

## ADVANTAGES OF USING CLOUD SERVICES TO MONITOR STUDENT LEARNING DURING THE TEACHING PROCESS

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### ABSTRACT

This article discusses cloud technology-based on network services and how to use them to monitor student learning. It also provides a practical way to organize students' independent study of Information Security and enrich it with information resources in a Google classroom network service based on cloud technologies.

**Keywords:** education, cloud computing, cloud technology, cloud services, cloud networking platform.

### INTRODUCTION

The state of development of modern technologies depends primarily on the intellectual potential of society, including the development of education. Today, the content and quality of education are considered a priority in society. In the developed and developing countries of the world, special attention is paid to the digitalization of education. In this regard, ways to develop education, increase its effectiveness, the introduction of modern pedagogical and information and communication technologies in education are gaining popularity. The development of Internet technology is leading to the creation of new tools for providing information resources to learners. A number of technologies have been introduced to provide information resources for distance learning in educational institutions. One such technology is Cloud Technology. Therefore, the use of network services based on cloud technologies is one of the most effective ways to meet the needs of today's educational institutions.

The number of users of the cloud computing industry and the range of services they provide is growing worldwide due to its convenience. Also, with the increase in demand and demand for cloud services, the amount of load on the system is increasing.

Cloud-technology based on network services are also integral as an aid in monitoring student knowledge. Controlling the knowledge and skills of students is one of the main parts of the educational process and is the only didactic and methodological system of the educational process. Monitoring allows students to assess their actual level of knowledge and the dynamics of their mastery of the learning material and to identify gaps in knowledge, as a result of which it is possible to draw appropriate conclusions and make corrections about the characteristics of teaching.

Particular attention should be paid to the organization of educational activities using modern information and communication technologies, analyzing possible solutions to increase the effectiveness of the organization and monitoring of student activities. Network services based on cloud technologies are suitable for its effective implementation in the educational environment in accordance with the requirements, taking into account the specific features of practical forms of control over the learning process. With their help, you can not only control the knowledge and skills of students, but also reduce the employment of teachers and significantly optimize their work by automating control.

Table 1 below shows the capabilities of Google network services based on cloud technologies to control student knowledge.

Table 1 Opportunities to use cloud services to monitor student knowledge.

№	The name of the cloud service	How to use
1.	Planning and interaction services Google Calendar, Google Groups	Using the Google Calendar cloud service to ensure that students always know what tasks need to be completed, you can create a list of activities related to monitoring their learning activities, as well as a list of tasks to be completed by date. you can organize. Opportunity to receive an individual note via email. The group service is also used for the same purpose. Here you can create a mailing list, a web forum, and a question-and-answer forum for a specific class or group.
2.	Office packages Google Docs (text editor, spreadsheets and presentations)	In a text editor, students can complete a variety of assignments at home, create screen copies (if needed) along with lab reports and results of completed assignments. In a spreadsheet editor, you can design spreadsheets with subsequent visualization using a wide range of charts and graphs. Using the Google Presentation app, students can organize their learning activities in the form of a presentation and then present it as a final report on the work done over the Internet using file sharing.
3.	Google Forms	The application allows students to control their knowledge by creating different types of test assignments (selecting only one answer, multiple choices, compatibility, etc.) via the Internet.
4.	Google Sites	The application allows teachers to post assignments for lessons and students, the results of past tests and independent work, information about future work, comments and recommendations on the completion of previous reports received by cloud services, test results and other information related to educational activities.
5.	Google Blogger	It is a more dynamic option of organizing information in the form of an online event log (diary) compared to traditional web resources, the content of which allows participants to develop a blog with educational content that can be updated regularly. By adding new entries to the learning process, including text and multimedia information.
6.	Google Classroom	It is based on the creation of classes and courses, which allow students to transfer the necessary learning resources, create and present assignments, evaluate the performance of assignments and analyze the level of mastery. It also allows for student-teacher-student interaction.

Now let's take a closer look at one of these cloud services, the Google Classroom service. Google Classroom is a product of Microsoft, which includes educational services and customized services. The platform is designed primarily for distance learning, which provides opportunities for distance learning. The service is based on the creation of classrooms and courses, which allow students to transfer the necessary learning resources, create and submit assignments, evaluate the performance of assignments and analyze the level of mastery. It also allows for student-teacher-student interaction. Now let's look at creating a course on the Google classroom platform and enriching it with resources in the example of the subject "Information security". To create and use a course, you first need a Google account. Therefore, first of all, each user will need to create an account. Then, in the menu

section, select the Classroom button and go directly to the platform by pressing the button (Figure 1) [2].



Figure 1. The main menu of the Google classroom platform.

This window displays all the courses we have created if we have already created a course. If you want to create a new course, click the "Create course" button on the plus sign (+). This section also allows students to join a course created using the Join button. We will now consider how to create an Independent Education course in Information Security using the course creation button (Figure 2).

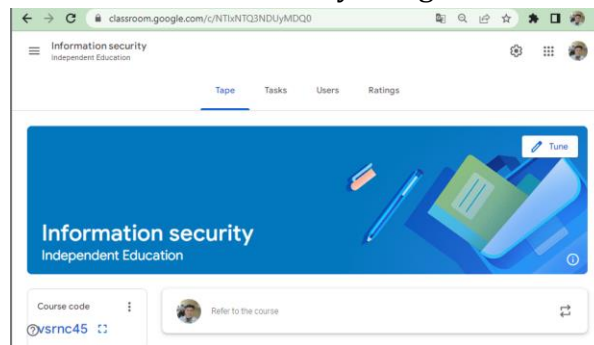


Figure 2. The main menu of the newly created course

The main menu of this course has four main sections: Tape, Tasks, Users and Ratings.

**Tape** – is the interface that opens when we go to the main page in this section. Tape is designed to display information that is important to the course, educational resources, and announcements posted by the teacher. It is also possible to include assignments, feedback from teachers and students.

**Tasks** – in this section, the assignments created for the course are placed directly on the created topics in a certain order, for example, we create first the first topic and then the second topic. After that, each topic allows you to place tasks, tests, questions and learning materials on the topic, for example, in the "Create + Exercise" section, the name of the task, instructions for completing the task, attaching relevant resources, etc. The amount of points to be paid and the deadline are indicated. The teacher will also be able to evaluate the students' work, leave comments on the work done and publish the results in the results section.

**Users** – this section can be used to engage teachers and students who are allowed to review assignments completed by students. All suggestions will be emailed to users. You can also join the course using the special course code provided in the main window of the course.

**Ratings** – allows you to view and edit the overall grade of the course if the teacher has published the results of the assignment in this last section.

The following is an overview of the main menu of the Tasks section of the course on the example of the subject "Information Security" (Figure 3).

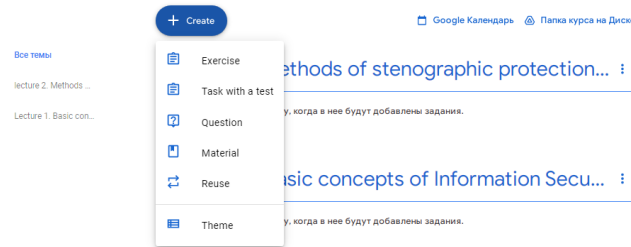


Figure 3. View the main menu of the Tasks section.

The teacher tells the students that they can apply for the information resources through the application address. The student can get acquainted through the application address by selecting the desired address (<https://classroom.google.com/c/NTIxNTQ3NDUyMDQ0?cjc=vsrnc45>).

If students activate the study materials on the topic, the content of the selected materials will be displayed on the screen using online office programs.

## CONCLUSION

The mobility and shared capabilities of network services based on cloud technologies open up a wide range of opportunities, as well as the organization of control over student activities.

Network services based on cloud technologies help not only teachers but also students to quickly and efficiently organize student activity monitoring without spending extra time and effort. In addition, using cloud technologies, it will also be possible to work with students who, for various reasons, have not been able to attend an educational institution for a certain period of time, and who, like other participants, are aware of the materials learned in the lessons. will be able to receive and assimilate training information in a timely manner. In this case, the teacher is able to remotely organize and monitor the learning activities of such students using mass cloud media, as it is enough to have a modern web-browser and global Internet to work with cloud applications.

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