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ЭЛЕМЕНТЫ МОБИЛЬНОГО ДОСТУПА В BYOD ОБУЧЕНИИ ИНОСТРАННЫХ СТУДЕНТОВ БАЗОВОМУ РУССКОМУ ЯЗЫКУ ФИЗИКИ НА ОСНОВЕ ОБЛАЧНОГО РЕСУРСА ONE DRIVE И СДО MOODLE

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Аннотация. Представлены некоторые результаты применения BYOD-технологий на базе мобильных устройств для доступа в Интернет в обучении иностранных слушателей подготовительного факультета основам русского языка физики. Описаны возможные подходы к формированию корпуса минимально достаточных терминов физической науки и принципы построения тестовых заданий.

Ключевые слова: язык физической науки, русский язык как иностранный, обучение иностранцев, дистанционный контроль, самоконтроль, тесты, мобильные устройства, BYOD, One Drive, MOODLE.

THE USE OF BYOD TECHNIQUE MOBILE ELEMENTS ON THE CLOUD ONEDRIVE AND MOODLE PLATFORM FOR THE FOREIGN STUDENTS RUSSIAN LANGUAGE OF PHYSICS TEACHING

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Abstract. Some results of application of BYOD technologies on the basis of mobile devices for Internet access in training of foreign students of preparatory faculty in bases of Russian of physics are presented. Possible approaches to formation of the case of minimum sufficient terms of physical science and the principles of creation of test tasks are described.

Keywords: the language of physical science, Russian as a foreign language, training of foreigners, remote control, self-control, tests, mobile devices, BYOD, One Drive, MOODLE.

Introduction. Foreign students of the preparatory faculty of the University teaching in the language of physical science in scope of the Russian as a foreign language for specific purposes requires great skills and teamwork of Russian

teachers, as well as their colleagues from the departments of physics and computer sciences [6, 10]. Only joint efforts of developers can enhance and improve the system of formation of the basic communication competencies in the Russian language of the physical science of foreign students. They include student's skills and abilities in proficiency in scientific style of speech on the basis of modern software and hardware and information technologies, in particular mobile online services. When using the BYOD techniques we turn any audience in the computer classroom with all the possibilities of Internet communication [12].

The basis of the educational process in the foreign students' Russian language of physics teaching is a set of printed manuals, developed jointly by the teachers of Department of Russian language and Department of physics of the preparatory faculty [2, 3, 4, 5, 9]. Simultaneously the media complex in physics was developed [11]. Currently at the preparatory faculty the dynamic learning environment MOODLE is under implementation. This system provides a web interface for mobile access to electronic educational online resources prepared by a teacher, which are correlated with the set of the textbooks. Author electronic resources can be considerably greater in volume compared to the printed versions. At the same time the electronic form of these developments can be equipped with elements of feedback. And we consider that to be of a special importance in the process of formation of basic skills in educational communication [7, 8]. The latter ones act as instruments of control and self-management in language learning.

Purpose. To achieve the goal of revitalizing and improving the educational process it is necessary to form a system of support for BYOD-learning. The system concerns to the solution of a number main problems, namely:

- 1) acquisition of basic lexical and grammatical material of all significant parts of speech of the Russian language of physical science,
- 2) mastery of the basic structures of the language of science,
- 3) mastering the ability to make a transformation of structures,
- 4) mastering the ability to highlight in the phrase grammar base and complicating its distributors – participles and verbal adverbs etc.
- 5) mastering the basic concepts of physics and physical terminology
- 6) mastering in the computer software use as a tool for educational and professional communication.

Methodology and materials. Foreign students who study physics in Russian and in need of passive and active mastery of the linguistic means of this scientific style of speech subtype should have words that are grouped both by subject and conceptual grounds, and grammatically.

Condition of such problems solution is a systematic approach to the description of lexical and grammatical material of the Russian language of physics,

which allows setting the students a solid language base that operate various parts of speech. Here the next set of problems arise:

- to study the composition and structure of the Russian language of physics;
- to train future physicists and engineers to distinguish parts of speech;
- to understand the specifics of their functioning in the Russian language of physics science;
- to master the ability to combine in the sentence different parts of speech according to the rules of Russian grammar;
- to make necessary replacement of parts of speech.

Features of the behavior of parts of speech in the language of physics as follows: a large number of verbal nouns and noun forms, the preferred use of verbs imperfect, reflexive verbs, passive forms of verbs, the frequent formation of adjectives from nouns and adverbs from adjectives, the definitive and the relative are frequent among pronouns.

With regard to the sacraments (especially the short in the role of predicate) and of adverbial participles, which are abundant in the language of science, because they are forms of verbs, their formation and use must be carefully presented to students and discussed with them. The official parts of speech – prepositions, conjunctions, particles, performs a grammatical role in the language of physics as lexically marked.

The act of the text constructing in Russian (finding new information in the end of the sentence) extremely complex for the perception and production of foreign students – this also should be trained.

To accommodate the learning of such language peculiarities of the Russian language of physics only unlimited volume of e-textbooks is useful, whereas the printed manual would be better used as initial elements to support the presentation of linguistic material.

For nouns significant are the indication on the lexical compatibility of words (a phrase constructed on the basis of subordinating connection, alignment and management, for example: физическая величина, значение величины) and word formation (for example: физика – физический - физик). With regard to grammatical meanings of gender and number, the foreign students when explanations of grammar able to recognize the gender of the noun to form its plural.

For example, the noun «круг» (circle): «окружность» (circumference) (.female gender) «круговое движение» (circular motion), «инерция» (inertia): «закон инерции» (the law of inertia (Genitive case.)), «инерциальный» (-ая,-ое,-ые) (inertial), «инерциальная система отсчета» (inertial reference frame), «инертность» (inertia (female gender.)), «свойство инертности» (the property of inertness (Noun + Noun.)).

Special attention is paid by Russian teachers to verbs, which are painted in detail: specify their conjugations, mandatory questions demanded by the valence of a particular verb, there is a case, examples of collocations on the basis of subordinating connection, coordination, management, contiguity, and derivative words, i.e. verbal nouns, and then gives examples of sentences in which this verb functions in its various forms.

For example, the verb «деформировать» (to deform): 1st conjugation, что (what?) Под действием чего (Under the influence of what?) Accusative case., тело (body), пружину (spring), нить (thread), опору (support), под действием силы (under the action of forces), деформация (deformation).

«Внешняя сила деформирует пружину. Под действием силы тело деформируется (возвратный глагол). Деформированная опора действует на тело. Сила упругости противоположна направлению деформирующей силы. Мы говорим об упругой деформации» (External force deforms the spring. Under the force of the body is deformed (the reflexive verb). Support acts on the deformed body. Elastic force opposite to the direction of deforming force. We're talking about elastic deformation.)

Among the adjectives used by the language of physics, a large number of motivating which are based on nouns and participles that have passed into the category of adjectives and became the terms. In addition to full of adjectives and participles, the language of physics successfully operates and brief, which play the role of predicate in a sentence, and therefore functionally loaded.

For example, «условие – условный (-ая,-ое,-ые) – условно: условно считать неподвижным; бесконечный (-ая,-ое,-ые) – бесконечность – бесконечно: бесконечно малый промежуток времени; натягивать – натянуть – натяжение – натянутый (-ая,-ое,-ые): сила натяжения нити; результат – результирующий (-ая,-ее,-ие), результирующая сила; направлен (-а,-о,-ы): Силы трения направлены по прямой линии, касательной к поверхности контакта; равен(-а,-о,-ы): Модуль вектора перемещения и путь равны».

Adverb clarifies a verb. It is usually formed from adjectives and participles, which in the early derivational chains often have a noun as well as by word. For example, «перпендикулярный – перпендикулярно: Сила давления направлена перпендикулярно поверхности опоры; одновременно: Тело может двигаться поступательно и одновременно вращаться вокруг некоторой оси» (perpendicular to, perpendicular, the Force of pressure directed perpendicularly to the surface of the support; at the same time: the Body can move progressively and simultaneously rotate around a certain axis).

Pronouns and numerals are also involved in the formation of scientific information in the proposal. The first place among the relative pronouns takes definitive and, rarely demonstrative, and interrogative in after text jobs. Cardinal



numbers – from one to thousands, as well as the serial. For example: «Известно, что все тела в природе притягиваются друг к другу. Сообщающимися сосудами называются два или несколько сосудов, которые соединяются друг с другом»(It is known that all bodies in nature attract each other. Communicating vessels is called two or more vessels which are connected to each other). Status categories words to some extent are used in the language of physics: « Можно найти данную физическую величину по формуле. Нужно запомнить следующие правила...» (You can find this physical quantity according to the formula. Remember the following rules).

The language of physics uses all the primitive prepositions: « сила тяжести приложена к телу, под действием силы тяжести, для ускорения свободного падения » (the force of gravity applied to the body, under the action of gravity, for the gravitational acceleration).

To the greatest extent the language of physics involved subordinating conjunctions, such as conditional, temporary, targeted: «Чтобы тело находилось... Если жидкость находится в равновесии...Когда точка приложения силы реакции опоры...» (That the body was... If the liquid is in equilibrium...When the point of application of the reaction force support...)

The language of physics uses formative particles: « Пусть тело движется прямолинейно и равномерно. Шарик отклонился бы от положения равновесия... » (Let the body moves rectilinearly and uniformly. The ball has deviated from the equilibrium position).

Such language material, clearly and correctly presented to foreign students, provided them with language training, teaches them to the correct manipulation of linguistic units.

Using the principle of «From language to speech», teachers make it possible to achieve good learning results, because this approach increases its efficiency.

The use of the BYOD cloud technology greatly increases the quality of foreign students learning of the lexical and grammatical material of the Russian language of physics. Mobile access allows students to work remotely in online mode. An important difference from traditional printed books is the ability to monitor the work of students by teachers of the Russian language. The teacher obtains the opportunity to receive information about the number of attempts to perform the task, execution time and the student's results shown.

For this, we used the Excel-Survey/One Drive tool as well as a built in system of interactive lectures, surveys, questionnaires and tests in MOODLE. All these tools allow us to design test materials with the inclusion of all major types of issues and they have no restrictions. It should be noted that in Excel-Survey/OneDrive, there is no built-in mechanism of formation of the samples and randomization of questions and answers. So it can more effectively be used for

boundary control, or to create our own versions of special online tools to support learning.

The subsystems of electronic training controls under development objectives are :

- 1) assistance in the self-study of foreign students in the mobile mode,
- 2) automation control of training in the form of the student (self-control) – the teacher/ the school/ University.
- 3) automation of preparation and publication of reports and other materials.

This set of goals erases the following set of problems:

- 1) development of techniques for automated remote training and testing (a survey system),
- 2) the selection of the software and the tool base,
- 3) dock the selected tools.

At the initial stage we faced an extremely acute question of selection of language material. As shown, the optimal solution was to quantify the amount of vocabulary depending on the parts of speech as follows: nouns – 100 units, adjectives – 150 units, 200 units of verbs, adverbs – 50 units.

Questions on linguistic material was prepared on the «From form to content» as well as «From content to form» principles For example, in tests on nouns, students are asked to determine for each of the plurality of gender, number, case, form, the ability of words to compatibility. Conversely, in this case from the set students should determine the form of the word. In tests with the verbs students need from the set on the form to identify the person, number, tense, choose a conjugation paradigm, valence. Conversely, having this set or any of the bundle categories they are to determine the form of the verb

Media complex developers focused on the implementation of the following linguistic tasks:

- 1) development of lexical physical terms compatibility;
- 2) development of the case system and verbal forms in a scientific context;
- 3) development of syntactic structures and their implementations in scientific language.

Implementation of these tasks was followed by the tests of number of types:

- 1) tests for approval kind and number of adjectives and nouns;
- 2) tests on the use of prepositions, participating together with the endings in the formation of case grammatical values;
- 3) tests to determine the cases of nouns in the syntactic context;
- 4) tests for the presence of the verbal word form;

5) run on understanding the functioning of words and word collocations on «Basic concepts in mechanics».

Given the peculiarities of application of electronic web resources implemented in the system of the teacher's information and supervisory tools for monitoring the training of foreign students of the preparatory faculty in the basics of the Russian language of physical science. These products are made in the form of electronic tables (Excel spreadsheets) and posted in the appropriate section of the cloud complex in the One Drive disk with electronic versions of standard textbooks. Hyperlinks to the files of the manuals and tests are included in the pages of the offices of lecturer on the University portal and MOODLE. The set of control includes two groups – Trainers of terms and Tests.

To support the solution of the above described tasks of foreign students teaching on Russian as a foreign language of science media complex includes interactive elements for training and monitoring of the achieved level of mastering the current language-acoustic material. It is completing the mini tests embedded in slides, simulators, tests on the topics of the manual and sets options for mid-term and final testing. Language mini tests are included in the presentation in parallel with tests in physics. Their presence allows us to combine the specialist training with the language in the mode of unity. This approach through is quite important for teaching of the contingent of foreign students of the preparatory faculty. And it allows provide the synergy effect from combination of two educational directions – study of physics and language training.

EXCEL kits of tests for the preparation, organization and holding of the computer training and testing on scientific language of physics at the level of Russian as a foreign strange similar to those described above sets of test in physics. Base of 200 questions is also the basis of the simulator and test generator. Using these tools, a set of options with a given number of issues, and embedded environments tools verification is to be designed. Sets of test tools on scientific language of physics are designed in such a way that they could be posted online. They may be downloaded and used in standalone mode or when placing on Internet services such as MS-OneDrive, apply for webinars and self-control, including mobile access. These tests are extremely important and useful for training in Russian language because foreign students translate grammatical phenomena from their language into Russian language, making countless mistakes. The instructor provides tests which help to reorient the foreign students from grammar realities of their native language to realities of Russian language. So online tests seem to be indispensable for providing foreign students the necessary time to reflect specific grammar of Russian language and give the opportunity of constant training at a convenient mode, including removed access. Therefore, the advantage of the system of allocation and access for the media complex and built-in tests on

the Internet resource MS-OneDrive is the fact that can be used as taken in personal and outside of the classroom, self-study language training of foreign students.

Conclusions. Thus, summarizing the results of several stages of our research, we can conclude that the use of modern BYOD class mobile technologies to enhance learning and support of independent work of foreign students of the preparatory faculty while learning the basics of the Russian language of physical science can be effectively implemented on the basis of a combination of cloud-based resources such as MS One Drive and educational environment of the class MOODLE. This solved a significant problem of cost optimization of work and time of teachers and comfortable conditions of academic work of foreign students are provided.

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УДК 371.14 + 37.02 + 37.04 + 159.9

ДИСТАНЦІЙНА ФОРМА НАВЧАННЯ: МОТИВАЦІЯ ЗДОБУВАЧІВ ВИЩОЇ ОСВІТИ ТА ШЛЯХИ ЇЇ ПІДВИЩЕННЯ

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Анотація. В роботі розглянуто проблематика зміни навчальної мотивації здобувачів вищої освіти при використанні дистанційної форми навчання. Визначено причини її зниження та запропоновано шляхи підвищення позитивної мотивації.

Ключові слова: мотивація, освіта, дистанційна освіта, інформаційні технології, Інтернет-технології.