The aim of the work – to analyze tutorial process and to improve the quality of education for English speaking students at “Traumatology and Orthopedics” course.

The main body. Paper presents analysis of tutorial process on “Traumatology and Orthopedics” students of foreign faculty of Bukovynian State Medical University. Peculiarities of theoretical and practical study were described. It was estimated that main problems are lack of tutorial hours that were given for learning the discipline, the quantity and quality of English textbooks and methodical instructions are very low. Problems with patient’s curation are related with low level of Ukrainian language and big number of students in groups, that complicates individual approach to mastering practical skills. To resolve the abovementioned problems the distant educational course of “Traumatology and Orthopedics” was introduced. Decreasing number of students in the groups and involvement them to participate in urgent duties will improve the level of theoretical and practical knowledge, motivation and enquiring of students in Traumatology and Orthopedics and will make educational process more individually oriented. Another perspective goal is to compile and publish quality English textbooks and handbooks on “Traumatology and Orthopedics”.

Conclusions. Significant improvement of theoretical knowledge and developing the “orthopedics focus” can be achieved with application of modern distant internet-based learning technologies that helps students to improve practical skills as well. On the other hand solving number of problems, as preparing and publishing quality textbooks and methodical instructions on “Traumatology and Orthopedics” course in English, improving website of distant learning, decreasing number of students in groups will improve the quality of learning the discipline.

Key words: traumatology and orthopedics; tutorial process; foreign students.
progressively increasing every year. Most of students come from India, Middle East, some African countries, North America with big population and relatively small amount of highly qualified medical specialists [1]. The vast majority of students are studying according educational program “General Medicine” that includes “Traumatology and Orthopedics” on fifth year. In autumn semester 2017–2018 educational year there were 216 students, 48 % more than previous year. Therefore, we are searching the ways to make educational process more effective, to reveal student’s level of knowledge in quick and objective way.

The aim of the work – to analyze tutorial process and to improve the quality of education for English speaking students at “Traumatology and Orthopedics’ course.

The main body. “Traumatology and Orthopedics” educational course (90 tutorial hours – 10 lecture hours, 40 hours for practical classes) is held for students that have learned already such important disciplines as Anatomy, Histology, Physiology, Pharmacology and Radiology. Lectures, that are considered to be the core of educational process, have information about main principles of examination patients with injuries of locomotor system, advanced approaches for diagnostics and treatment. On the other hand, most complicated for self-learning topics, such as “Regeneration of bone tissue”, “Principles of treatment orthopedic patients”, “Traumatic illness. Polytrauma: combine injuries – clinical and diagnostic signs, treatment”, “Closed and open fractures”, “Gunshot fractures”, “Traumatic osteomyelitis”, “Inflammation, beneath and malignant tumor diseases of locomotor’s system – clinical and diagnostic signs, treatment” were selected for lectures as well.

One of the urgent tasks to improve tutorial-metho-
do logical process in High Medical Institutions is publishing of quality textbooks and methodical instructions. The rate of supply with educational literature for Ukrainian speaking students is 42 % (for textbooks) and 21 % for methodical instructions. It is considerably less for English speaking students, though it hasn’t been estimated yet. The amount of published tutorial materials for students in foreign languages is 22.3 % (1372 of 6134 issued within 2012–2016) [2].

40 out of 90 educational hours (44.4 %) are scheduled for self-learning, and we have to point that quality of students’ self-education depends a lot from the textbooks and methodical instructions issued in English and their availability for students. There are two ways to improve this point: students can buy books for their own cost (that is a common practice for many universities around the world) or University can buy textbooks and subscribe for scientific journals that are published in English. Both options have to be used but it is quite expensive to supply every student with a textbook (printed usually abroad), considering the fact that amount of students for this year is more than two hundreds, with expected three hundreds and more later. The price for tutorial literature varies from one hundred to five-six hundred US dollars [3]. On the other hand, if some students would like to buy textbooks they have to keep in mind that in Ukrainian bookshops scientific and tutorial literature in English is practically absent. Another option is to buy books online or take them from home. And here we can expect another problem – students usually doubt which book to buy. We analyzed the amount and quantity of “Orthopedic and Oraumatology” textbooks in English that are available for students in our library and those that were brought with students. Some of Indian books are really great, topics are well described, chapters are written in easy and understandable way, and fracture locations are nicely illustrated with drawings and X-rays. Some other books are very complicated and hard for understanding not only for students, but also for experienced specialists. So, in our opinion, at least one issue of textbook on “Orthopedic and Traumatology” from various publishers should be present in the University library to make it possible to review and chose more suitable books, and recommend them for students.

The other way to improve the state of things is to prepare and develop our own printed and electronic tutorial materials. So, now we are preparing for publishing textbook for 5 year students “Diagnostic and treatment algorithms and clinical cases on traumatology and orthopedics”. E-learning technology is considered to be very perspective too. Due to rapidly growing technological progress, computer technologies and Internet nowadays, the way to search the information become very quick and convenient. The simplest example are various search engines (Google, Yahoo, Yandex, etc) that allow every student getting information within seconds just typing “key words” on their phone or tablet. The information can be presented not only as text (*.txt, *.doc, *.rtf, *.html, *.pdf files), but as slides of electronic presentation (*.ppt, *.pptx, *.pdf files), audio and video files, pictures and diagrams (*.jpg, *.tiff, *.png, etc). It looks like the Internet forms the ideal surrounding for self-e-learning but in reality a problem of choosing the necessary informa-
tion stands in front of every student. The search system usually finds thousands of hyperlinks. Such amount of information is practically impossible to review and it is hard for student to choose correct and important links. Internet search system arranges information in such way that most visited websites are shown first. Most visited and most important – are two different things, as websites are visited mostly by non-medical internet users and they contained simplified, incorrect and sometimes grossly twisted information without special medical terminology, thus such information is not acceptable for self-e-learning students of Medical Universities and training a specialist in “Traumatology and Orthopedics”.

So, a powerful electronic tutorial resource has been developed in 2011 on the base of Moodle website of the University and includes two main resources “Traumatology and Orthopedics” and “Orthopedics MCI”. The program contains plan for practical classes and lectures, reference book for students, tutorial and teaching information that students need for self-learning (questions for discussion, shot abstract on every clinical tasks, tests, hyperlinks on tutorial videos, presentations, graphs and X-rays of different fractures). All tutorial materials are arranged according to educational program and methodical recommendations of Traumatology and Orthopedics Department of O. Bohomolets National Medical University of Ukraine [4]. More than 100 hyperlinks for teaching videos are included in the course that highlight basic principles of diagnostics, classification of injuries and diseases of locomotor system, indications to use additional methods of diagnostics, rare clinical cases and peculiarities of their treatment and diagnostics. Use of educational multimedia materials for self-learning, due to their simplicity and availability, significantly improves theoretical knowledge of students [5].

Within practical classes students study the principles of first medical aid for patients with injuries and fractures – how to apply properly factory-produced splints, to stop bleeding, to apply various bandages. Later students can train themselves to immobilize fractures using the set of Crammer, Thomas and Ditherix splints. Students also get practical knowledge in use of immobilization and functional methods of treatment patients with fractures of extremities. They help to apply plaster bandages, to mount system of continuous skeletal traction (learn to determine the place for K-wire insertion in various segments, the technique of procedure and how to use the special instruments – CITO (Central Institute of Traumatology and Orthopedics) and Kirshner traction bow, K-wire tension device, electric drill). Another diagnostic-treatment manipulation that students are taught is puncture of joints that is usually done in cases of hemarthroses and synovitis under local anesthesia. Students learn main principles of anesthesia, types of suitable anesthetics, puncture technique of big joints. Later within practical classes when a topical patient is admitted to the hospital student can take part in this manipulation and then perform it by himself. So, usually every student at the end of the semester can get some practical experience according to approved list of practical skills. Another problem is big amount of students in academic groups (10–13 students) competing with amount of patients that apply for medical help. This can be partially resolved with involving some students, especially those who is going to become orthopedic surgeon, to take part in urgent duties.

Communication between doctor and patient is an important part of diagnostic and treatment process. Within questioning student can collect patients complaints, important data from anamnesis morbi – violence and time of injury, first medical aid – transport immobilization of fracture, application of tourniquet or pressure bandage to stop the bleeding for open injuries.

Making the correct diagnosis and further treatment depends a lot from the quality of communication. It causes some difficulties, as it requires from foreign-student proper level of fluency in Ukrainian – the language that patient speaks. Teaching courses of Ukrainian language, which were organized on previous courses, can somehow resolve the problem. As well as the fact that students learn “Traumatology and Orthopedic” on their fifth year, so within four years foreigners’ can socialize with native Ukrainians and improve their Ukrainian language. There is not a rare case when patient can talk English well and that helps a lot for foreign students. But in the most of the cases patient’s curatio is performed with individual supervision by the teacher when latter controls and corrects examination process, helps a student and a patient to understand each other.

Also improving the quality of this practical stage of learning requires decreasing number of students in groups to 5–6 persons.

Conclusions. Significant improvement of theoretical knowledge and developing the “orthopedics focus” can be achieved with application of modern distant internet-based learning technologies that helps students to improve practical skills as well. On the other hand solving number of problems, as preparing and
publishing quality textbooks and methodical instructions on “Traumatology and Orthopedics” in English, improving website of distant learning, decreasing number of students in groups will improve the quality of learning the discipline.

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