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THE EXPERIENCE OF ZOOM EMPLOYMENT FOR PRACTICAL SEMINARS IN HISTOLOGY, CYTOLOGY AND EMBRIOLOGY

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Introduction. Modern medical education has changed significantly under the influence of rapid development of information technologies. The COVID-19 pandemic and the need to comply with quarantine measures by all participants in the educational process led to a sharp and unexpected transfer of the latter to a remote format. In this regard, Kharkiv National Medical University (KhNMU) and the Department of Histology, Cytology and Embryology of KhNMU (the Department) in particular carried out a search for new methods and effective tools that could provide the proper high-quality level of teaching in new (distance) conditions. Together with asynchronous learning using the Moodle platform, synchronous training of students was provided in the mode of video conferencing in accordance with the schedule of practical classes. Zoom was selected by the Department as the most multifunctional and convenient platform for video conferencing [6, 7]. Zoom is also in the UNESCO's list of collaboration platforms, which provide «live-video communication» [5], and its free plan offers plenty of possibilities for online teaching. Thus, the aim of this article is to share our experience of using the main of Zoom's tools.

Results. From March to June 2020 and then from September to January 2021 24 teachers of the Department worked in Zoom, during this period of time 1547 students were trained, 1022 of them were students of medical faculties and 525 were dentistry students. In the system of medical education histology, cytology and embryology is the basic discipline, laying the foundations of scientific structure-functional approach to understanding the organization of the body's vital functions in normal and pathological conditions [1, 2]. The peculiarities of teaching the discipline include the high significance of a visual explanation of the learning material using a

large number of figures, diagrams, tables, photomicrographs and electron micrographs. Latest computer technologies make it possible to combine all the visual material necessary for one practical class in the form of a multimedia presentation and accompany it with clearly stated text explanations. During the transition to online training the teachers of the Department were faced with the fact that not all video conferencing platforms allow to work effectively with the presentation. The great advantage of Zoom is the embedding of the presentation into the platform interface, which makes working with it comfortable for both a teacher and a student.

First, during the presentation a teacher continues to see the students and the chat, and thus, understand who left the virtual classroom, who joined, who of the participants is currently speaking. Secondly, a student can be interviewed using on-screen questions, tasks, photomicrographs and diagrams. In this case, the student is visible in a separate window, the size of which is adjustable. Moreover, when the window with the presentation is minimized or the teacher moves to other tabs, students continue to see the window that is shown to them in the “Share” mode. This means that choosing a window for subsequent demonstration, a teacher does not demonstrate anything superfluous (which happens if you share the entire screen) and does not leave students without a presentation. In addition, the use of a wide range of tools that enable all participants to highlight individual elements of a presentation or images during a seminar discussion greatly facilitates the analysis of photomicrographs in a distance class.

The system of recurring Zoom video conferences, which can be started on any day and at any time an unlimited number of times, was used by the teachers of the Department to create for each academic group its own virtual classroom with a constant id and password. The instructor provided the conference id and password to all students in the first practical class, then they joined this conference every time they had a scheduled class in a subject. Thus, there was no need to create new conferences and send invitations to students before each class that substantively saved the teacher’s time.

Zoom waiting room has been employed by many members of the Department to track late students and persons, who left the video conference during class time. Furthermore, it can serve as a student preparation room, from which students are invited to a conference with a teacher for an oral answer during a module or a final exam. The possibility to write not only group but also personal messages in the Zoom chat proved to be helpful for conducting various quizzes for students and collecting individual responses

from participants, who was unable to answer orally due to poor microphone performance. In addition, with the help of individualization of the chat, each student has the opportunity to ask a question confidentially.

Additional possibilities for ensuring the educational process are opened by the function of video recording of conferences in Zoom. Based on this, we began to record video lectures, webinars on preparation for certification in the single state qualifying exam, practical exercises. The resulting video materials have been uploaded on the distance learning platform of KhNMU and are used by students in asynchronous learning.

According to the schedule adopted in KhNMU, each academic pair consists of two classes lasting 45 minutes with a 10-minute break between them. Therefore, in the course of remote practical seminars in zoom, the main inconvenience was the 40-minutes time limit of one video conference. However, the use of recurring conferences allowed, after 40 minutes, to restart the conference immediately and modify the resulting 5 minute difference. Taking into account that such reconnection is not always convenient for students, because it requires re-entering an id and password, the possible solutions to this problem can also be: transferring the indicated time difference of 5 minutes to students' independent work or accumulating and using this time in one additional connection at the end of a class.

The next significant limitation of the zoom for the educational process is the inability to create several conferences at the same time. Conducting an online training with the inclusion of students in the implementation of group tasks can significantly increase the interest and involvement of students. However, it requires the distribution of groups of participants in separate virtual rooms with automatically transferring in accordance with the timing set by the teacher. But unfortunately, the use of Zoom Rooms is only possible in the paid plans.

Conclusion. Our experience has proven that the implementation of practical seminars in histology, cytology and embryology in an online format by using Zoom software is quite simple technically and efficient. Conducting video conferences with a demonstration of interesting, clear and detailed presentation that includes plenty of photomicrographs, training schemes and figures allows to provide curricular course in its entirety. Therefore, despite some inconveniences, Zoom can be recommended as one of the best video conferencing platforms for remote teaching. However, we also observed that no video conference can fully provide the same high level of communication between teacher and students, which is present in face-to-face format.

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LEARNING THROUGH RESEARCH

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Introduction. Reforming the system of higher education due to the influence of the Bologna process, the problem of improving the quality of training in higher education require the interaction of scientific, educational curricular work and extracurricular work of students and scientific research work with them [1, 2]. As you know, scientific research work of students is one of the most important forms of educational process, one of the links in the formation of quality education in all institutions of higher education of Ukraine, including medical, because the future doctor must be highly competitive in the labor market [3].

Main part. Scientific research and organization of scientific work at the Department of Medical and Bioorganic Chemistry of Kharkiv National Medical University is carried out according to the principles of innovative