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COMPARATIVE ASSESSMENT OF VARIOUS FORMS OF DISTANCE LEARNING

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Abstract. *The necessity of using distance learning technology in two disciplines: "Foreign language (English)" and "Occupational safety and health" for students of different faculties at National University of Life and Environmental Sciences of Ukraine has been established; comparative assessment of distance form of learning as students' additional self-study and complete distancing during forced quarantine has been substantiated; the results of training and quality monitoring of students' knowledge of different faculties have been presented; the efficacy of applying the e-learn courses on MOODLE 3 platform at the NULES of Ukraine has been proved; problems faced by teachers during remote work have been studied in the article. The article states that e-learning course is a major means of distance learning implementation in the process of two disciplines studying. The results of the experiment at the NULES of Ukraine demonstrate that using the MOODLE 3 platform improves students' disciplines mastering and ensures the main educational process requirements which have positive effects for both teachers and students.*

Key words: *online programs, modern telecommunications, information educational environment, educational process, scientific and substantive, methodological, structural and functional requirements, electronic courses, information technology, software and hardware architecture, e-educational cluster.*

Introduction. A new type of biological danger has posed a new global challenge to higher education in all countries – the need to ensure access to higher education, based on today's realities, because for any country the degree of its economic and technological development, society welfare is proportional to average knowledge, skills and abilities, qualifications of its active population [4].

Thus, **the purpose of research** is to establish the necessity of using distance learning technology in two disciplines: "Foreign language (English)" and "Occupational safety and health" for students of different faculties; to substantiate comparative assessment of students' distance learning as additional self-study and complete distancing during forced quarantine; to monitor the training and quality of students' knowledge of different faculties; to show the problems faced by teachers during remote work; demonstrate the efficacy of applying the e-learn courses on MOODLE 3 platform at the National University of Life and Environmental Sciences of Ukraine.

Methods. To solve these tasks, the analysis of scientific sources concerning distance learning and its features investigation has been applied. It has been used a large number of information sources, based on fundamental principles of foreign and national scientists on certain pedagogical techniques to improve students'

knowledge using distance learning technology.

Analysis of the latest studies and publications. Today, there are many approaches to the definition of "distance learning". This concept was formulated by such scientists as M. Thompson, M. Moore, A. Clark, and D. Keegan. Each of these scientists emphasized separate aspect of this method [5]. Distance Learning (Distance Education) is a form of organization of the educational process, the basis of which is the person's self-study. Distance learning involves the educational process, when the student studies independently according to the program developed by the teacher and away from him in space or time, but can have a dialogue with him by means of different types of telecommunications [4].

Results. Since middle March, we have awakened to different reality, which has changed the idea of gaining knowledge and assessing students' achievements. If we had been asked a few months ago if we, the teachers and our students, were ready for complete distance and remote work, the answer, certainly, would have been "No". Or, when asked about the effectiveness of such distance learning, our answer would also be "No". But the events of recent months have shown that distance learning, which uses online programs and creates informational educational environment with the help of modern telecommunications, is best suited to forced quarantine for all members of the educational process.

Distance education expands and renews the role of a teacher, makes him a mentor - consultant who must coordinate the cognitive process, constantly improve his courses, and this, in turn, encourages the search for new ways, tools and services.

Our experience on the educational platform MOODLE 3 is more than six years. Together with our colleagues of the NULES of Ukraine, having created and mastered e-learning resources, we have spent a lot of time on the compliance of our courses with modern criteria of scientific and substantive, methodological, structural and functional requirements. Therefore, the transition from classroom to distance learning was smooth and balanced.

For comparative assessment of different learning realities, data from students' studying of such disciplines as "Occupational Safety and Health" (elective discipline) and "Foreign language (English)" (normative discipline) in the first semester have been taken. Namely, Faculty of Pedagogics (specialty "Social pedagogy" (SP) – 3rd year of studying), Faculty of Information Technologies (specialty "Economic Cybernetics" (ECC) – 3rd year of studying), Law Faculty (specialty "Law" – 1st year of studying), Faculty of Economics (specialty "Entrepreneurship, trade and exchange activities" – 1st year of studying), Faculty of Food Technology and Product Quality Management – 4th year of studying, Faculty of Agricultural Management (specialty "Marketing" – 1st year of studying). In total, the results of 263 students were processed during the first semester. In the second semester 380 students were enrolled in the courses: Faculty of Economics (specialties "Economy (Economy of Enterprises)", "Accounting and Taxation", "Finance, Banking and Insurance" – 1st year of studying; Faculty of Forestry (2nd year of studying and 1st year (shortened term); Faculty of Information Technology (specialty "Computer Engineering" – 3rd year of studying, Educational and Scientific Institute of Energy, Automation and Energy Saving (specialty "Automation and Computer-Integrated Technologies" – 1st year of studying).

During the first semester of students' study on the educational and information platform (number of visits, deadlines) almost did not differ from the

students' achievements in the classroom. In each group, from the first classes, 25 % of students were prominent, who always were prepared for classes, did not miss any lectures or practical classes and, of course, passed everything on time in the e-course. Approximately 30 % were students who, to some extent, delayed the submission of their works, but, especially after reminders, performed the tasks. All other students became eager to study before the intermediate assessment, or the week before the session.

Of course, the material mastering by students of different courses is different. There is no noticeable difference between the specialties, but the training course is really matters. First-year students worked more actively and sent tasks on time. Therefore, even a week before the test session, 90 % of freshmen coped with the tasks. Third-year students, unfortunately, as mentioned above, started studying actively during the intermediate attestation (45 %) and before the session time (60 %).

In the second semester, students' performance of different faculties for comparative analysis has been also studied. The trend of success remains the same – first-year students show the best results, both with the deadlines and with the quality of papers performed. It should be noted that students' training, in general, is smooth, namely, the deadlines correspond to the established schedule, students' performance remain stable – 25 % – 28 % of students in each group show excellent knowledge, compliance with the tasks and elaboration of lecture material on this topic.

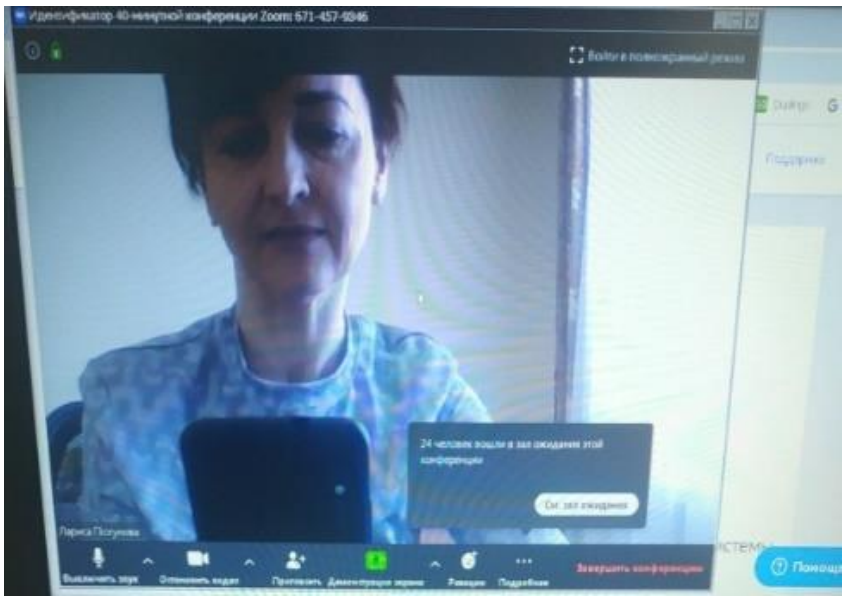
It should be noted that before the transition to full distance learning, we have studied for a month and a half and students have mastered three practical classes, listened to 3 lectures. Analysis of the obtained data of students' training of the specialty "Automation and Computer-Integrated Technologies" has shown that the students' activity has been significantly reduced during semester. It was this group of students who was introduced to the teacher and started studying only after the quarantine introduction. Therefore, in our opinion, one of the shortcomings of the distance learning, on the one hand, is students who do not have sufficient experience of independent work and voluntary self-regulation, the habit of group learning, and on the other hand, is insufficiently developed ability both of students and teachers to communicate at a distance and in this regard, the problem of communication barrier and the lack of psychological comfort of distance learning participants.

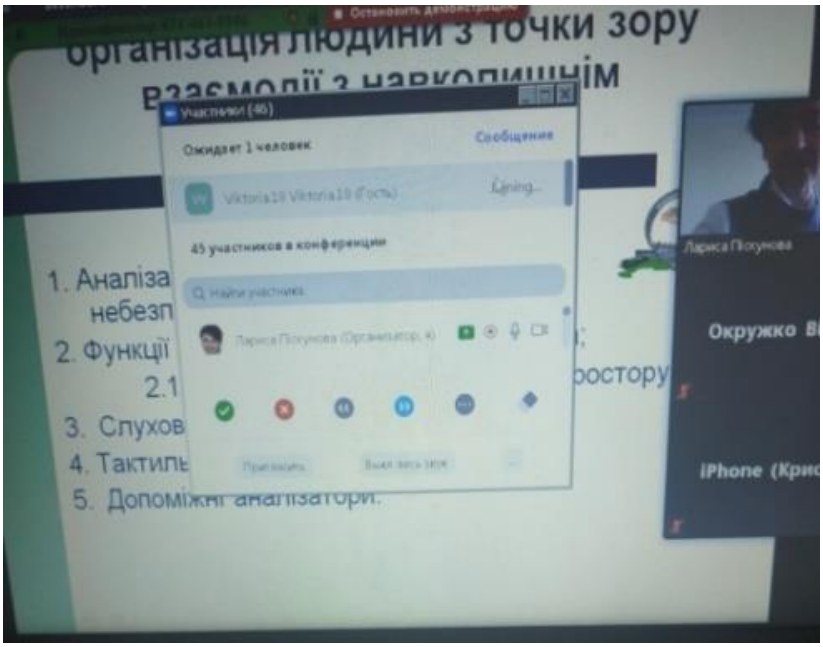
However, in the same situation, students majoring in Computer Engineering were trained. But it were the students of the 3rd year of studying and future professional orientation has played vital role – students of this specialty have much more experience working with the educational and information platform, so the reaction of process inclusion is much faster.

The next step in our research is to identify the shortcomings of full distance learning. At the beginning of distance learning, attention was immediately drawn to the difficulty for students to understand tasks, which led to an increase in the teachers' workload, as students often wrote, called, asking about certain tasks fulfillment. There is a doubt as to the teachers' competence, the compliance of the course with the criteria of scientific and substantive, methodological, structural and functional requirements. Perhaps, there are some drawbacks in the course development, which are of pedagogical nature?

When studying the questions asked by students, they paid attention to courses, specialties. Again, the number of students from each group is 25 % – 28 %, who sent their works without any

questions and delays. Thus, the professionalism issue of the compiled tasks disappears. No questions were received from the students of the third-year of studying. First-year students take the lead in terms of the number of questions asked. Probably, the principle that we called the "12th grade principle" works. First-year students are still at school, where the teaching material is presented, somewhat in a different way. This is also reflected in the increased activity of students after the video lectures. As the need for interactive distance learning classes leads to the search for new tools and services, we and our colleagues use the ZOOM cloud service. The ZOOM system allows video conferencing and webinars. ZOOM is easy to integrate with many modern technologies used in distance learning, including the MOODLE 3 platform (Fig. 1). Therefore, before quarantine, students worked on the educational platform, and during remote work it was very easy for them to adapt to video lectures, without any work changing algorithm.





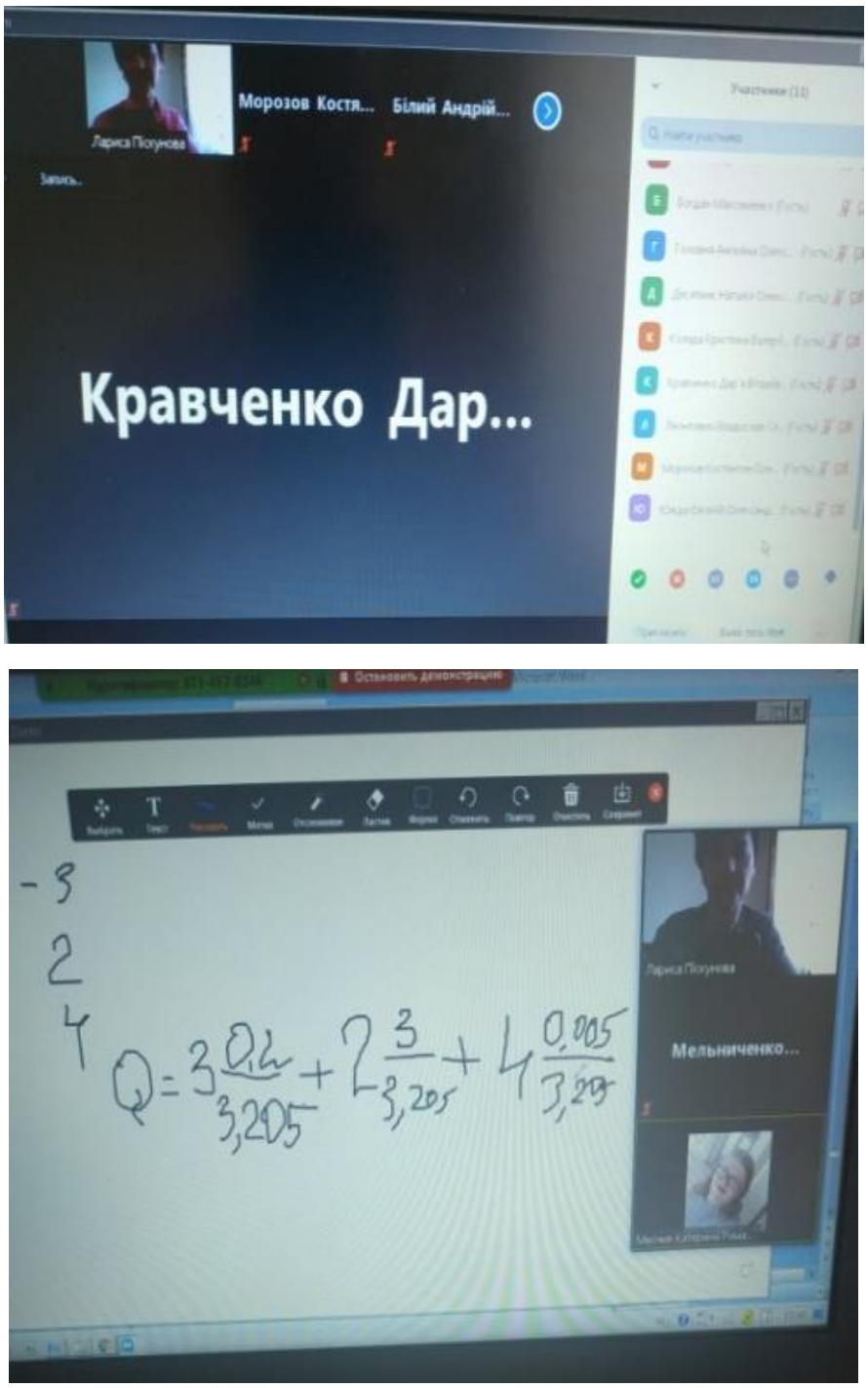


Fig. 1. Video lecture on the MOODLE 3 platform

It follows that in the first week after the quarantine introduction there was a low activity of students, not taking into account the "golden" 28% of students who continued to show their knowledge, despite external factors. After the first video lecture, the activity almost doubled. This is especially noticeable at the Faculty of Economics. There are three specialties at the Faculty of Economics in the first-year of studying in the second semester, namely, “Economy of Enterprise” – one group, “Accounting and Audit” – two groups, “Finance and Credit” – two groups. 99 students from the Faculty of Economics worked on the educational platform. The results of their studying have shown how the activity of

students increased after the video lecture and the low activity of students of “Economy of Enterprise” group, which, for some reasons, did not take part in the video lecture.

One of the many benefits of distance learning on the MOODLE 3 platform for teachers is the fast and simultaneous online dissemination of certain information to students. We publish messages on the course in the "News" section and, after 30 minutes, all registered students of the discipline can see the message. Therefore, students learned about all video lectures from "News". Of course, the time and day of the lecture were previously discussed with the group monitors. Under the quarantine, it was logical to schedule video lectures and webinars. It should be noted that the number of students who attended the lecture increased if for a day, or even for a few hours before a lecture, there was the teacher’s reminder to the group monitors, or messages in Viber groups, especially among the first-year students. This, once again, proves that if we want quality and quantitative work, students of the first year of studying need special attention and more time. Or you should try on students’ consciousness and independence, their strict self-discipline.

It is necessary to dwell on the drawbacks and some disadvantages of distance learning. It has been arisen the issue of appropriate hardware and software need, the ability to information access and distance learning tools use. Due to the Rector’s Order, the issue of compulsory e-learning course for each discipline is settled [2]. Our university has created all conditions for the development of both digital teachers’ competence and the creation of material and technical base for the IT implementation in management and research and educational activities [2]. In this aspect, the most important remains the issues of the personal computer and Internet access supply. In our opinion, this problem is too exaggerated. As for the personal computer or notebook, even if a student doesn’t have it (although this is practically an exception), each student has a phone and it is possible to be ready with the course tasks using a gadget. Of course, there are some inconveniences of learning by phone. Especially, when students pass tests for modules. But, in general, it is possible to work. There are problems with the Internet, this is noticeable during video lectures, but these problems are not long-term, any lesson can be postponed to other time. During two-month quarantine, 10 video lectures, 16 practical webinars were held and only one lecture was postponed. Therefore, separate students’ statements, namely, on papers not passed on time, or, in general, on lack of possibility of training online are no more than manipulation. We keep in touch with many groups in Viber, so how often students are online is very easy to check. As it has been mentioned above, students worked for a month and a half in classrooms. And it was those students who missed classes, who did not work on the platform and complained most about the lack of Internet telecommunications.

From our work results, we also wanted to focus on the introduction of full-fledged distance learning at the university, which is hampered by poor development of methodological, psychological and pedagogical features of distance learning, and very high requirements for "virtual" teacher.

In the distance learning system, the tutor plays a much bigger role than the teacher in standard form of education. He is directly involved in the development and adjustment of curricula, personally manages each of his students, because the difference in students’ knowledge level within one group can be significant.

An important quality of a tutor is the ability to conduct training consultations and have the skills of

psychological support of the student. Practical studying shows that a brilliant teacher in the classroom often cannot be a tutor in the distance learning system. Senior teachers have their own, well-established, sustainable (not bad) system of education, and distance learning requires them to change, adapt or radically revise their approaches.

Also, the problem of teachers of older age groups is the underestimation of distance learning opportunities. Most educators consider distance education, as well as distance learning, to be incomplete, as it is impossible to track a student's actions during a distance test or exam. It is very difficult to objectively assess the knowledge of a person who during the test or exam can use the Internet, training materials, third-party assistance. Although this problem can be solved, for example, by using a webcam, it is a significant inhibitory factor. In addition, an important problem is the reluctance of teachers to constantly monitor the latest distance learning technologies due to their large and often excessive workload.

Not all older teachers can handle the interface of modern computers that are oversaturated with management elements. It takes a long time to identify them and memorize the sequence of actions, which creates a certain amount of nervous tension. It's often a shame to admit to having a bad computer skills or not understanding what to do.

That's why our university, in the Regulations on "Accounting and planning of pedagogical workload" takes into account hours spent not only on creating and updating e-learning courses, but also their use in the students' training process. So, it is does not make any sense to talk about low motivation to develop distance learning courses and work for remote technologies. We have enough experience, more than six years of work with distance courses, so we want to note how many corrections and updates we had to make, based on distance learning realities. We emphasize that thanks to previous experience, it was possible not to change the pace and quality of teaching material. Of course, the combination of classroom work is not only difficult, but also takes a lot of personal time. Therefore, modern problems have shown a well-thought-out strategy of the university authority and a large amount of staff work of the Faculty of Information Technology, who are constantly improving the software and hardware architecture of the e-educational cluster of the university.

Discussion. When comparing the distance learning of students before quarantine and during complete distancing, it has been noted:

– qualitative and quantitative work of students was more smooth and organized;

– the activity of the first-years of studying students is higher;

– the result of distance learning depends on the students' independence, consciousness, and strict self-discipline;

– the presence of constant monitoring increases the distance learning quantitative assessment.

High qualification of teachers in distance learning is provided by a long-term well-thought-out strategy of the university and constant, continuous introduction of e-learning courses.

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ПОРІВНЯЛЬНА ОЦІНКА РІЗНИХ ФОРМ ДИСТАНЦІЙНОГО НАВЧАННЯ

Піскунова Л. Е., Качмарчик С. Г.

Анотація. *У статті наголошено на необхідності використання технології дистанційного навчання на прикладі двох навчальних дисциплінах, а саме: «Іноземна мова (англійська)» та «Безпека праці та життєдіяльності» для студентів різних факультетів Національного університету біоресурсів і природокористування України; обґрунтовано визначення дистанційної форми навчання як додаткового самостійного навчання студентів та повного дистанціювання під час вимушеного карантину; представлено результати навчання та моніторингу якості знань студентів різних факультетів; доведено ефективність застосування курсів електронного навчання на платформі MOODLE 3 в НУБіП України; виявлено проблеми, з якими стикаються викладачі під час дистанційної роботи. У дослідженні зазначено, що електронні курси є основним ефективним засобом впровадження дист анційного навчання у процес вивчення даних дисциплін. Результати експерименту в НУБіП України засвідчили, що використання курсів на платформі MOODLE 3 значно покращує володіння навчальними дисциплінами та задовольняє основні вимоги до навчального процесу, які мають позитивний ефект як для викладачів, так і для студентів.*

Ключові слова: *онлайн програми, сучасні телекомунікації, інформаційне освітнє середовище, освітній процес, науково-змістовні, методичні та структурно-функціональні вимоги, електронні курси, інформаційні технології, програмно-технічна архітектура, е-освітній кластер.*