4).

Assessing the positive aspects of distance learning, 47% of students noted a new experience of being technically engaged while learning, the presence of constant feedback 28.4%, the openness of the educational process 16.4%, while there are 8% of those who fail to see the positive aspects of distance learning, mainly due to the and platform malfunction (low speed of internet connection, the site freezing, etc.) (Figure 5).

Assessing the difficulties that the students might face in distance learning showed 47% of students successfully shifted to distance learning, 33% note the

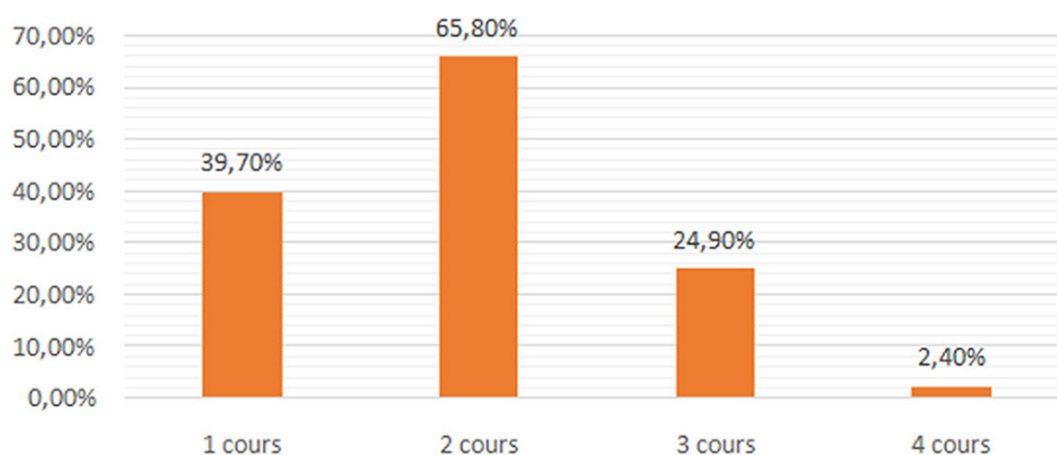


Figure 1 – Quantitative indicator of the respondents

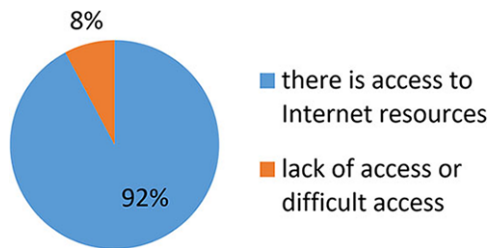


Figure 2 – Indicator of the availability of Internet resources for students

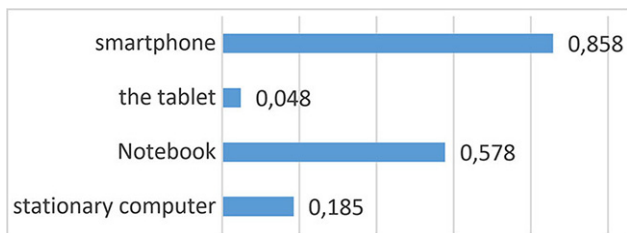


Figure 3 – Types of devices used by students in distance learning

lack of technical devices as the main difficulty. 6% say that there is an insufficient amount of reference materials. 14% of students related that with a big quantity of assignments, a negative impact on health («we have to constantly sit at the computer»), the site is overloaded, lack of traditional physical communication, etc. (Figure 6).

51.3% of students use electronic resources of Karaganda university library, 48.6% do not (Figure 7).

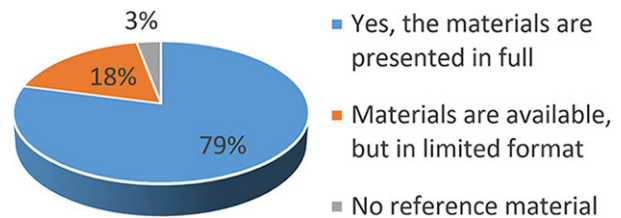


Figure 4 – Availability of reference materials

Results

37% of students note the high efficiency of distance learning at the university, 35%, as a recommendation for improving the distance learning process, suggest to improve the site function by designing a more convenient interface, expanding the formats for submitting assignments (not only PDF format). Configure the host ports of the site to prevent frequently occurring errors, the ability to edit materials on the site after they are sent to the teacher. 13% of students offer to create their own platform for conducting online lectures, or conduct classes on platforms where there is the possibility of recording broadcasts with the possibility of rehearsing the lesson. 7% of students offer to create video lectures and test questions for them for the possibility of self-assessment of the level of assimilation of materials and post them on the educational platform. 6% note the need to conduct some practical exercises related to the assimilation of specific practical skills, practices, in real communication through an online platform (zoom, etc.).

4% suggest increasing the volume of interactive tasks that can involve students in the educational process (prepare a video in micro groups, conduct an

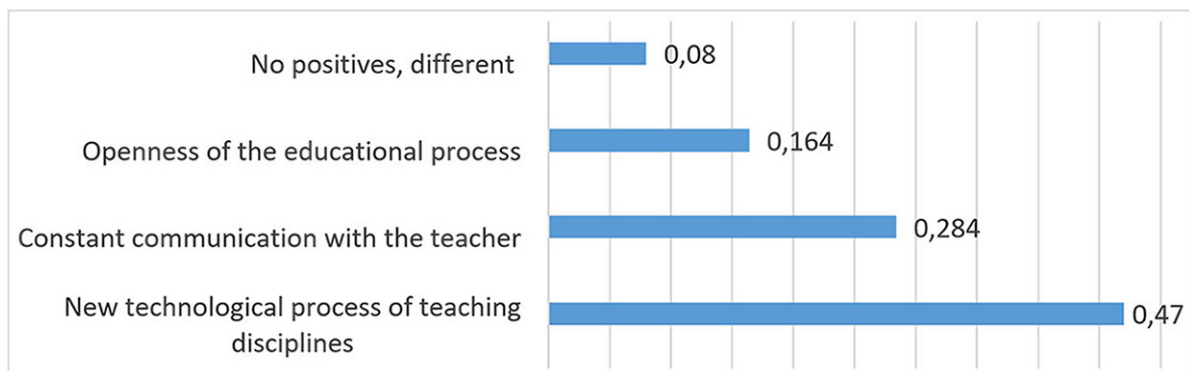


Figure 5 – Positive aspects of DL

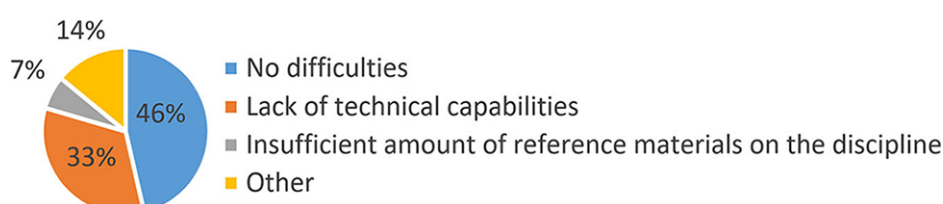


Figure 6 – Difficulties of DL

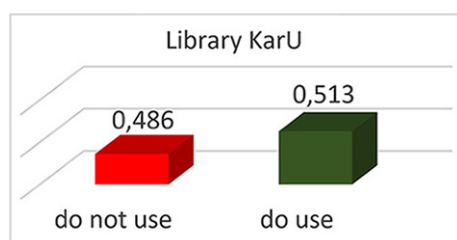


Figure 7 – Library attendance monitoring

online survey, etc.) and reduce the percentage of formal tasks (write an essay, prepare presentations, etc.). Thus, in general, students have a positive assessment of the implementation of DL at the university; to ensure efficiency, it is necessary to pay attention to the proposals of students, especially in the framework of educational materials and the use of educational platforms (Figure 8).

Results of the questionnaire survey of the teaching staff «Assessment of the level of implementation of distance educational services».

The qualitative composition of the interviewed teachers: professors 11.4%, associate professors 23.5%, senior teachers 46.6%, teachers 18.4% (Figure 9).

The overwhelming majority of teaching staff 99.9% have access to Internet resources, 0.1% do not have access (Figure 10).

The main devices used to enter educational platforms are laptops 80%, smartphones 60.2%, stationary computers 30.5% and tablets – 7.3% (Figure 11).

As difficulties in the process of implementing distance learning, teachers name the weakly developed technical capabilities (weakly Internet connection) 25.5%, the time limit available on the zoom platform 25.8%, significant time spent on developing courses 20.6%. Low student activity 15.3%.

Inability to fully conduct classes in highly specialized courses (a specialized laboratory is required) – 12.1%.

Less often than others are called difficulties associated with a lack of competence in the methodology of teaching disciplines using DOT 7% and insufficient computer literacy 2.8% (Figure 12).

As the necessary educational resources and platforms that ensure the quality of the educational process, teachers call Zoom – 50.3%, Coursera – 36.2%, Openedu, Moodle – 7%, idl.ksu.kz, ksu.kz – 7% (Figure 13).

Teachers consider the advantages of DL as the possibility of using modern teaching methods 76.8%, free posting of materials on the network 48.7%, the possibility of individual consultation 30%, individual learning rate 28.3%. A small percentage of faculty members, 5.6%, do not see the benefits of DL.

Only 2.4% of the teaching staff have pronounced positive aspects in relation to theirself-education and motivation (Figure 14).

90.2% of the teaching staff use the resources of the electronic library Karaganda University (Figure 15).

As suggestions for improvement, the teaching staff notes the technical improvement of the site 47% (creating filters on the idl.ksu.kz website in the file manager tab), creating a custom application for conducting online lectures (like Zoom) 33%. Creation of advanced training courses for teaching staff on the creation of educational video content – 31%. Expansion of access to electronic resources of scientific orientation 15%. Consideration of the issue of flexible training schedule 13% (Figure 16).

Conclusions

Thus, in general, the teaching staff notes a high level of implementation of DL at the university, mobility, individual pace of learning, the possibility of using various resources are noted as positive aspects, while in order to improve the work, it is necessary to continue modernizing the DL website, develop its own platform for conducting webinars. Conduct training seminars for teaching staff to create educational video content, for students – to improve work with information resources.

All of the above analyzes were carried out based on the results of the questionnaire at the following link:

https://docs.google.com/forms/d/1BnE9QNAA-vd8Ag6xxLZogDcxOvTTaM5v_jqI0N8KwV_g/viewform?edit_requested=true

Distance education, as one of the forms of the

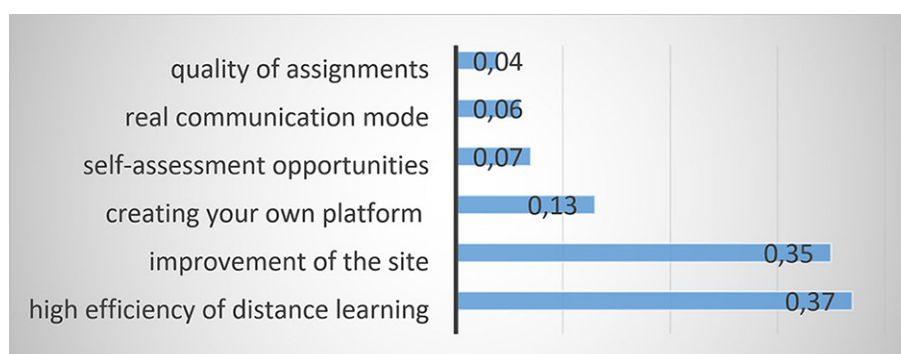


Figure 8 – Proposals for improving DL

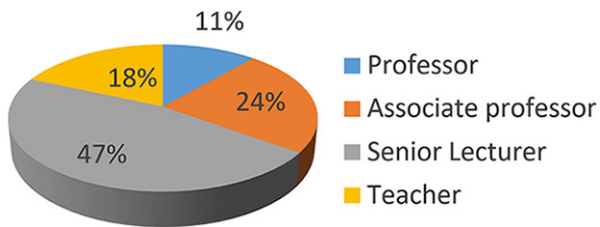


Figure 9 – Qualitative composition of teachers

continuous education system, is designed to realize the human rights to education and information. It will allow anyone who wants to receive basic or additional education in parallel with their professional activities.

Distance education was approved and introduced into the educational process of Buketov Karaganda University. One of the largest universities of the Republic of Kazakhstan, the university platform:

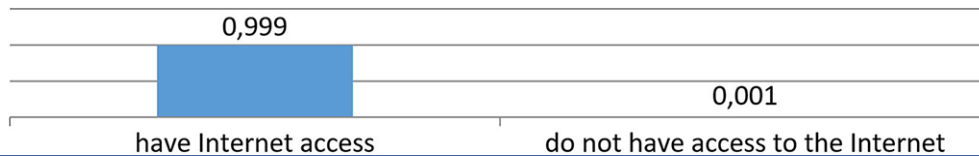


Figure 10 – Availability of the Internet resource

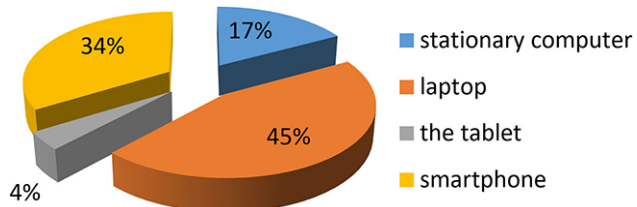


Figure 11 – Types of devices used to enter educational platforms

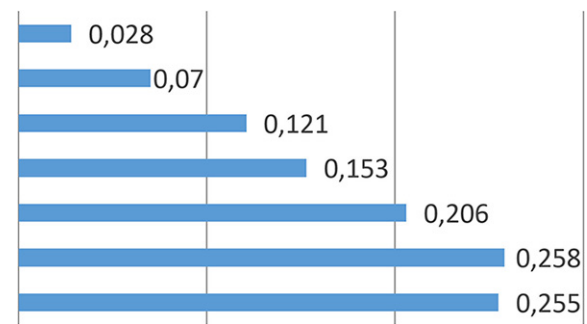


Figure 12 – Difficulties in the process of implementing DL

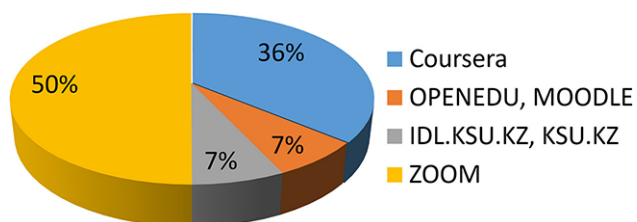


Figure 13 – Educational resources and platforms

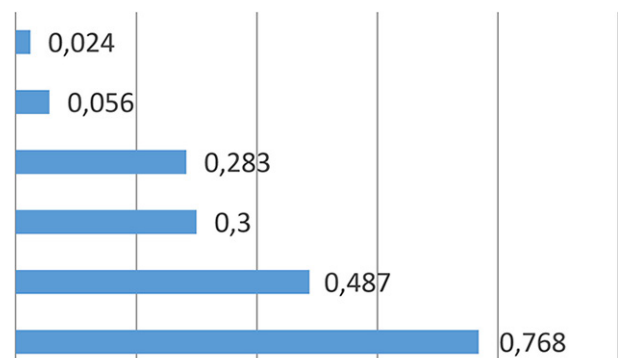


Figure 14 – Advantages of DL

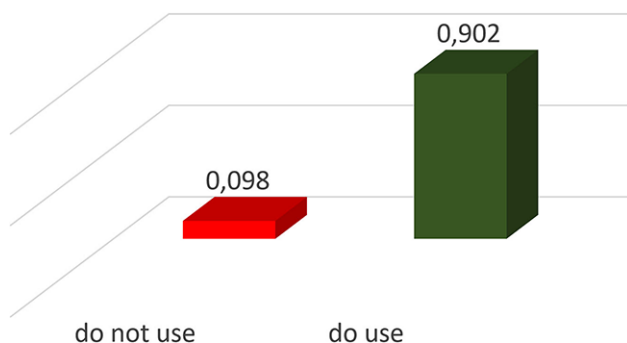


Figure 15 – Library Karaganda University

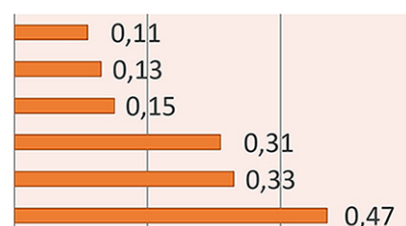


Figure 16 – Proposals for improving DL

- delivers courses and supply with educational and methodological manuals of particular disciplines;
- conducts individual classes or group lectures;

- post assignments, monitor students' task-responses and task achievements;
- evaluates the course accomplishment and etc.

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Қашықтықтан оқыту технологияларын қолданудағы білім сапасы мәселелері

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Аңдатпа. Қазақстан Республикасындағы қашықтықтан оқытудағы білім беру процесі туралы, қашықтықтан оқыту форматын енгізудің негізгі параметрлерінің бірі – цифрлық сауаттылық туралы толығымен сипатталады. Алғашқы жұмыс қалай жүргізілді, қазір академик Е.А. Бөкетов атындағы Қарағанды университетінің базасында студенттер мен оқытушылар арасында қашықтықтан оқытуды енгізудің тиімділігін талдау мақсатында қалай жүргізілуде екендігі айтылады. Авторлар студенттердің қашықтықтан оқытуда қолданатын құрылғылардың түрлерін, анықтамалық материалдардың қолжетімділігін, қашықтықтан оқытудың жағымды жақтарын сараптады. Сондай-ақ жоғары оқу орындарындағы онлайн оқыту мәселелеріне, кітапхананың электронды ресурстарына салыстырмалы талдау жасалған. Талдау университеттегі қашықтықтан оқытудың тиімділігін дәлелдейді. Мақалада авторлар университет студенттері мен профессорлық-оқытушылық құрамы арасында жүргізілген сауалнама нәтижелері бойынша қашықтықтан оқыту мен оқыту технологиясын жетілдіру бойынша қалыптасқан болжамдарды көрсетеді. Авторлар қашықтықтан білім беру мен оның технологияларын дамыту адамның білім мен ақпаратқа құқықтарын жақсырақ жүзеге асыруға мүмкіндік береді деп үміттенеді. Ол кәсіптік қызметімен қатар негізгі немесе қосымша білім алғысы келетін кез келген адамға мүмкіндік беретіндігін талдайды.

Кілт сөздер: білім, қашықтықтан оқыту, білім беру ресурстары, платформалар, қашықтықтан оқыту мәселелері.

Проблемы качества образования при использовании дистанционных образовательных технологий

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Аннотация. Подробно описаны образовательный процесс в дистанционном обучении в Республике Казахстан, и один из основных параметров внедрения дистанционного формата обучения – цифровая грамотность. Показано, как проводилась начальная работа и проводится сейчас на базе Карагандинского университета имени академика Е.А. Букетова, чтобы проанализировать эффективность внедрения дистанционного обучения среди студентов и преподавателей. Авторами проанализированы типы устройств, используемые студентами в дистанционном обучении, наличие справочных материалов, положительные стороны дистанционного обучения. Также описан сравнительный анализ проблем онлайн-обучения в высшем учебном заведении, электронные ресурсы библиотеки. В ходе анализа доказана эффективность дистанционного обучения в вузе. В статье авторы показывают сформированные предположения по усовершенствованию дистанционного обучения и технологии обучения по результатам опроса среди студентов и преподавательно-профессорского состава университета. Авторы надеются, что развитие дистанционного образования и его технологии позволят еще лучше реализовать права человека на образование и информацию. Это позволит любому желающему получать основное или дополнительное образование параллельно с профессиональной деятельностью.

Ключевые слова: образование, дистанционное обучение, образовательные ресурсы, платформы, проблемы дистанционного обучения.

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