IUDC 378.014.6:005.6:37.018.43]:615.15-051

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IMPROVEMENT OF LEARNING OUTCOMES IN EDUCATIONAL PROCESS OF INTERNS-PHARMACISTS USING DISTANCE LEARNING ELEMENTS

Abstract. The article discusses the issues of organizing the educational process of interns-pharmacists using the elements of distance learning at Vinnytsia National Pirogov Memorial Medical University (Ukraine). The authors have made the state analysis of the educational process providing at different stages. It is emphasized that communication between all participants of the educational process using distance learning elements is of great importance. The authors describe technical and technological peculiarities of the organization of the educational process, formation of the personnel structure, preparation of scientific methodical and didactic materials, organization of communication at the distant stage. The ways of increasing the effectiveness of the educational process are investigated, among them: the organization of the educational process in the form of three stages (organizational setting, distance, check-and-test) with observance of clearly established training schedule; formation of an individual educational trajectory of an intern with constant monitoring of educational achievements; organization of familiarization of interns with the peculiarities of using the distance learning platform tools at the first (full-time) stage of training; updating the content of materials for independent study, practical works and tests in accordance with changes in legislation and regulatory documents; drawing of tests subjects on separate modules to tests subjects of complex examination "Elex"; changing the timing of synchronous types of educational activities (chat-seminars, webinars, consultations) to more convenient one. It has been shown that distance learning has a significant advantage over other forms of learning due to the fact that every intern has the opportunity to study at individual pace, choosing convenient time and place for work. The analysis of the results of the interns' work on separate modules and types of educational activity has been carried out taking into account changes in the educational process. The outcomes of various forms of pedagogical control presented in the article permit to trace the correlation both by separate educational disciplines and in groups of interns in general.

Keywords: distance learning; interns-pharmacists; professional training; LMS E-Front.

1. INTRODUCTION

Rapid development of information technology is the basis for emergence of new educational practices and modernization of existing ones. Information technologies enable to update the learning material for interns-pharmacists, to increase the quantity of educational information as well as to diversify the ways of its delivery, to visualize volumetric models, etc.

Elements of distance learning (DL) used in internship training program give opportunity to realize the potentialities of information technologies, providing convenience of learning. Taking into account the peculiarities of perception of information by people with different types of perceptual modality [1, p.107-110], teachers can create appropriate educational content and place it on DL platform. It provides the opportunity for students to choose the desired pace of work, determine the time and place to study independently. Students can use all learning materials available on DL platform, which are necessary for successful completion of education. In this case, teachers do not limit listeners in choosing the sources of information, as each student has the opportunity to use any of them. For convenience, teachers can make such lists of reference links to recommended sources, most of them being posted in Internet and available through the link.

Taking the remote course interns have opportunity to communicate with each other and receive consultations from teachers using materials of delivery platform. Such communication contributes to improvement of learning outcomes.

Problem statement. Although there are many publications dealing with DL in the process of future doctors training, the problem of potential improvement of effectiveness of distance education elements in training interns-pharmacists requires further investigation.

Analysis of recent research and publications. There has been demonstrated increased interest in the problems of introduction of distance technologies into educational process. Scientific and pedagogical principles of distance learning were developed by Ukrainian scientists Yu. Bogachkov, V. Grytsenko, V. Kuharenko, V. Oliynyk, N. Syrotenko and others. Study of certain aspects in the problem of application of DL elements in training health care professionals has become the subject of academic interest for many scientists. In particular, O. Sanyk, N. Lytvynenko, M. Delva et al. (2016), studying the problem of DL introduction in training of modern doctors, state that "distance education is an important element of training in medicine." It enables to improve professional skills and competence of doctors at work, to shorten the period of full-time training. At the same time, they indicate preservation of quality of learning experience, increase of its availability and volume, reduction of costs [2].

L. Kucherenko, O. Portna, O. Khromiliova and Z. Moriak (2016) presented their view of this process, having analyzed the potentialities of DL in teaching pharmaceutical chemistry at Zaporizhzhya State Medical University (Ukraine). They state that introduction of modern technologies and distance learning forms into the process of education can provide adequate training of interns-pharmacists with subsequent quality assessment of students' learning experience [3, p.203].

I. Melnychuk, S. Yastremskaya (2016), studying the possibility and prospects of introduction of DL in the field of health service, stated that the use of Internet technologies, being essential in DL, is likely to increase the level of theoretical knowledge of students, it promotes development of practical skills by analyzing clinical observations within training groups. This makes modern education much more accessible to every medical professional that eventually will lead to considerable increase in quality of medical care in Ukraine [4, p.20].

At the same time, S. Yastremska (2017) believes that DL systems are economically profitable for the state, educational institutions and students themselves, as the use of high-quality curricula, materials, information resources by the wide range of students reduces the

cost of education; the possibility of intellectual and financial resources to be focused on the development of widely replicated high-quality learning materials and programs, thus leading to a high professional level those who have "undergone" the course of training, which is economically beneficial for the whole society; the absence of "walls" in open educational institutions leads to decreased expenses on maintaining buildings and hostels, as well as travel and accommodation expenses; the opportunity to combine professional activities and training, leading to an increase in the number of students who cannot or do not want to interrupt their professional activities and career [5].

Thus, according to the conclusions of scientists, introduction of DL at higher medical educational institutions is rather effective. However, some disadvantages of this method were determined by the researchers. V. Zhdan, M. Babanin, M. Tkachenko et al. (2017) believe that the main problems with introduction of distance learning are bad computer skills, reluctance to work without assistance. ... Distance learning requires self-education, and the presence at the lesson is not enough. At the same time they note that distance education at the postgraduate stage of training interns and doctors is an independent targeted work through the use of modern information technologies, its effectiveness depending on the methodologically structured teaching process and information and communication facilities of higher educational institution [6]. The authors' own experience in conducting educational process using distance learning partially confirm such conclusions, as most of interns are young people familiar with digital technologies.

A. Dienha, Yu. Koval, M. Konovalov (2016) [7] studied peculiarities of individual work of students in the course of distance learning, and defined it to be the principle activity. They believe its proper arrangement depends primarily on a student, and teaching the students strategy and tactics of independent decision making is possible using problem-based learning, educational discussions and solution of practical tasks containing a problem (analysis of specific situations during classroom activities) [7, p.106].

At the same time, as L. Minko (2017) notes, this form of activity gives doctors-interns the opportunity to acquire necessary knowledge independently, using modern information technologies, since DL requires a high level of professional and cognitive motivation, self-control and self-discipline. They must also strive for constant development and self-improvement of his professional development, which should be manifested in knowledge, skills and actions [8, p.301].

Communication between all participants of the educational process using DL elements is of great importance. N. Lysenko (2016) notes that in the system of distance education, it is the communicative component that has an invaluable role which is realized through such elements of the course as forums and chats [9, p.284].

The same point of view was expressed by O. Blagun, O. Gaidai and M. Balynska (2018) [10, p.14], focusing on the fact that the process of distance learning is convenient for both teacher and intern, and not only forum and chat can be chosen for communication, but also external messenger programs and e-mails. They emphasized that during the seminar, interns exerted active participation, critical thinking, substantiated their answers with certain arguments [10, p.14].

At the same time, one should remember the means of pedagogical control, which make it possible to determine the correspondence of acquired knowledge and skills with the requirements of state standards and specialist training programs. Thus, G. Davydenko, M. Nidzelskyi, V. Davydenko and N. Tsvetkova (2018), studying the quality of education and problems of its control at postgraduate stage of training, stressed on the necessity to separate the processes of control and assessment, and suggested their own closed algorithm of education quality control in postgraduate medical training: identification of a problem (detecting defects and drawbacks of education and its forms, etc.); observation (understanding

the roots of the problem); analysis (determining major causes); conducting actions to identify causes; verification (checking for the effectiveness of previous activity); integrating identified causes - standardization (constant effective removal of causes); summarizing the results of work (evaluation of activities and further management planning) [11, p. 64-65]. However, we believe this approach concerns predominantly the process of organizing and realization of teaching and learning activities.

More effective approach to realization of control and assessment in the training course of interns was offered by O. Smiyan, O. Romanyuk, Yu. Mozgova (2015). They stated that the following control methods of interns' independent work should be used at postgraduate education departments: analysis of Internet resource used by interns in learning process; on-line checking of learning outcomes (testing, control); checking the materials provided by interns on-line (discussions, presentations, analysis of case histories, treatment regimens, etc.) [12, p. 165-166].

V. Melnyk, V. Shevchenko (2018) emphasized the importance of integrated exam for interns-doctors as the criterion for assessment of interns' knowledge in postgraduate education. They noted that not only successful examination is of great significance, but also systematic preparation for it, which is a systemic controlled process that includes different forms of learning and staged intermediate control. Repeated training tests intensify interns' efforts in studying for the exam, increase learning efficiency, optimize the control and self-control systems. The main advantages of this system are: encouraging and motivation of interns to regular intensive work during professional training, increased volumes of medical information, increased requirements in preparation to a licensed integrated examination [13, p.163].

The works of V. Bykov [14], I. Vorotnikova and N. Zayerkova [15], A. Zablotskyi [16], P. Stefanenko [17], I. Vorotnikova and S. Yakubova [18], Ali, Nagia S. et al. [19], Glenda Cook et al. [20], Leslie A. Hamilton et al. [21], Kerry Wilbur [22] and others contributed much in solving the scientific task to improve teaching and learning process using the elements of distance education.

Nevertheless, most studies provide insight into the theory and practice of introducing distance learning technology in secondary and higher education, but the problem of introduction of DL into the system of training interns-pharmacists remains insufficiently studied.

The article is aimed to study the ways of improving learning outcomes of interns-pharmacists using the elements of distance learning.

2. METHODS

The curriculum for interns-pharmacists with the elements of distance learning was realized at the Department of Pharmacy at Vinnytsia National Pirogov Memorial Medical University (VNMU), Ukraine in accordance with the course schedule. During online training course, midterm modular control, chat-seminars and consultations were conducted, determining the training needs and correcting individual training path of the interns.

General evaluation of training results of interns-pharmacists was carried out at the final stage after assessment computer-based examination in specialty "General Pharmacy" using licensed program "Elex" and oral exam. The effectiveness of mastering course content was determined by anonymous questionnaire of the students.

The results of training two groups of interns-pharmacists (34 and 32 persons) were analyzed in the study. The groups were formed randomly (after submitting an application for internship) and included graduates of Ukrainian higher medical educational institutions who

had received the academic level "Specialist" in specialty "Pharmacy", the professional qualification level "Pharmacist".

The functions of learning process administration were performed by distance education system “E-Front”. “Big Blue Button system” was used to organize and conduct webinars. Both systems were introduced in educational process and now function on the basis of New Information Technologies Center of VNMU.

Scientific sources and research results related to the problems of distance learning at higher medical educational institutions were reviewed in the study. The analysis is composed of three parallel stages: study of literature and electronic publications; consulting with the experts (I. Vorotnikova (PhD, Senior Researcher at Research Laboratory of Experimental Pedagogy and Pedagogical Innovation of the Boris Grinchenko University of Postgraduate Pedagogical Education, https://scholar.google.ru/citations?hl=ru&user=vsM4aUYAAAAJ); S. Antoschuk (PhD, Associate Professor, Department of open educational systems and ICT, Central Institute of Postgraduate Pedagogical Education, https://scholar.google.ru/citations?hl=ru&user=UTXUPmMAAAAJ)); "snowballing" – review and analysis of publications from reference lists on the subject of research. The following research methods were used: observation, questioning, testing, analysis, synthesis, assessment, systematization and classification. Statistical processing of the obtained results was carried out using Student's t-test.

3. FINDINGS

The analysis of study results on using the elements of DL in realization of educational process demonstrated the following key aspects:

- development of different types of educational process support;
- organization of communication between the participants;
- realization of pedagogical control and assessment.

Arrangement of training interns-pharmacists using the elements of distance learning implied energetic efforts to create various types of support: material, information and communication, regulatory and methodological, organizational, didactic methods and staff assistance. For example, preparation of material support started in 2016 with the choice of appropriate server to install a distance learning platform. In addition, a number of personal computers were upgraded to provide proper work of lecturers.

A classroom with modern PCs and high-quality Internet connection was chosen where lessons were conducted to interns, acquainting them with the elements of distance education platform.

Distance learning platform was designed to meet the following requirements:

- to have simple settings and be easy to use by both lecturers and listeners;
- to have a multilingual interface (a number of interns speak mostly in English);
- to have means for delivering information from lecturer to intern, as well as for user feedback;
- to have the opportunity of identifying the participant of learning process by login-password, etc.

Taking into account the research results [23-28], E-Front LMS (Community) was selected and installed. The platform is supported with both stationary personal computers and laptops with Windows, MacOS, Linux operating systems, and mobile devices with IOS, Android operating systems, offering user-friendly interface. It is an integral Learning Management System having appropriate tools and capabilities. In particular, the platform distributes the level of access between system administrator, teacher and listener, enables

lecturer to place information for listeners in the form of texts, figures and videos, links to external resources, as well as to monitor their progress in studying course content. Feedback between teacher and student is realized through automated or semi-automated tests and practical works. Communication between the participants of teaching and learning process on the platform is provided through chats and forums, an internal mail system that enables sending of electronic mails to external email addresses. This LMS was chosen after the profound analysis given in the dissertation by one of the article authors (S. Poida, 2015) [28].

Next important stage in creating a system for training interns with the elements of distance learning was staff training. On a competitive basis representatives of the relevant departments were elected among those lecturers of the university who successfully completed the course in educational process organization for online training at Public Higher Educational Institution "Vinnytsia Academy for Continuous Learning " (Ukraine). The course included access to information and educational environment for student and teacher, mastering LMS tools that provide educational process with the use of the elements of this kind of training.

The acquired skills of work with LMS tools enabled the teachers to develop educational and methodical support of interns training with the elements of DL in a short period of time. Thus, the education course for interns-pharmacists consists of the following separate disciplines:

- Organization and economics of pharmacy;
- Management and marketing in pharmacy;
- Clinical Pharmacy;
- Pharmaceutical technology;
- Pharmaceutical analysis;
- Pharmacology;
- Pharmacognosy;
- Elements of practical psychology;
- Military special training.

Each module corresponds to academic course working program and curriculum. It has distinct structure and contains all necessary information for interns-pharmacists who undergo training. The advantage of using elements of distance learning is the possibility of quick correction and improvement of learning material content by teachers.

Practical works suggested that interns contribute to mastering of theoretical knowledge gained during training. For example, in one of the practical works on the module "Management and Marketing in Pharmacy", interns are offered to determine the advantages and disadvantages of a specific example of direct targeted advertising and advertising on the Internet of a certain drug, to evaluate the effectiveness of implementing marketing communications on a specific example and define correct sequence of actions of pharmaceutical company employee that plans logistics for the marketing of medicines.

Such practical works allow interns to acquire knowledge and skills, and teachers to evaluate their level. Besides, they enable to adjust individual educational learning path of every student. Evaluating the results of practical work, teachers make changes in theoretical materials of the course, provide specific consultations concerning the study of certain learning materials, thus contributing to improving academic performance.

Another kind of assessment using the elements of distance learning is testing. Module tests prepared by teachers make it possible not only to determine the level of theoretical knowledge, but also to offer the assistance to interns in mastering the learning material. In the process of preparation of didactic materials, the lowest level of passing the tests was set at 75% and the lowest level of passing practical works was set at 60%. Each module included

from 1 to 10 tests, and 1-5 practical works, depending on the complexity of the offered learning material.

Organization of communication between all participants of educational process is an important part of successful implementation of tasks facing interns in the process of advanced training. When creating communication channels the following capabilities of the LMS were used: chats, forums and message exchange using built-in e-mail system with the ability to send messages to external mailboxes. In addition, Webinars based on the Big Blue Button system were used, which made possible to conduct some lectures in real time mode.

Along with the activities carried on organization and implementation of the training program for interns-pharmacists using the elements of distance learning, lecturers of VNMU make efforts to increase the effectiveness of educational process. The analysis of anonymous questionnaire of interns-pharmacists trained using DL elements in 2017 made it possible to identify the following ways of increasing the effectiveness of educational process:

- organization of educational process in three stages (organization and regulation, distance, control and credit) with compliance to clearly established schedule of training;
- formation of individual educational learning path of an intern with constant monitoring of educational achievements;
- organization of acquainting interns with peculiarities of using LMS tools at the first (intramural) training stage;
- updating the training content for self-study, practical works and tests in accordance with changes in legislation and regulatory documents;
- making tests of separate modules similar to those of complex examination "Elex";
- making more convenient the time for conducting synchronous types of educational activities (chats-seminars, webinars, consultations).

Determining the directions for improving educational process has become the background for organizing work on its improvement. Thus, the educational process of interns suggests three stages:

1. Organization session, during which interns get acquainted with the staff, can register on LMS and review its tools, get information on the process of training in internship and taking final tests, etc.

2. Distance stage implies interns' self-study. They learn the proposed material, carry out practical work and pass module tests. During the distance stage, participants of educational process communicate actively with each other, using the tools of online learning platform, if necessary, receive teachers' consultations.

3. Testing and assessment stage, evaluation of interns' academic achievements and determining their correspondence to requirements of relevant educational standard and curriculum.

During educational process special attention is given to individual work with each intern. DL has a significant advantage over other forms of learning due to the fact that every intern has the opportunity to study at individual pace, choosing convenient time and place for work, thus forming an individual learning path. The academic schedule has an advisory character and defines the timeframe for studying every module (activity schedule of lecturers). However, students are allowed to look through other training modules, do practical works, pass tests. Lecturers who provide the education process on professional advancement using DL elements, have permanent contact with interns, can comment on the results of practical work, tests, and provide on-line consultations.

In order to give methodological support to interns, the methodologist of internship department traced academic performance of each intern using the reporting system of DL platform. Reports can be systemic and show the frequency of students' visits of LMS and

time spent to studying a module. Module reports give the methodologist information on the number of passed tests and performed practical works. Comparison of information from both reports makes it possible to understand the status of educational achievements of each intern. In particular, if interns have a fairly small amount of time spent in the system (several minutes), but more than 2/3 of the studied material is noted, then it becomes clear that they just "looked through" the training course. But if much time is spent by interns on studying a certain module and insignificant percentage of studied material suggests the presence of some problems with studying of the module, hence they may be offered a consultation. Besides, using reporting system, the methodologist can monitor the results of passing tests and practical works. Their absence initiates a procedure for raising the level of attention. Having identified the problem, the methodologist writes email to those interns, pointing to academic failure. He/she offers help in the form of consultation, providing contacts of lecturers of those disciplines with academic failure. If there is no answer to e-mail, the internship methodologist personally calls to every intern who has academic failure and takes measures to eliminate it.

Much work has also been done to update learning material placed on DL platform. Within two months, all lecturers involved in educational process reviewed learning materials for self-study and made changes to them, recorded new video lectures and updated existing ones. Some changes to practical works and tests were also made. In particular, the changes to practical works were related to issues most interesting for interns-pharmacists who already work as pharmacists. (State Program "Available drugs", "Insulin", etc.). In module tests the changes were made in accordance with the changes in regulatory acts, the number of test tasks was increased, primarily due to the tasks with question/answer tests. Such tasks provide an opportunity to demonstrate the individual abilities of students, develop logical and non-standard thinking, elicit their creative potential.

An important element of internship training is to establish communication among all participants of educational process. In the LMS "E-front", used in VNMU, the following tools for communication are available: built-in e-mail system with the ability to send messages to external mailboxes, each module can include forums and channels for organizing chats, there is also a system for organizing and conducting webinars. The use of such tools helps to increase educational activity of interns and effectiveness of their work.

The average results of interns' work according to the training modules and forms of educational activity are presented in order to compare and determine the effectiveness of the suggested changes. When organizing the educational process, 100-score grading scale was chosen as it is a standard scale for LMS “E-front”. Besides, it is a 100-score (percentage) scale that is used to assess the final comprehensive test "Elex". The results of practical works and tests are averaged into the groups.

Table 1

Comparative characteristics of the results of educational process by disciplines

Name of the training module	**Group 1 (n=34)**		**Group 2 (n=32)**		**Tests, p**	**Practical works, p**
	Tests	Practical works	Tests	Practical works		
Organization and economics of pharmacy	85,62±0,16	86,97±0,23	90,09±0,29	89,50±0,28	<0,05	<0,05
Management and marketing in pharmacy	64,65±0,17	70,3±0,14	83,94±0,33	80,32±0,19	<0,05	<0,05
Clinical Pharmacy	82,73±0,17	86,97±0,23	85,76±0,14	86,61±0,19	<0,05	>0,05

Pharmaceutical technology	75,28±0,21	76,57±0,18	89,70±0,24	82,92±0,14	<0,05	<0,05
Pharmaceutical analysis	86,97±0,19	86,59±0,17	86,93±0,18	85,83±0,14	>0,05	>0,05
Pharmacology	76,97±0,2	77,30±0,17	79,38±0,18	82,40±0,21	<0,05	<0,05
Pharmacognosy	80,30±0,19	73,94±0,22	84,50±0,19	80,90±0,18	<0,05	<0,05
Elements of practical Psychology	76,97±0,19	86,97±0,22	86,97±0,22	88,93±0,17	<0,05	<0,05
Military special training	75,10±0,17	79,15±0,17	80,23±0,19	82,20±0,28	<0,05	<0,05
Average value of academic performance by modules	78,28±2,11	80,53±2,04	85,27±1,17	84,40±1,07	<0,001	<0,001

p – probability value (significance level of the results)

Test results presented in Table 1 show statistically significant dynamics of changes between the first and second groups of interns-pharmacists, except for the discipline "Pharmaceutical analysis", where performance level in both groups was high enough - over 86%. The average difference between the results of the study by the types of work between the groups was 3.87 to 6.98% of positive growth. The same tendency was also observed in the results of practical works, ranging from 0 to 19.29% for individual modules. The exception is the discipline "Pharmaceutical Analysis", where the percentage of correct answers reached 85% and over. This suggests the improvement in mastering educational material by the second group of interns-pharmacists due to removal of disadvantages in organization of the curriculum and improving the quality of distance teaching of disciplines during the training interns-pharmacists of group 1.

The results of academic curriculum performance in the discipline received during the training correlate with the results of the exam in licensed program "Elex". The interns were offered the test containing 150 questions, chosen by the program randomly from general base in specialty "General Pharmacy". The correlation in values is observed both by separate educational sections (modules) and by the final results. The average score for the first group was 77.9, while it was 83.32 for the second group. (Table 2).

Table 2

Results of computer-based test using the program "Elex" by fields of study

Fields of study	Group 1 (n=34)	Group 2 (n=32)	p
Organization and economics of pharmacy	79,70±0,22	86,25±0,19	<0,05
Technology of medicines	77,35±0,18	82,18±0,16	<0,05
Pharmacology	78,38±0,15	83,28±0,23	<0,05
Industrial technology of medicine	76,18±0,17	81,56±0,24	<0,05
General assessment score	77,90±0,64	83,31±0,9	<0,05

Comparative diagram (Fig.1) demonstrates positive dynamics in study achievement level, including scores obtained during testing by the licensed program "Elex" between two groups.

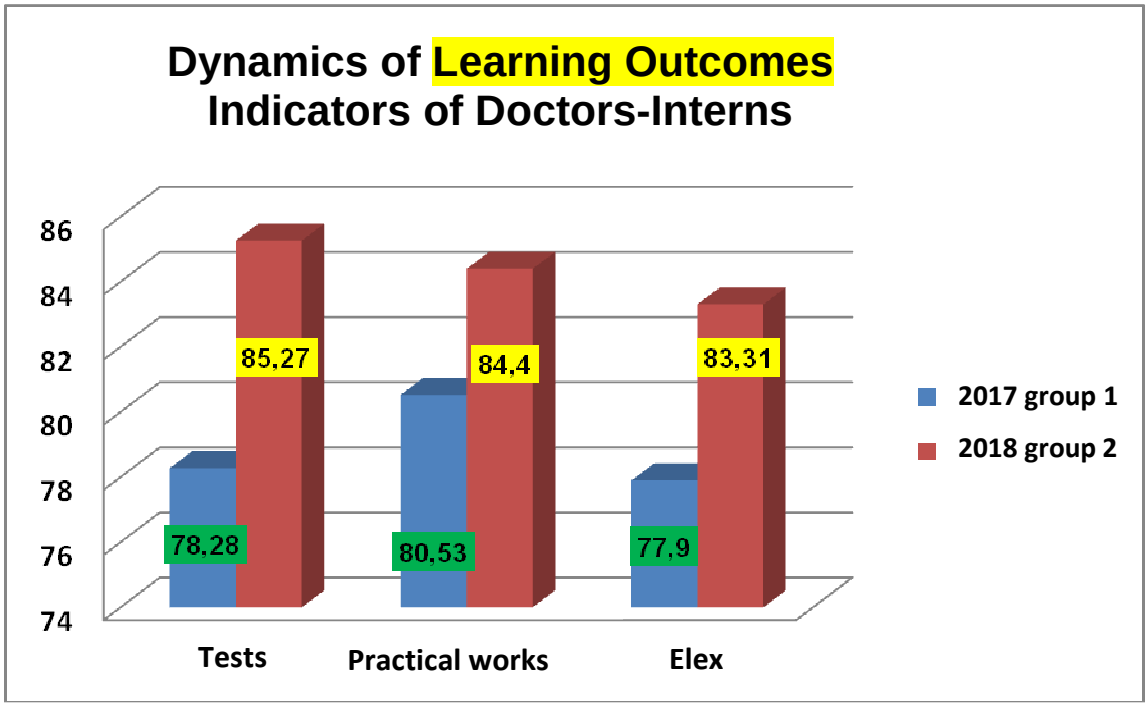

Fig. 1. Dynamics of learning outcomes indicators of doctors-interns

The data presented in Table 1, Table 2 and Figure 1 indicate that the results obtained during the educational process of advanced training by interns-pharmacists using the elements of the DL and the results of the tests using the licensed program "Elex" were similar.

Since the difference between the groups of the interns-pharmacists is due to the implementation of ways to increase the effectiveness of the educational process, given above, it can be confirmed that their effectiveness has been experimentally proved.

4. CONCLUSIONS AND PROSPECTS FOR FURTHER RESEARCH

Implementation of distance learning elements in the professional training of intern-pharmacists has a positive impact on the level of mastering learning material. It significantly affects the qualification level of future pharmacists. This form of organization of educational process enables to create high-quality communication and increase the level of convenience of students' training by means of free choice of timing and place of educational work, which contributed to achievement of sufficient level of educational results. The results of various forms of pedagogical control presented in the article give a possibility to trace the correlation both by separate educational disciplines and in groups of interns in general, and indicate an increase in the level of training. Statistical processing of the results confirms their significance.

The educational process has become more comfortable due to the implication of the distant learning elements. In its turn the comfortable educational conditions encourage improvement of learning outcomes.

The research paper material can be the basis for further development of postgraduate distant-learning for other medical specialties.

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Text of the article was accepted by Editorial Team 21.03.2019

ПІДВИЩЕННЯ РЕЗУЛЬТАТИВНОСТІ ОСВІТНЬОГО ПРОЦЕСУ ІНТЕРНІВ-ПРОВІЗОРІВ ІЗ ВИКОРИСТАННЯМ ЕЛЕМЕНТІВ ДИСТАНЦІЙНОГО НАВЧАННЯ

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Анотація. У статті розглянуто питання організації освітнього процесу інтернів-провізорів з використанням елементів дистанційного навчання у Вінницькому національному медичному університеті ім. М. І. Пирогова. Проведено аналіз стану освіти на різних етапів забезпечення навчального процесу. Акцентується увага на тому, що взаємодія між усіма учасниками освітнього процесу з використанням елементів дистанційної освіти має велике значення. Автори описують технічні та технологічні особливості організації освітнього процесу, формування кадрового складу, підготовки науково-методичних та дидактичних матеріалів, організації спілкування на дистанційному етапі. Досліджено шляхи підвищення результативності освітнього процесу, серед яких: організація освітнього процесу у вигляді трьох етапів (організаційно-настановному, дистанційному, контрольно-заліковому) із дотриманням чітко встановленого графіка навчання; формування індивідуальної навчальної траєкторії інтерна із постійним моніторингом навчальних досягнень; організація ознайомлення інтернів з особливостями використання інструментів платформи дистанційної освіти на першому (очному) етапі навчання; актуалізація змісту матеріалів для самостійного вивчення, практичних робіт та тестів у відповідності до змін у законодавстві та нормативних документах; наближення тематики тестів за окремими модулями до тематики тестів комплексного екзамену «Elex»; зміна часу проведення синхронних видів освітніх заходів (чати-семінари, вебінари, консультації) на більш зручний. Доведено, що дистанційне навчання має істотні переваги порівняно з іншими формами навчання, оскільки кожний інтерн має можливість навчатися за індивідуальним темпом, обираючи зручний для себе час та місце для роботи. Проведено аналіз результатів роботи інтернів за окремими модулями та видами навчальної діяльності з урахуванням змін освітнього процесу. Представлені в статті результати різноманітних форм педагогічного контролю дозволяють прослідкувати кореляцію як за окремими навчальними дисциплінами, так і по групах інтернів загалом.

Ключові слова: дистанційне навчання; інтерни-провізори; фахова підготовка; платформа дистанційного навчання E-Front.

ПОВЫШЕНИЕ РЕЗУЛЬТАТИВНОСТИ ОБРАЗОВАТЕЛЬНОГО ПРОЦЕССА ИНТЕРНОВ-ПРОВИЗОРОВ С ИСПОЛЬЗОВАНИЕМ ЭЛЕМЕНТОВ ДИСТАНЦИОННОГО ОБУЧЕНИЯ

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Аннотация. В статье рассматриваются вопросы организации учебного процесса интернов-фармацевтов с использованием элементов дистанционного обучения в Винницком национальном медицинском университете им. Н.И. Пирогова. Проведен анализ состояния образования на разных этапах обеспечения образовательного процесса. Акцентируется внимание на том, что взаимодействие между всеми участниками образовательного процесса с использованием элементов дистанционного образования имеет большое значение. Авторы описывают технические и технологические особенности организации учебного процесса, формирования кадрового персонала, подготовки научно-методических и дидактических материалов, организации коммуникации на дистанционном этапе. Исследованы пути повышения эффективности учебного процесса, среди которых: организация учебного процесса на трех этапах (организационно-установочном, дистанционном, контрольно-зачетном) с соблюдением четко установленного графика обучения; формирование индивидуальной образовательной траектории интерна с постоянным мониторингом учебных достижений; организация ознакомления интернов с особенностями использования инструментов платформы дистанционного образования на первом (стационарном) этапе обучения; актуализация содержания материалов для самостоятельного изучения, практических работ и тестов в соответствии с изменениями законодательства и нормативных документов; приближение тематики тестов отдельных модулей к тематике тестов комплексного экзамена «Elex»; изменение времени проведения синхронных видов образовательных мероприятий (чаты-семинары, вебинары, консультации) на более удобное. Доказано, что дистанционное образование обладает существенными преимуществами перед другими формами обучения, поскольку каждый интерн имеет возможность учиться в индивидуальном темпе, выбирая удобное время и место для работы. Анализ результатов работы интернов по отдельным модулям и видам учебной деятельности проведен с учетом изменений в учебном процессе. Представленные в статье результаты различных форм педагогического контроля позволяют проследить корреляцию как по отдельным учебным дисциплинам, так и по группам интернов в целом.

Ключевые слова: дистанционное обучение; интерны-провизоры; профессиональная подготовка; платформа дистанционного образования E-Front.