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International Scientific Conference**THE USAGE OF BIGBLUEBUTTON FOR ORGANIZING
INDEPENDENT WORK OF STUDENTS IN MOODLE**

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**Abstract**

The article is devoted to the key questions of distance interaction between students and teachers in Moodle. The purpose of the study is to determine the capabilities of the BigBlueButton module for organizing independent work of students and to describe the methodological aspects of distance interaction of a future bachelor in the course of study the disciplines in the field of "Pedagogical Education". The main research methods were the analysis of scientific literature devoted to the problems of organizing independent work of students and the use of modern information and communication technologies in education; the study of normative documentation related to the educational process at university; generalization of the experience of distance interaction between students and teachers and empirical research methods. As a result of the study, the authors described the main requirements for the independent work of students. The article defines the independent work and various classifications of the independent work of students. Special attention is paid to the classification according to the method of organization, namely individual form of the independent work of students, work in pairs, work in small groups, and group work. The features of a shared chat, shared notes, and a room for group work of the BigBlueButton module for organizing independent work of students are described. The paper considers methodological solutions for organizing various types of independent work of students in the BigBlueButton module. Specific examples of how independent work is organized based on the use of Internet services have been given.

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Keywords: Independent work, shared chat, Group work, Moodle, BigBlueButton

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1. Introduction

The organization of the educational process at university under current conditions, which is associated with a significant role of distance interaction between its participants, the role of independent work of students is increasing, aimed at providing various forms of cognitive activity, developing the ability to set certain goals and achieve them, forming professional and general cultural competencies.

The concept of "independent work" is interpreted differently by different authors. Depending on the content, independent work is considered as a "method of teaching", as a "system of teaching methods", or as a "form of organizing educational activities".

Foreign authors believe that independent work plays a key role in students' success in learning and further professional activities, allowing independent lifelong learning.

Usuki (2001) suggests in her study that learning will be effective if students are aware of the need for independent work.

Saber et al. (2014), who researched independent learning of students, note that such learning is not performed in isolation, but it requires support from teachers, institutions, and society. In their view, the role of the teacher is to promote learning in a variety of ways appropriate to age, subject, related to available resources, and appropriate to students' needs in balancing a structured learning experience with independent learning.

Little (1996) believes that in independent learning, students can be responsible for the decisions concerning all the aspects of this learning, namely, defining goals; determining content and consistency; choosing methods and techniques to be used; overseeing the organization of the process; evaluating what has been acquired.

Independent learning does not necessarily mean learning alone. It also includes social interaction, the ability to create a favorable learning climate for oneself by collaborating with peers, teachers, and tutors (Usuki, 2001).

Reinders (2010) proposes a nine-step process for developing independent learning skills, including identifying needs, setting goals, planning to learn, selecting resources, choosing learning strategies, practicing, progress monitoring, evaluating, and reviewing.

Some scholars (Gil, 2015) point to the important role of the Internet in organizing students' self-directed learning, especially based on distance or electronic interaction with the help of Web services (Hao & Lee, 2015; Kompen et al., 2019).

Russian research considers independent work as a certain form of organization of training, which can encourage students to independently search for the necessary information, to creatively perceive and comprehend the educational material in the process of studying topics or sections of the discipline.

Independent work of students at Russian universities is one of the mandatory types of educational activities that ensure the implementation of the requirements of the Federal State Educational Standards of higher professional education (Federal State Educational Standard., 2020).

In our study, we focus on the organization of independent work in the case of distant interaction between the teacher and students, pointing out the main tools.

2. Problem Statement

Since teaching some disciplines at university is carried out based on distance interaction in Moodle in BigBlueButton, and independent work of students must be fully provided following the Federal Educational Standard, the problem arises, which consists in the lack of ready-made methodological solutions for organizing independent work of students in the above-mentioned environment.

3. Research Questions

The subject of the study is the determination of the methods and techniques for organizing various types of independent work of students in Moodle through BigBlueButton.

To solve the above problem, it is necessary to highlight the following issues.

BigBlueButton has a set of elements for organizing online interaction. The main task is to determine how the elements of BigBlueButton affect the organization of the independent work of students.

There are several ways to classify the independent work of students. If the place of the organization of independent work is considered to be its characteristic feature; independent work in such a way can be divided into in-class and out-of-class. According to its characteristic feature, in other words, the method the independent work is organized; it is divided into the individual form of independent work, work in pairs, and work in small groups and group work (Merenkov et al., 2016).

Another question that it is advisable to focus on is to determine which types of independent work are preferred when using BigBlueButton.

In the course of conducting independent work, the teacher uses a whole range of digital tools. This raises the question of which additional Internet services are preferable for integrating them into the learning process using BigBlueButton.

4. Purpose of the Study

The purpose of the study is to determine the capabilities of the BigBlueButton module for organizing independent work of students and to describe the methodological aspects of distance interaction of a future bachelor in the course of study the disciplines in the field of "Pedagogical Education".

5. Research Methods

The main research methods were the analysis of scientific literature devoted to the problems of organizing independent work of students and the use of modern information and communication technologies in education; the study of normative documentation related to the educational process at university; generalization of the experience of distance interaction between students and teachers at pedagogical university.

The study was conducted in the 2019-2020 academic year at Omsk State Pedagogical University. The study involved 28 teachers from various departments of Omsk State Pedagogical University who were preparing bachelor students in the field of "Pedagogical education".

The methodology of this study was based on the activity-based approach, which allowed us to develop conditions for organizing independent work of students within the framework of distance interaction between a teacher and a future bachelor. Assessment of the level of the teacher's readiness to organize independent work of future bachelors in the BigBlueButton module was carried out using a questionnaire.

6. Findings

As part of the study, a survey of university teachers was conducted to determine the teachers' readiness to use the BigBlueButton module for organizing independent work of students. It was revealed that the teachers (92%) used the BigBlueButton module to organize distance interaction with students, while only 30% of the respondents organized the independent work of students with the capabilities of this module. The results of the survey showed that the respondents used the elements of the BigBlueButton module to activate students' cognitive activity in the classroom: shared chat (90%), a room for group work (53%), a screen demonstration (63%), whereas the capabilities of these elements for organizing independent work of students were not used.

Let us consider the conditions for organizing the independent work of students, taking into account the specifics of distance interaction in Moodle.

One of the means of organizing the distant independent work of students in Moodle is the BigBlueButton module (Spirina et al., 2017). Let us describe the module's capabilities concerning such forms of independent work as an individual form of independent work and group form.

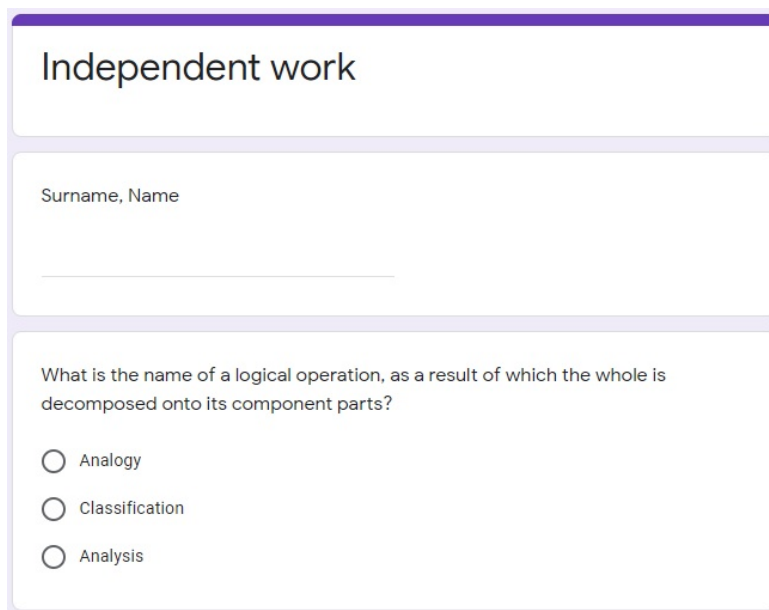
In the course of organizing individual forms of independent work, it is advisable to use the capabilities of the "Chat" window, designed for exchanging messages between conference participants (Kurganova & Korobeinikova, 2020). To use the chat effectively, self-help tasks must have a short answer (a number, a word, a sequence of letters or numbers), which allows a student to quickly enter the answer into the chat using the keyboard.

The individual form of independent work can be realized in two ways (Kameneva & Bondarenko, 2018).

1) All the students perform the general task individually and send the answer to the chat from the "Public" tab, the information from which is available to all the participants of the conference. In an online class, students can be invited to take a virtual podium (the first three places are three correct answers in the chat) or wait for a certain percentage of correct answers.

2) Students perform differentiated tasks and send the answer to a private chat, selecting the "Parameters" tab as a teacher interlocutor. With the help of a private chat, the teacher can also comment on the response of a particular student, or use quick reactions to implement feedback.

If the teacher needs a detailed analysis of the results of individual independent work, tasks can be implemented using various services that use automatic verification and instant feedback. To do this, the teacher can send a link to the corresponding service and invite students to follow this link in the chat window of the BigBlueButton module. Here is an example of independent work implemented using Google forms, link (<https://forms.gle/8kt3Nb8Waxe8GKk17>) on which the chat for all participants is placed in (see Figure 1).



Independent work

Surname, Name

What is the name of a logical operation, as a result of which the whole is decomposed into its component parts?

Analogy

Classification

Analysis

Figure 1. A fragment of independent work is implemented using the tools in Google Drive

The tools of the BigBlueButton module allow students to organize independent work in a group form. The teacher is allowed to randomly form groups of students, as well as independently arrange students in groups in the "Rooms for group work" window. To increase the effectiveness of such independent work, groups must be formed with a distribution of roles; the group member performs a strictly defined part of the task and is fully responsible for his part of the work (Raskina & Kurganova, 2020).

For example, within the framework of one of the courses, students were asked to develop a set of logical tasks aimed at the development of such mental operations as analysis-synthesis, classification, generalization, concretization, and comparison. As part of this task, student groups were formed (4-5 people per group). In the "Group Rooms" window, the teacher defined the number of groups, distributed students into groups, and limited the discussion time.

After clicking the "Connect to the session" button, students were assigned to a group to discuss the characteristic features of the workbook with logical tasks for preschoolers and distribute of types of logical tasks among the group members following the leading mental operations formed with the help of these tasks. The features of the BigBlueButton module allowed the teacher to join any of the groups and participate in audio discussions.

At the next stage of independent work in a group form, the students needed to create a workbook with logical tasks for preschoolers and jointly arrange it in a Google document created by the teacher on his Google Drive for each group. Links to documents can be conveniently placed in the "General notes" window, which can be created before the start of the lesson.

In the course of performing independent work with the help of Google Drive tools, not only students have the opportunity to simultaneously edit the document, performing their part of the task, but also the teacher has the opportunity to leave their comments or questions to certain logical tasks for preschoolers.

One of the methods for monitoring the independent work of students is the protection and presentation of the developed project. Using the BigBlueButton module's "Screen Demonstration" feature,

the students were able to present their work. Since there is a possibility of two-way voice communication, students were able to ask questions in real-time and express their opinion about the presented set of logical tasks.

7. Conclusion

Let us summarize the main conditions for organizing independent work of students within the framework of distance interaction between a teacher and a future bachelor, and give the main conclusions on the research issues.

According to the Federal State Educational Standard (Federal State Educational Standard., 2018) independent work of students is one of the mandatory requirements for the organization of the educational process. Elements of the BigBlueButton module: shared chat, shared rooms for group work, shared notes, as well as the "Screen Demonstration" function, allow the teacher to increase the effectiveness of independent work of students in the process of distance interaction, forming students' self-organization and self-education skills.

Experimentally, it was found that with the help of BigBlueButton, it is possible to carry out all the forms of independent work. Depending on the tasks set by the teacher, it is advisable to choose one or another type of independent work and implement it using the appropriate BigBlueButton elements.

As additional services for integrating them into the learning process using BigBlueButton, Google services are the most effective, since their wide range allows the teacher to implement various types of student work.

Thus, the results of the study show that the created didactic conditions, which allow organizing distance interaction between students and teachers using BigBlueButton elements, ensure the effectiveness of the independent work of students.

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