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FORMATION OF INFORMATION-COMMUNICATIVE COMPETENCE OF FUTURE PHYSICS TEACHERS BY MOBILE TECHNOLOGIES

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Formation of Informational- Communicative Competence of Future Teachers of Physics by Technologies

In the context of intensive informatization of education, the issue of training a highly skilled specialist with the formed information-communication competence becomes extremely important, which makes it possible in practice to implement innovative approaches in professional activity. This question is also relevant for the training of future teachers of physics, since the future teacher of such discipline must have a whole set of knowledge and skills and constantly improve on the use of modern information technology during the training.

The concept of information-communicative competence is considered in the paper. The essence of the notion of mobile learning and the work of Kislova M.A., Semerikov S.O., Slovak K.I. are revealed. The principle of organizing a mobile learning environment is shown, which makes it possible to efficiently organize educational process and create motives for studying.

The feasibility of using Kahoot! software is demonstrated for the formation of IC-competences for future teachers of physics.

Key words: informational-communicative competence, future teachers of physics, mobile learning.

Today, one of the important tasks of higher education institutions is the training of highly qualified specialists who skillfully use modern information and communication technologies in the educational process, are free to navigate in the information space, have the knowledge, skills to search, process, store data. As a result, the problem of forming informational-communicative competence among students as a necessary condition for ensuring the qualitative organization of the educational process is urgent [1].

The analysis of studies shows that the process of informatization of education significantly influenced the expansion of the sphere of application of information and communication technologies and highlighted the issue of formation of information and communication competence of students of higher educational institutions. This problem is devoted to the research of scientists: N. Bibik, V. Bykov, L. Vashchenko, R. Gurevich, E. Zier, I. Zimnya, O. Pometun, O. Savchenko, S. Sysoeva, Yu. Spirin, L. Tarkhan, A. Khutorskogo and others. Researches related to the implementation of information and communication technologies in education were considered by their scholars such as B. Vashchuk, V. Klochko, N. Morse, M. Zhaldak, S. Rakov, Y. Ramsky, E. Mashbits , B. Gershunsky, A. Yershov and others [2].

The emerging IC competence implies the use of ICT in learning and everyday life; rational use of computer and computer facilities in solving tasks related to the processing of information, its search, systematization [2].

According to the results of the research by M. A.Kislova, S.O.Semerikov, K.I.Slovak, the main feature of the modern learning environment is the use of ICTs to support the learning process, as one of the constituent parts of the learning environment is a technological one that contains ICT.

If, for building a learning environment to the technological component to include mobile ICTs, then they say about mobile learning environments. That's it the environment is used without being bound to a specific place and computer, and its center is the student [3].

Let's dwell more on the notion of mobile learning. Relying on the analysis of research by Smeshnova V.A. [4] where it is understood that there are many interpretations of the notion of "mobile learning" in the literature, and it is common to them that the physical connection with the cable network is optional for this learning technology. According to S. Semerikov, "mobile learning" can be defined as an approach to learning that involves the use of mobile electronic devices to create a mobile learning environment where students can use them as a means of access to educational materials that are available on the Internet, anywhere and at any time.

V. Kuklev considers mobile learning as an electronic learning by means of mobile devices, regardless of time and place, using specialized software on a pedagogical basis, interdisciplinary and modular approaches.

The term mobile learning (m-learning) refers to the use of mobile and portable IT devices, including PDA PDAs (Personal Digital Assistants), mobile phones, laptops and tablet PCs in the learning process. .

Mobile devices (phones, pocket computers) have much more affordable prices than desktop computers and cheaper internet access (although the cost of connection may be higher).

As stated in the paper Maslyuchenko Y.A. [5] The purpose of m-learning is to make the learning process flexible, accessible and personalized, which implements the main principle of mobile learning - learning anywhere, at a convenient time. Also the following are the benefits of m-learning:

–   students get the opportunity to interact with each other;

–   it's much easier to put mobile devices in the classroom than computers;

–   e-books take up less space than books on paper carriers, they are relatively light weight;

–   the possibility of exchanging tasks, working together on one document, etc .;

–   mobile devices are used anywhere, at any time;

–   new technical devices: mobile phones, gadgets, gadgets more attract students' attention, increase their motivation.

Currently, there are a large number of software tools that enable you to implement mobile learning. Let's dwell more on one of them, namely Kahoot!, whose interface is shown in Fig. 1. The program is English-language, and in the context of student academic mobility, it only gives them the advantages, since they have the opportunity to work out professional terminology knowledge not only in their native language, but also in foreign languages. In this application there are tests made from different sections of physics that can be selected depending on the need to test student knowledge and create their own.
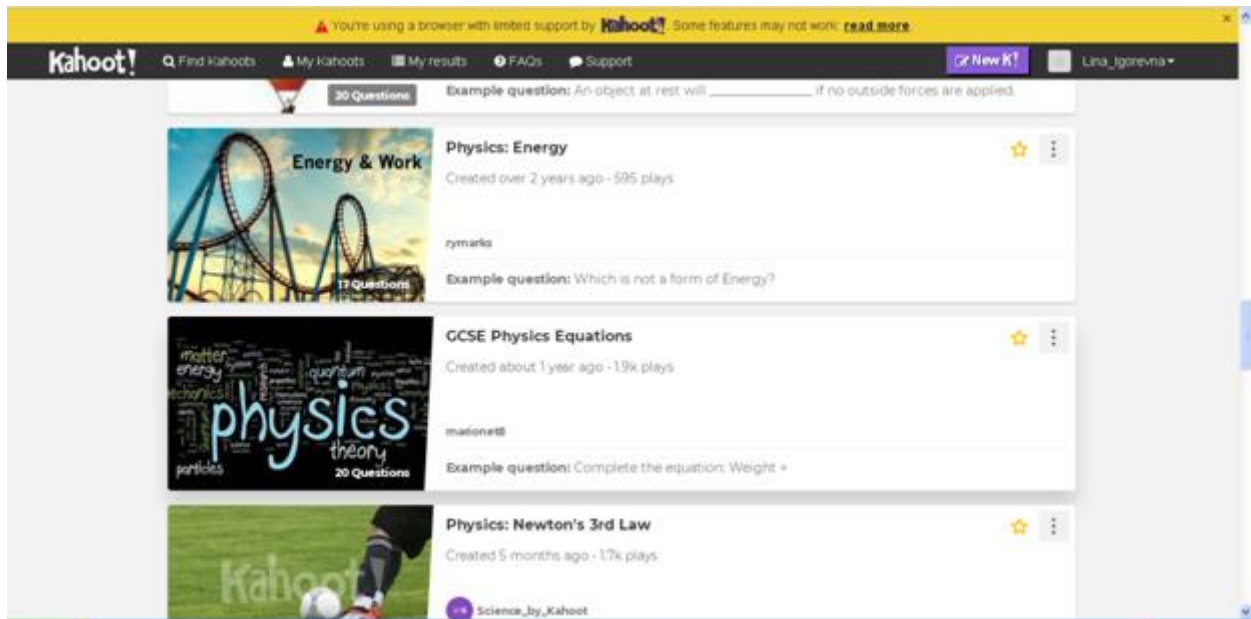
Fig. 1 Kahoot! mobile application interface

This software tool allows you to quickly check the readiness of students as well as to work in teams. Test results, or team play, are instantly displayed on the teacher's mobile device screen. Such an organization of work is a significant motivating factor for training. We consider it expedient to use such mobile software as Kahoot! during the preparation of future teachers of physics specialty Secondary Education (Physics). This makes it possible to rationally use the training time and create the necessary incentives for students. Students may also be involved in the development of their own tests for teaching methods in physics. Fig. 2 shows the starting page for Kahoot! testing.
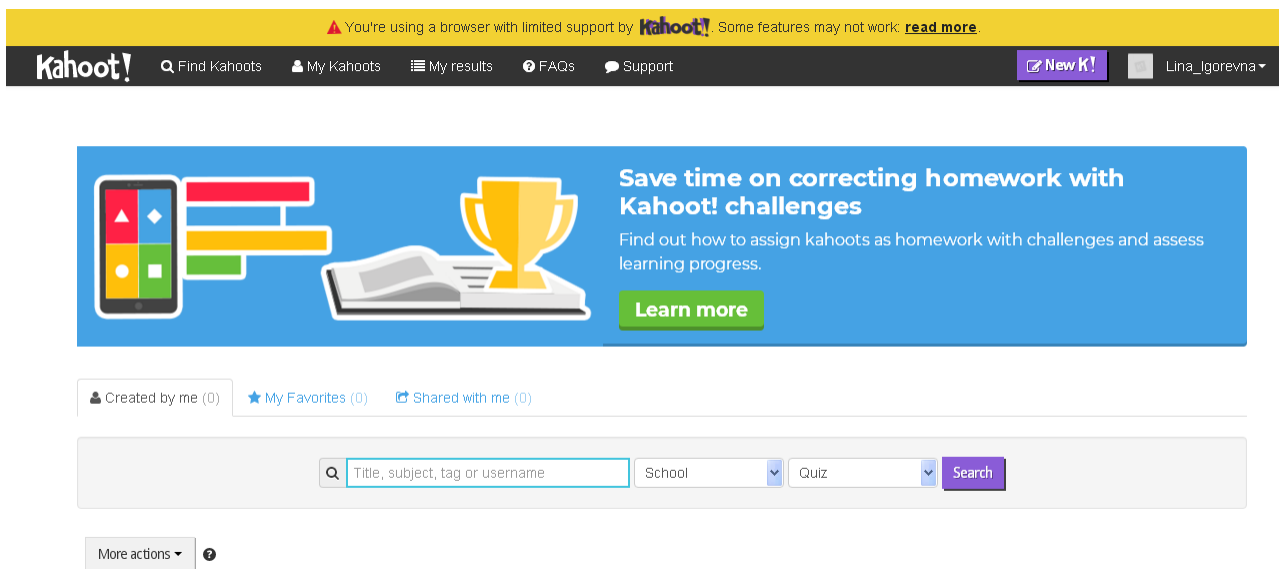
Figure 2 The starting page for testing at Kahoot!

Thus, we can conclude that the use of such software as Kahoot! provides an opportunity to effectively organize the training time, create the necessary motives for student learning, and is a significant factor in shaping the information-communication competence of future physics teachers.

In further practice, we consider it expedient to expand the range of software tools for organizing mobile learning in the preparation of future physics teachers in order to form an IC-competency.

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Бондаренко Л. І.

Формування інформаційно-комунікативної компетентності майбутніх учителів фізики засобами мобільних технологій

В умовах інтенсивної інформатизації освіти вкрай важливим стає питання про підготовку висококваліфікованого фахівця із сформованою інформаційно-комунікаційною компетентністю, що дає можливість на практиці реалізовувати інноваційні підходи у професійній діяльності. Це питання є актуальним і для підготовки майбутніх учителів фізики, оскільки майбутній вчитель такої дисципліни має володіти цілим комплексом знань і вмінь та постійно вдосконалюватись у використанні сучасних інформаційних технологій при проведенні занять.

У роботі розглянуто поняття інформаційно-комунікативної компетентності. Розкрито сутність поняття мобільного навчання та на основі робіт Кислової М. А., Семерікова С. О., Словак К. І. показано принцип організації мобільного навчального середовища, що дає можливість раціонально організувати навчальний процес та створювати мотиви для навчання.

Продемонстровано доцільність використання програмного засобу Kahoot! задля формування інформаційно-комунікативної компетентності у майбутніх учителів фізики.

Ключові слова: інформаційно-комунікативна компетентність, майбутні учителі фізики, мобільне навчання.

Бондаренко Л.И.

Формирование информационно-коммуникативной компетентности будущих учителей физики средствами мобильных технологий

В условиях интенсивной информатизации образования крайне важным становится вопрос о подготовке высококвалифицированного специалиста со сформированной информационно-коммуникационной компетентностью, что позволяет на практике реализовывать инновационные подходы в профессиональной деятельности. Этот вопрос актуален и для подготовки будущих учителей физики, поскольку будущий учитель такой дисциплины должен обладать целым комплексом знаний и умений и постоянно

совершенствоваться в использовании современных информационных технологий при проведении занятий.

В работе рассмотрено понятие информационно-коммуникативной компетентности. Раскрыта сущность понятия мобильного обучения и, на основе работ Кисловой М. А., Семерикова С. А., Словак К. И., показано принцип организации мобильной учебной среды, что позволяет рационально организовать учебный процесс и создавать мотивы для обучения.

Продемонстрировано целесообразность использования программного средства Kahoot! для формирования информационно-коммуникативной компетентности у будущих учителей физики.

Ключевые слова: информационно-коммуникативная компетентность, будущие учителя физики, мобильное обучение.

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