

**ИССЛЕДОВАНИЕ ВОЗМОЖНОСТЕЙ WEB-ПЛАТФОРМ, ИСПОЛЬЗУЕМЫХ ДЛЯ ОЦЕНКИ ЗНАНИЙ В СИСТЕМЕ ДИСТАНЦИОННОГО ОБУЧЕНИЯ**  
INVESTIGATION OF THE WEB-BASED PLATFORM  
POSSIBILITIES USED FOR KNOWLEDGE ASSESSMENT  
IN THE DISTANCE LEARNING SYSTEM

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**Аннотация.** Рассмотрены Web-платформы, позволяющие разрабатывать системы тестирования для контроля знаний обучающихся в режиме дистанционного обучения. Проведен анализ Web-платформ по критериям, наиболее важным для образовательной деятельности преподавателя, представлена их краткая характеристика.

**Ключевые слова:** образовательный процесс, дистанционное обучение, онлайн-обучение, Web-платформы, тестирование, контроль знаний.

**Abstract.** This article discusses some Web-platforms that allow establishing tests for students' knowledge assessment in distance learning. The analysis of Web-platforms was conducted according to the criteria that seemed to be the most important for the educational activity of the teacher. A brief description of each Web platform is also presented.

**Keywords:** educational process, distance learning, online learning, Web-platforms, testing, knowledge assessment.

Due to the spread of coronavirus infection, the transition of higher educational institutions to the online study mode (distance education) has become a new entity. Distance education is a type of study-

ing that is fully or partially carried out by using information devices and technologies [1, 2].

Nowadays, three types of distance education are being implemented: synchronous, asynchronous

and synchronous-asynchronous Web-learning [3]. These types of Web-learning can be realized effectively on the basis of network resources, and also supplemented with extra materials and sources. In addition to distance learning, learning management systems (LMS) are actively developed and widely used, such as Moodle, Vimbox, Google Classroom, Education.Yandex, etc.

In the second semester of 2020, the synchronous type of Web-learning was implemented in natural science classes at the foundation program of the Higher School of International Educational Programs (HSIEP) of Peter the Great St. Petersburg Polytechnic University (SPbPU). During synchronous Web-learning various Web-platforms were tested, also their advantages and disadvantages were identified, as well as capabilities and functions.

It is known that the assessment of the achieved results is an essential part of any educational process [4]. Thus, the search for appropriate educational software that can be used to examine the current knowledge of each student is relevant. It should be noted that knowledge assessment is fundamental in distance education, since it acts as a «feedback» with students, evaluates the effectiveness of pedagogical and organizational activities.

In Web-learning, the simplest and most common method of knowledge assessment is testing. Since it saves a lot more time and effort in checking students' tests, and gives an objective assessment of the teacher's activities. However, distance learning imposes a number of restrictions on the testing procedure. For example, it prevents obtaining reliable information due to the active use of additional materials and the «boundlessness of the Internet». Thus, distance testing does not always fully reflect the level of students' current knowledge.

The purpose of this investigation is assessing the capabilities of Web-platforms appropriate for monitoring the students' knowledge in testing form for the natural science disciplines in the Web-learning system.

This paper presents and discusses the characteristics (table) of some Web-platforms. The Web-platforms were evaluated according to the criteria that seemed to be most important for the teacher's activity. Table 1 shows that the presented Web-platforms partially have similar characteristics. For example, they all work free of charge. However, each service turns out to be unique and

different from others in terms of interface, functionality and purpose of use.

Based on Table, a brief description of the features of these resources and their advantages and disadvantages over other Web-platforms can be provided.

1. Moodle is a course management system known as Learning Management System or Virtual Learning Environment. It's complex for learning both for teachers and students. This LMS provides the ability to create a variety of testing options. However, Moodle is the most flexible, because students from different countries can use it. In addition, it allows putting shutdown on exterior programs while passing the tests.

2. Google-Forms is an online service for creating feedback forms, online tests and surveys. Google Forms allow generating unlimited number of questionnaires for a large number of respondents. An invitation to participate in testing is automatically generated as a link. Upon completion of testing, the platform creates an Excel results table in Google Docs, which displays all the responses received. However, not all users have access to registration in Google Services.

3. Yandex-Forms is a service for creating surveys, collecting feedback, accepting applications, conducting tests and quizzes. Its functionality is similar to Google-Forms, but does not require registration with Google Services. It has a difference in the output of results and external design.

4. Kahoot! is a gaming-learning platform used as an interactive educational technology all around the world. Kahoot! allows working out new topics and consolidate knowledge and skills in the interactive game form. However, Kahoot! is designed for use in face-to-face classes, but it can be adapted to Web-learning as well.

5. Canvas is a resource for creating full-fledged online courses with functionality close to Moodle, but does not require special licensing. Any registered user can create their own Massive Open Online Course (MOOC).

6. Online Test Pad is a website for creating not only online tests, but also crosswords and even full lessons including theoretical part and – as practical part – testing.

Among these Web-based platforms, the most appropriate and effective platform is Moodle, since it includes all the possibilities for creating tests and

Comparison of the capabilities of Web-platforms

Criteria for evaluation	Moodle	Google-forms	Yandex-forms	Kahoot!	Canvas	Online Test Pad
Availability for use in different countries of the world	Yes	Partially <sup>1</sup>	Yes	Yes	Yes	Yes
Various languages support for interface	Yes	Yes	Yes	No <sup>2</sup>	No <sup>2</sup>	Yes
Free Web-platform	Yes	Yes	Yes	Yes	Yes	Yes
Complex user interface	Yes	No	No	No	Yes	Yes
Ability to use different types of questions	Yes	Yes	Yes	Yes	Yes	Yes
Ability to give detailed and short answers	Yes	Yes	Yes	No	Yes	Yes
Ability to attach files of different formats both for questions and for answers	Yes	Yes	Yes	No	Yes	Yes
Automatic compilation of tests from a bank of questions and tasks	Yes	No	No	No	Yes	No
Automatic test check	Yes	Yes	Yes	Yes	Yes	Yes
Limiting the time of the test	Yes	Special plaguns <sup>3</sup>	No	Yes	Yes	Yes
SafeBrowser compatible	Yes	No	No	No	No	No
The choice of design for the test	No	Yes	Yes	No	Yes	Yes
Consolidation of test results into a single document	Yes	Yes	Yes	Yes	Yes	Yes
Storage and analysis of test results	Yes	Yes	Yes	Yes	Yes	Yes
Possibility of feedback	Yes	No	No	No	Yes	Yes
Integration with YouTube, Vimeo etc.	Yes	Yes	No	No	Yes	Yes
Notes: <sup>1</sup> Inaccessibility of using this resource on the territory of some countries due to the lack of support for Google Services. <sup>2</sup> Support only English. <sup>3</sup> There are special extensions (plugins) that allow you to set limits on the test execution time.						

online courses. It should be noted that SPbPU has introduced this platform to all institutes, which actively use this platform for distance learning.

The main disadvantage of Moodle is the lack of its own server capacities. It means that not every educational institution can afford to have Moodle. In this case, it was presented to compare with other possible Web-platforms that could partially compensate or completely replace it.

It is important to notice that this paper does not consider such resources as edx.com, courser.com and other popular platforms for MOOCs, since these Web-resources have similar character-

istics to Moodle. Moreover, these Web-resources imply strict requirements for materials and tasks published on these platforms. Materials that are established in these resources go through several cycles of moderation, which creates an obstacle to the timely publication of the course.

Conclusions: Among the numerous options of software, users can choose the one they see as the most convenient for operating. However, in the format of distance learning, it is important to understand all the advantages and disadvantages of Web-platforms analyzed, and to choose appropriate platforms according to the assigned goals.

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