Materials of Conferences

E-LEARNING: MEDICAL FACULTY STUDENTS' DEMAND FOR ELECTRONIC MANUALS

Snegireva L.V.

Kursk State Medical University, Kursk, e-mail: sneglv1@gmail.com

Medical university students' demand for electronic manuals in educational process is studied by the author of the article. Testing of 179 first-year medical faculty students was carried out. First-year students were involved into testing at the end of an academic year. The students were distributed into 3 groups according to their educational activity results: students with excellent results, good results of studies, and poor educational activity results. By testing results, electronic teaching manuals are highly appreciated by medical students. Vast majority of medical students studies both electronic manuals and printed editions, however, preferring electronic teaching manuals. Low academic rate students are actively included into electronic manuals studying, using great advantages of electronic teaching manuals. Medical faculty students consider electronic teaching manuals as irreplaceable components of university educational process, great instrument of representing and visualizing the information, a tool of great effectiveness teaching in educational process individualization.

Electronic teaching manuals are considered as one of the most important elements of medical university e-learning. Electronic teaching manuals are irreplaceable components of university educational process, great instrument of information representation and visualization, a tool of students' cognitive activity stimulation, a way of modern science and technology achievements usage in educational process [1, 4]. The effectiveness of electronic teaching manuals is the object of modern pedagogical researches [2, 3, 6, 7]. At the same time, it has to be noted, that medical university students' demand for electronic manuals is still out of researchers consideration [5].

That's why, the aim of our research is defined as medical university students' demand for electronic manuals in educational process.

Materials and methods. Testing of 179 first-year medical faculty students was carried out. First-year students were involved into testing at the end of an academic year.

The students were distributed into 3 groups according to their educational activity results: students with excellent results – 27,4 %, good results of studies – 66,5 %, and 6,1 % – poor educational activity results.

The experiment was held in constant conditions for all groups of students: the research was held at 11 a.m. in academic auditory. The research duration was about 12 minutes. Medical faculty students performed the testing independently. The testing was built on the basis of original author test including 12 questions.

Results of research and their discussion. Medical faculty students were asked to arrange e-learning various elements according to their frequency in high school educational process use. According to the testing results, examinees choose the second place for electronic manuals in the following list:

1. computer testing;
2. electronic manuals;
3. multimedia lectures;
4. university website information;
5. problem tasks on computer;
6. laboratory works on computer.

We found from testing results, that the electronic teaching manuals are highly appreciated by medical students. So, 88,8 % of examinees use electronic teaching manuals at home, every third student uses electronic manuals in class. The operating time with electronic manuals exceeds 3 hours a day for 76,5 % of first-year students, and for 81,8 % of low academic rate students with regard to 73,5 % of students with high results of educational activity.

By testing results, examinees use both electronic manuals, and printed editions. 3,9 % of first-year students prefer electronic teaching manuals, approximately the same rate (3,4 % of examinees) choose printed manuals. Vast majority of medical students studies from both types of manuals, however, preferring electronic teaching manuals. The tenth part of low academic rate examinees studies only from electronic manuals, and 50 % of students with poor results of studies uses mainly electronic manuals.

Examinees noted following advantages of electronic manuals:

– usage simplicity – 67,6 %;
– usage comfort – 38 %;
– good representation of educational material – 20,7 %;
– self-control opportunity – 12,3 %;
– convenience of information perception – 10,6 %;
– increasing interest of the studied subject – 3,9 %.

It should be noted, that students with poor results of studies put the point "good representation of educational material" of electronic manual to the first place (27,3 % of examinees). And points "convenience of information perception" (18,2 % of examinees) and "self-control opportunity" (18,2 % of examinees) were taken to the next places.

Medical students point out the following limitations of electronic manuals:

– need for the hardware (computer) – 72,1 %;
– fatigue of – 17,3 % of students;
– complexity of use, lack of skill in work – 6,7 %.

Thus, research results make us conclude that electronic teaching manuals are highly appreciated by medical students. Low academic rate students actively use electronic teaching manuals. They are included into electronic manuals studying more actively than students with high results of educational activity. It can be explained, firstly, by low level of cognitive activity and , secondly, by great advantages of electronic manuals for students with poor results of studies. Medical faculty students consider electronic teaching manuals as irreplaceable components of university educational process, great instrument of information representation and visualization with great effectiveness in educational process individualization.

References

1. Balashov I.V. Application of electronic tutorials – a factor of effective development of cognitive interest of students // The Messenger of the Kostroma state university of N.A. Nekrasov. – 2008. – № 2, Volume 14. – P. 247–249.

2. Derkach T. M. Measurement of cognitive loading at a research of efficiency of application of electronic tutorials//Information technologies and tutorials. – 2011. – № 2. Volume 22. – P. 13.

3. Karshiyev H., Aminova N. I. Electronic means and methods of training for increase in efficiency of educational process // the Young scientist. – 2016. – № 14 (118). – P. 539–542.

4. Snegireva L.V. E-learning as an instrument of students' generalization skills development// Modern high technologies. – 2016. – № 6–2. – P. 416–420.

5. Snegireva L.V. E-learning in bilingual educational process of medical university // Modern education. – 2016. – № 3. – P. 101–108.

6. Snegireva L.V., Rubtsova E.V. electronic teaching manuals as an effective method increasing the level of high education // Modern high technologies. – 2015. – № 11. – P. 101–104.

7. Viktorova Yu.V. Use of the electronic textbook for increase in learning efficiency to mathematics // Modern problems of science and education. – 2012. – № 4.; URL: http://www.science-education.ru/ru/article/view?id=6593 (date of the address: 16.06.2016).

The work is submitted to the International Scientific Conference "Modern education. Problems and solutions", Italy (Rome-Venice), December 18–25, 2016, came to the editorial office on 09.12.2016.

THE APPROBATION OF MATHEMATICAL COMPETENCE MODEL IN MEDICAL SCHOOL E-LEARNING EFFICIENCY STUDYING

Snegireva L.V.

Kursk State Medical University, Kursk, e-mail: sneglv1@gmail.com

To approbate suggested mathematical competence functional model, the e-learning process results of mathematical competence components development for clinical psychology faculty students were considered. According to research results, 90% of medical students got enough mathematical base for studying the other medical school disciplines, knowledge in math for solving professional activity tasks, high level development in each mathematical competence component to solve practical and theoretical problems. Thus, the suggested model allowed us to esteem the mathematics e-learning effectiveness in formation and development of students' mathematical competence as high.

The successful mathematical tasks solving requires three cognitive components possession: readiness and ability to analysis and synthesis; readiness and ability to abstract from insignificant properties and characteristics of objects; readiness and ability to generalization [3, 5, 6]. The mathematical competence model in three-dimensional space, based on main structural components, is easily realized in educational process to show real university students' mathematical competence development level and its separate components, providing studies of various factors influence on process of mathematical competence formation [1, 2, 4].

The approbation of functional components mathematical competence model in medical school e-learning efficiency studying is our research aim. Medical university clinical psychology students' mathematical competence was chosen as the research object. Materials and methods. The testing of second-year clinical psychology students was carried out. 10 second-year clinical psychology faculty students were involved into mathematical e-learning testing after passing the mathematical course examination. The research was held at 11 a.m. in the academic auditory. The research duration was about 50 minutes. The clinical psychology faculty students performed the testing independently without using any electronic devices. The testing was built on the basis of Atmhauer intelligence structure test including the scale of mathematical abilities determination and a questionnaire "Thinking type".

Results. To approbate suggested mathematical competence functional model, we consider e-learning process results of mathematical competence components development for clinical psychology faculty students. For this purpose we will take 100-grade scale for each mathematical competence structural component. The research results of clinical psychology faculty students' mathematical competence components development in e-learning process are represented in the table.

We build three-dimensional mathematical competence model based on the received results. Provided that $K_{1max} = K_{2max} = K_{3\ max} = 100$, sphere external radius $R_{external}$ is calculated as:

$$R_{external} = \sqrt[2]{100^2 + 100^2 + 100^2} = 173. \quad (1)$$

The magnitude of sphere internal radius $R_{internal}$ is found from expression:

$$R_{internal} = 0{,}6\ R_{external} = 103. \quad (2)$$

The distance between internal and external radii can be calculated from the following formula:

$$d = 173 - 103 = 70. \quad (3)$$