## Mobile testing in the system of higher medical education

Nargiza Toirjonovna Mamatova Baxrombek Abduvaliyevich Abduhakimov Samarkand State Medical University Abduvaliy Abduhakimovich Ashurov Samarkand regional Center for Phthisiology and Pulmonology

Abstract: In recent years, innovative technologies have been increasingly used in the education system. This probably applies to a greater extent to the distance learning system. In some cases, a good distance learning program can almost completely replace the process of full-time education. At the same time, medical education is unique, and characterized by significant conservatism. Indeed, replacing practical training in a clinical specialty with correspondence courses is almost impossible today. However, this does not mean that certain parts of such training cannot be used in the preparation of a medical student with good efficiency. In this regard, there are various possibilities, but the testing function is most in demand. The emergence of distance learning, and in particular the MOODLE system, made it possible to approach the solution of these problems. The second important condition for fulfilling this task was the fact that students widely use mobile computing devices (smartphones, tablets, and laptops) in everyday life, and in particular in their studies.

Keywords: test, student, medical personnel, knowledge, education

Introduction. In recent years, innovative technologies have been increasingly used in the education system. This probably applies to a greater extent to the distance learning system. In some cases, a good distance learning program can almost completely replace the process of full-time education. At the same time, medical education is unique, and characterized by significant conservatism. Indeed, replacing practical training in a clinical specialty with correspondence courses is almost impossible today. However, this does not mean that certain parts of such training cannot be used in the preparation of a medical student with good efficiency. In this regard, there are various possibilities, but the testing function is most in demand. In general, testing is the most important component of the educational process and is widely used in education, including medical education, both to control students' knowledge and for training. At the same time, testing in a study group has certain difficulties. First of all, there must be a computer lab, which is not available at every clinical department. But even if there is a computer lab, the teacher does not always have the opportunity to conduct testing at the time he needs.

The emergence of distance learning, and in particular the MOODLE (Modular

Object-Oriented Dynamic Learning Environment) system, made it possible to approach the solution of these problems. The second important condition for fulfilling this task was the fact that students widely use mobile computing devices (smartphones, tablets, and laptops) in everyday life, and in particular in their studies. The reality is that you can rarely see a student with educational literature in class, it has been replaced by modern gadgets. We can discuss whether this is good or bad, but that is how it is. On the other hand, this made it possible to test students independently of the computer at any time during the lesson (and naturally after, if necessary).

It must be said that positive expectations were met: yes, all of this is real, it all works, it is convenient, interesting and one can even say creative. It was curious to observe the students' reaction to the offer to conduct testing "right here and now" - it was unexpected for them. In general, the students' attitude to this form of conducting classes was quite positive. We consider the optimal number of test questions (considering the current test control) from 15 to 20, with a time limit of up to 20 minutes. The set of test tasks is standard, consisting of tests of different forms (mainly single or multiple choice) and varying degrees of difficulty. However, not everything can go smoothly in this process and several difficulties can arise. This is, first of all, a technical issue: no smartphone, no traffic, battery is discharged, etc. Indeed, it is difficult to imagine a modern student without mobile computer devices, but all this can happen. In reality, contrary to expectations, such cases took place, but they were rare. Moreover, these issues can be largely resolved by providing internet traffic, or by providing a written version of the tests to the student, or some kind of assignment (you need to be prepared for this).

Conclusion. On the other hand, it is necessary to pay attention to certain problems of a methodological nature. First of all, this method of conducting classes should be methodically permitted (approved) as one of the options for conducting classes. The student should know that such a method of conducting classes officially exists (is included in the curriculum) and should be ready for this type of conducting classes, and also understand the responsibility for refusing it. This also applies to the assessment of student's knowledge obtained in this way. In general, once again we can note the fairly good possibilities of this method of monitoring the knowledge of students of a medical university. This method has obvious advantages, is effective, and is not complicated (of course, with a certain level of training). Its use in educational work allows us to get away from the known shortcomings of traditional computer testing. At the same time, the widespread use of this method requires solving certain methodological issues. Without solving these issues, the use of this method in conducting final forms of certification is not sufficiently justified and can be limited only to current knowledge monitoring.



## References

1. Аджаблаева Д.Н. Основные эпидемиологические показатели ПО туберкулезу органов дыхания среди детей и подростков в Самаркандской области: состояние проблемы и возможные пути её разрешения // Universum: медицина и фармакология. 2014. №9 (10). С.2.

2. Абдухакимов Б. A. Qalqonsimon bezining funksional holatiga silga qarshi davolash choralarining tasiri //Журнал кардиореспираторных исследований. – 2020. – T. 1. – №. 3.

3. Ашуров А. А., Абдухакимов Б. А. Калконсимон бези патологияси кузатилган беморларда силга қарши даволаш чораларининг оқибатлари //Academic research in educational sciences. – 2022. – T. 3. – №. 8. – C. 166-173.

4. Ашуров А.А. Силнинг оғир ва сурункали шакллари билан касалланган беморларга паллиатив тиббий ёрдам кўрсатишнинг ахамияти//Журнал вестник врача. - 2020. - Т. 2. - С. 52-55. https://doi.org/10.38095/2181-466X-2020942-52-55

5. Ашуров А., Абдухакимов В. (2022). Особенность течения туберкулеза легких у детей в сочетании с гельминтозом. Журнал кардиореспираторных исследований, 2(3), 69-72. https://doi.org/10.26739.2181-0974-2021-3-13

6. Маматова Н.Т. Опыт применения краткосрочных курсов лечения у больных туберкулёзом с множественной лекарственной устойчивостью в Самаркандской области. Вестник научно-исследовательского института туберкулёза,106-107, 2020.

7. Маматова Н. Силга қарши даволаш чораларининг қалқонсимон безининг фаолиятига таъсири //Журнал вестник врача. – 2020. – Т. 1. – №. 4. – С. 31-35.

8. Маматова N. (2022). Влияние туберкулеза легких на психическое состояние подростков. Журнал гепатогастроэнтерологических исследований, 2(3.2),114–117. извлечено OT https://inlibrary.uz/index.php/hepatogastroenterological/article/view/2454

9. Маматова N., Ашуров А., Абдухакимов В. (2022). Особенности течения туберкулеза легких у детей в сочетании с глистной инвазией. Журнал кардиореспираторных исследований, 2(1), 74-77. https://doi.org/10.26739.2181-0974-2021-1-14

10. Маматова Н. Т. и др. Влияние улучшения психического состояния на эффективность лечения женщин, больных туберкулезом органов дыхания //Science and Education. – 2023. – T. 4. – №. 5. – C. 156-165.

11. Маматова . H. Nafas olish tizimining sil kasalligini kompleks davolash samaradorligiga bedakvilinning ta'siri. Журнал кардиореспираторных исследований 1 (1), 77-80.

12. Ходжаева, С. (2011). Данные электрокардиографических исследований

при туберкулёзе органов дыхания. Журнал вестник врача, 1(04), 127–128. извлечено от https://inlibrary.uz/index.php/doctors\_herald/article/view/12536

13. Ходжаева, С. (2011). Актуальные проблемы туберкулёза в сочетании с ВИЧ. Журнал вестник врача, 1(04), 125–126. извлечено от https://inlibrary.uz/index.php/doctors\_herald/article/view/12535

14. Ходжаева, С. (2011). Актуальные проблемы противотуберкулёзной помощи детям и подросткам. Журнал вестник врача, 1(02), 149–150. извлечено от https://inlibrary.uz/index.php/doctors\_herald/article/view/11898

15. Ходжаева, С. (2011). Актуальные вопросы туберкулеза половых Влияние туберкулёзного органов y женщин и мужчин. процесса на фертильность. Журнал вестник врача, 1(02), 151–153. извлечено OT https://inlibrary.uz/index.php/doctors herald/article/view/11899

16. Abduhakimov B.A. The importance of improving the mental state of patients with tuberculosis.//Web of Scientist: International Scientific Research Journal. -2022. - T. 3. - No. 4. - C. 1423-1429.https://doi.org/10.17605/OSF.IO/RNB7V

17. Abduhakimov B.A. O`pka sili bilan kasallangan bemorlarga stomatologik yordam ko'rsatishning ahamiyati. Academic Research in Educational Sciences. 2022, volume 3, issue 1, pp.258-262.

18. Abduhakimov B.A. Peculiarities of the course of pulmonary tuberculosis in children in combination with clay invasion. Journal of cardiorespiratory research. 2021, vol. 2, issue 1, pp.74-77.

19. Ashurov A.A. The importance of palliative care in patients with severe and chronic forms of tuberculosis. ACADEMICIA: An International Multidisciplinary Research Journal 12 (2), 290-293. https://doi.org/10.5958/2249-7137.2022.00159.8

20. Ashurov A.A., Abduhakimov B.A. Peculiarities of the course of pulmonary tuberculosis in children in combination with helminthosis. Journal of cardiorespiratory research. 2021, vol. 2, issue 3, pp.69-72.

21. Ataxanovna, K.S. The Effectiveness of Short-Term Treatment Regimens In The Treatment Of Drug-Resistant Forms Of Tuberculosis. European Journal of Molecular & Clinical Medicine, 2020, Volume 7, Issue 3, Pages 5236-5240.

22. Mamatova N. T. Psychological characteristics of adolescents with respiratory tuberculosis //Journal of Biomedicine and Practice.  $-2020. - T. 5. - N_{\odot}. 5. - C. 135-140.$ 

23. Toirjonovna M. N. Nafas olish tizimi sili bilan kasallangan o'smirlarning psixologik xususiyatlari //Педагогика ва психологияда инновациялар. – 2020. – Т. 7. – №. 3.

24. Xaydarovna, M.F. (2020). Prevention Of Anemia In Patients With Tuberculosis. The American Journal of Medical Sciences and Pharmaceutical

Research, 2(11), 62-65. https://doi.org/10.37547/TAJMSPR/Volume02Issue11-11.

25. MN Toirjonovna. Features of pulmonary tuberculosis in children with helminthiasis. Web of Scientist: International Scientific Research Journal 3 (11), 643-651.

26. Mamatova N. T. et al. Sil bilan kasallangan bemorlarni kompleks davolash samaradorligiga bedakvilinning ta'siri //Science and Education.  $-2023. - T. 4. - N_{\odot}$ . 2. - C. 107-117.

27. NT Mamatova, AA Ashurov, BA Abduhakimov. Ruhiy holat yaxshilashning siydik ajratish tizimi sili bilan kasallangan bemorlarning davolash samaradorligiga tasiri. Academic research in educational sciences 3 (10), 892-900.

28. Mamatova Nargiza Toirjonovna, Ashurov Abduvaliy Abdukhakimovich, Abdukhakimov Bahrombek Abduvalievich, & Ahtamova Shirin Khayrulloevna. (2024). Detection and Course of Intrathoracic Tuberculosis in Children from Large Families. American Journal of Pediatric Medicine and Health Sciences (2993-2149), 2(2), 84–89. Retrieved from https://grnjournal.us/index.php/AJPMHS/article/view/2963.

29. Mamatova, N.T., Abduxakimov, B.A., Axtamova, S.X. and Ashurov, A.A. 2024. Bemor kuratsiyasi - ftiziatriya va pulmonologiya kafedrasida talabalarning mustaqil ishining asosiy shakli. Science and Education. 5, 4 (Apr. 2024), 84–90.

30. Mamatova N. T. et al. The effect of mental status improvement on treatment effectiveness in men with urinary tuberculosis// Academia Science Repository, 2023.

31. Mamatova N. T. et al. Ko'p bolali oiladagi bolalarda ko'krak ichi limfa tugunlari silning aniqlanishi va uning kechishi //Science and Education. -2024. - T.5.  $- N_{\odot}$ . 2. - C. 69-76.

32. Mamatova N. T. et al. Sil bilan kasallangan bemorlarni kompleks davolash samaradorligiga bedakvilinning ta'siri //Science and Education.  $-2023. - T. 4. - N_{\odot}$ . 2. - C. 107-117.

33. Mamatova N. T. et al. Nafas olish tizimi sili bilan kasallangan bemorlarga stomatologik yordam ko'rsatishning ahamiyati //Science and Education. -2022. - T.3.  $- N_{2}. 12. - C. 132-141.$ 

34. Nargiza M., Abduvaliy A., Bakhrombek A. The importance of palliative care in patients with severe and chronic forms of tuberculosis //ACADEMICIA: An International Multidisciplinary Research Journal. – 2022. – T. 12. – №. 2. – C. 290-293.

35. Toirjonovna M. N., Abduhakimovich A. A., Abduvaliyevich A. B. Role of palliative care for patients with severe and chronic tuberculosis //Modern scientific challenges and trends. -2021. - C. 30.

36. Маматова, Н., Ашуров, А., & Абдухакимов, Б. (2024). Silning surunkali shakllari bilan kasallangan bemorlarga palliativ tibbiy yordam ko'rsatishning

ahamiyati . Инновационные подходы к диагностике, лечению и профилактике туберкулеза и неспецефической респираторной патологии у взрослых и детей, 1(1), 85–86. извлечено от https://inlibrary.uz/index.php/prevention-tuberculosis/article/view/30633.

37. Маматова Н., Ашуров А., Абдухакимов Б. Особенности течения туберкулеза легких у детей в сочетании с глистной инвазией //Журнал кардиореспираторных исследований. – 2021. – Т. 2. – №. 1. – С. 74-77.

38. Toirjonovna M. N., Abduvaliyevich A. B. Qalqonsimon bezining funksional holatiga silga qarshi davolash choralarining tasiri //Journal of cardiorespiratory research.  $-2020. - T. 1. - N_{\odot}. 3. - C. 24-27.$ 

39. Маматова, Н. «Значение паллиативной медицинской помощи для больных с тяжелыми и хроническими формами туберкулёза». Журнал вестник врача, т. 1, вып. 2, март 2022 г., сс. 53-56, doi:10.38095/2181-466X-2020942-52-55.

40. Маматова Н., Абдухакимов Б. Влияние противотуберкулезного лечения на функциональное состояние щитовидной железы //Журнал кардиореспираторных исследований. – 2020. – Т. 1. – №. 3. – С. 24-27.

41. Mamatova N.T. (2024). Independent work of medical university students as an integral principle of training a highly qualified specialist . Ta'lim Innovatsiyasi va Integratsiyasi, 25(1), 51–56. Retrieved from https://web-journal.ru/index.php/ilmiy/article/view/6835.

42. Mamatova N. T. (2024). Situational role-playing as a method of active student learning . Ta'lim Innovatsiyasi va Integratsiyasi, 25(1), 45–50. Retrieved from https://web-journal.ru/index.php/ilmiy/article/view/6834.

43. Mamatova N.T. (2024). Talabalarning boshqariladigan mustaqil ishi "Ftiziatriya" fani o'quv jarayonini tashkil etishidagi o`rni . Ta'lim Innovatsiyasi va Integratsiyasi, 25(1), 38–44. Retrieved from https://webjournal.ru/index.php/ilmiy/article/view/6833.

44. Mamatova N. T. (2024). Situational training of students in practical classesin phthisiology using the case method. Образование наука и инновационные идеивмире,49(3),3–9.Retrievedfromhttps://www.newjournal.org/index.php/01/article/view/15734

45. Mamatova N. T. (2024). Palliativ tibbiy yordam ko'rsatishning tuberkulezning og'ir va surunkali shakllari bilan kasallangan bemorlarga o'rni. Образование наука и инновационные идеи в мире, 49(3), 10–16. Retrieved from https://www.newjournal.org/index.php/01/article/view/15735.

46. Mamatova N. T., Akhmedov A. A. (2024). Managed independent work of students as one of the forms of organization of the educational process within the framework of the discipline phthisiology. Образование наука и инновационные

49(3), 17–23. Retrieved мире, from идеи В https://www.newjournal.org/index.php/01/article/view/15736

