

Peculiarities of using G Suite for Education services in the educational process of Polotsk State University

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Abstract. The article begins by defining e-learning as the use of technology for teaching and learning. There is a significant interest in identifying the advantages, disadvantages and challenges of using information technologies in the studying process for full-time studying, where e-learning is a component of the educational process, rather than a substitute for it. The article then turns to a practical case study of e-learning in Polotsk State University. The indicators and features of use of the G Suite for Education platform services in the educational process of Polotsk State University are analyzed.

1. Introduction

The development of the information society in the Republic of Belarus aims at improving the quality of general education and professional training of specialists through the widespread use of modern information and communication technologies (ICTs). The faculty members face fundamentally new challenges in terms of their ability to choose and use methods and tools to achieve educational goals in the mobile information environment [1]. There are increased requirements to the material, technical and methodological support of the educational process, as well as to forms and methods of training future specialists. E-learning has firmly entered modern life as a legitimate educational strategy).

1.1. Formulation of the problem

The concept of "e-learning" is a subject of disagreements and discussion among scientists and practitioners. As defined by UNESCO: "e-learning is learning through the Internet and multimedia". The term e-learning was first used (in a professional environment) in October 1999 in Los Angeles at the CBT Systems workshop [2]. The analysis of publications describing electronic technologies makes it possible to form a list of terms that authors interpret as "e-learning": Internet education, distance learning, network education, computer-mediated communication, computer learning, e-learning, virtual classrooms, information and communication technologies, open learning, telelearning, distributed learning, web learning, virtual learning [2]. Some believe that «e-learning» is only a common formulation or trend, while others think that it is a learning strategy or even an independent direction in pedagogy. In its most general form, e-learning is teaching and learning through information technology. More specifically, e-learning involves the use of any electronic data storage to provide all types of teaching and learning, both online and offline [3]

There is a significant interest in identifying the advantages, disadvantages and challenges of using information technologies in the studying process for full-time studying, where e-learning is a component



of the educational process, rather than a substitute for it. On one hand, the use of modern information technologies in the educational process has several undoubted advantages, such as:

- improving the quality of education through the use of technological innovations;
- improving the efficiency of the educational process by reducing tuition costs;
- increasing the number of educational services provided without increasing the space and infrastructure;
- increasing the information capacity of education through the use of alternative sources, compaction and structuring of educational information, its conversion into an actively functioning resource;
- individualization of training in the conditions of cooperative learning (the possibility of choosing an individual route, pace, level of complexity, mode of work, focused on individual psychophysiological, intellectual, motivational characteristics of the person being trained); combination of group and individual forms of training depending on its objectives, content and methods;
- development of the learner's communication skills as a result of joint learning, research, scientific activities using network technologies [4].

On the other hand, questions regarding the monitoring and evaluation of teacher quality have arisen. Even in full-time teaching, these questions are complex and important in the management of the quality of education, and with the use of information technology they are further complicated by the need to compare, identify the cause of efficiency or ineffectiveness. It is also difficult to assess the quality, content and presentation of the course for different disciplines (humanities, technical, linguistic). The problem of organizing electronic courses for the educational process is also topical: a teacher of high professional level may not know the technique of creating electronic courses that are effective from the point of view of training. [5]. In connection with the above, the immediacy of this research problem is beyond doubt.

1.2. The aim and object of research

Polotsk State University is a major educational, scientific and cultural center of the Northern region of the Republic of Belarus. Polotsk State University implements educational programs of basic and additional education, providing knowledge and practical skills necessary for the use of the advanced information and communication technologies in professional activities [6].

The aim of the study is to provide an analytical overview of the functionality and benefits of G Suite for Education cloud services, and to analyze the attitude of the students of Polotsk State University to the use of these services in the educational process.

The object of research is cloud services of G Suite for Education by Google.

The subject of the study is the integration of G Suite for Education cloud services in the traditional educational process and the creation of a mixed system of educational process organization using the web service Google Classroom.

2. G Suite for Education services in the educational process of Polotsk State University

Experiments on the use of cloud environments in the educational process have been conducted at Polotsk State University since 2007. This work has become particularly relevant since September 2011, after the rector of the University decided to open training of specialists through distance learning at PSU starting in September 2013. A working group was formed. The first task set by the University administration to the working group was to select the learning management system (LMS — Learning Management System) — a platform for deploying a form of distance learning for specialists. A comparative analysis of the most popular LMS systems in the Republic, Moodle and ATutor, and the above-mentioned platforms based on cloud services was carried out.

After analyzing the capabilities of modern information educational systems, the specialists of Polotsk State University have chosen the Google Suite for Education platform [7]. The decisive argument in favour of this choice was the fact that applications deployed on the basis of this platform are well integrated with mobile devices with the Android operating system, which are widely used in the student environment.

In August 2014, Google added a new service called Google Classroom to the Google Suite for Education platform. This service allows teachers registered in the system to create virtual classes for their disciplines and use them to distribute educational and methodological materials among students, organize and manage independent work of students, monitor the progress of the educational process, conduct progress and final control tests. The main features of Google Classroom are:

- Easy registration. When creating a class, a unique code is automatically generated, so students can join the class knowing it. This process eliminates the need to create preliminary lists of academic groups.
- Integration with Google Drive. When a teacher creates a new class, the "Class" folder automatically appears on their Google drive with new educational content for each class.
- Organization. When students use Google Classroom, Class folders are created on their Google drives with subfolders for each class they join.
- The automation of task distribution. When creating an assignment as a Google document, the platform will create and distribute individual copies of the document for each student registered in the class.
- Defining deadlines for completing tasks. When creating a task, the teacher specifies the deadline for completing the work. If a student submits a task before the start of the term, the "View" status appears on their document, which allows teachers to do the sorting.
- Work/Correction. When students have started completing tasks, the teacher can provide feedback when the student is in the "Viewing" status. When the work is returned to the student, the student switches back to the "Edit" status and continues working on the document.
- Convenient interface. Both teachers and students can see all tasks on the Google Classroom home screen. This allows to control the work in several classes at once.
- Communication. Thanks to a combination of classroom announcements created by the teacher and integrated task commenting capabilities, teachers and students always have the opportunity to keep in touch and keep up to date with the status of each task being presented.

Since September 2014, Google classroom has become the main service in Polotsk State University that provides information support for the educational process [8]

Here are some figures that characterize the intensity of use of the G Suite for Education platform services in the educational process of Polotsk State University.

At the end of October 2019 in the domain pdu.by there were 15,000 registered users. These are all University students and teachers who use the G Suite for Education platform services in the educational process. Thus, the University is among the top ten higher education institutions in the CIS countries in terms of the total number of registered users.

793 virtual classes created on the basis of the Google Classroom service are used in the educational process. The virtual classes contain 80,667 documents. These are educational-methodical complexes, lecture notes, lecture presentations, self-test tests, and other educational and methodological materials.

The volume of correspondence using the Google Mail service in October last year was 13,343 e-mails. At the same time from the results of the research it is known that in 80% of cases the mail in the domain pdu.by is used by students to communicate with teachers (64% of cases) or with classmates (16% of cases).

Immediately after enrollment all students are registered in the official domain of the information support system of the educational process of Polotsk State University – pdu.by. The Domain is linked to the G Suite for Education platform, and all the platform services are available to registered users.

At the beginning of the semester, during the orientation (overview) sessions, students receive instructions for working with Google Mail, Google Classroom, Google Drive and Google Calendar services, as well as access codes to virtual classes for each academic discipline studied in the corresponding academic semester. In addition, students receive the necessary teaching materials, both in electronic form and in the form of hard prints.

Teachers who hold classes in the relevant disciplines put lecture notes, lecture presentations, and test suites designed for self-monitoring during the studying process in virtual class created on the basis of the Google Classroom service. These materials are supplemented with links to Internet resources on the relevant discipline.

The current control over the implementation of the curriculum is carried out by sending control tasks which can be in the form of tests created with the help of the Google Forms service.

Final knowledge control activities are conducted during the exam session in the traditional form of exams or credits. At the same time, the final grade is influenced by both the result of passing the exam (credit) and indicators of academic activity of the student during the semester, recorded in the corresponding virtual class.

Control of the level of knowledge received by a student can be quite traditional, however, it should be noted that the quality of academic work significantly increases with the introduction of the rating system of control, as it allows systematic and differentiated assessment of all types of students' activities, and they themselves rationally distribute their study load, time and activities.

It should be noted that the Google Classroom service included in G Suite for Education can be used not only for teacher and students' work in the computer room. The Google Classroom service can be an effective electronic supplement to any university discipline as a system that organizes interaction between teacher and students within the subject outside the classroom (organization and performance of homework, synchronous and/or asynchronous interaction through the Internet, etc.). Using this service, a teacher is able to deliver materials in any digital form to each student personally, which contributes to the quality of education and, above all, to the motivation of students.

As practice shows, the use of modern computer technologies makes the educational process more attractive for students. It is proved by numerous positive reviews of those students and teachers who already use the service all over the world.

However, it should be understood that the use of Google Classroom and other similar educational platforms, which implies alternative forms of material presentation, task performance and knowledge control, does not exclude the use of online services as well as traditional textbooks. Moreover, it is not intended to replace them, but rather to be a convenient addition to classes built in a familiar form of live communication between a teacher and students.

In order to analyze the effectiveness of using information technologies in the educational process at Polotsk State University in March 2019, a feedback questionnaire (form) "Evaluation of students' use of cloud services G Suite for education" was developed on the base of Google Forms tool. The questionnaire poll was conducted in the period from April to September 2019. Its results and some additional statistical data are the main subject of this work.

Taking into the consideration that students took part in the questionnaire poll, it is not surprising that the vast majority of respondents are between 17 and 25 years old. Only 10% do not use Google services in the pdu.by domain. 94.5% of students use a home or work computer as a service access device, while 47.7% also use a mobile phone and 15.5% use a tablet.

Respondents rated the learning process using G Suite for Education services as generally positive. 79% of respondents rated 8 to 10 (where 10 is the maximum convenience rating) and found it convenient to work on the platform G Suite for Education.

According to the obtained results, the most useful of the assessed possibilities of using information technologies, according to the interviewed students, were permanent access to teaching materials/tasks; participation in online testing; possibility to perform and submit tasks through electronic environment; possibility to a teacher questions at any time, hyperlinks to resources, video lectures by teachers. In other words, most of the interviewed students consider it most useful to use the e-course opportunities directly

for learning rather than for communication and interaction with other students. Also, most students agree that an e-learning course will help them better prepare for the exam/credit (87.7%). Half of the respondents strongly agree on the need to use e-courses in all disciplines (53,4%), one third of the respondents see the need to use e-courses in all disciplines only as theoretical materials (32,9%), and one in ten does not feel the need for it (11,9%). One of the students' complaints is the imperfection of the technical basis for the implementation of e-learning. For example, at testing with an open variant of the answer, the system doesn't always take into account all correct variants, as a result the student's knowledge isn't evaluated objectively. There is such tendency also in other conducted researches [5].

Making these conclusions, it is impossible not to take into account the subjectivity of students' assessments, which are related to the conditions of studying a particular discipline and the form of control, due to the individual characteristics of the teacher, their vision of the course, their tendency to certain forms of training and control [9].

Thus, the use of the G Suite for Education platform in the teaching process at Polotsk State University has been widely spread and positively evaluated by both teachers and students. An analytical review of the functionality and benefits of G Suite for Education services has led to the conclusion that the services selected at Polotsk State University are an effective tool to improve the quality of the educational process, ensure timely completion, easy access and safe keeping of tasks, reduce the time spent on their creation, editing and tracking, contribute to a better disclosure of students' creative potential. According to the students' opinion, in general, the use of G Suite for Education in the educational process is a good idea and considered as a useful addition to traditional learning, contributing to the development of self-organization and self-discipline, effective use of time.

3. Conclusion

Information technology, of course, opens new opportunities in the teaching of any discipline, on condition that its integration into the educational process is reasonably organized. Digital technologies in education can not only lead to the emergence of practices that are simple alternatives to traditional ones, but also significantly change the learning process itself, since the tools used in activities affect the way of thinking [10].

However, the problem of insufficiently dynamic and person-oriented interaction between teachers and students remains urgent. E-courses complement, not replace, classroom work. Otherwise, the communicative and pedagogical aspects of educational activities suffer. The use of e-courses in the learning process encourages critical thinking and social activity of students, allows them to exercise control more consistently and makes it possible to strengthen an individualized approach to learning, generally improve the quality of learning, allows students to prepare better for future activities by deep immersion in the material of the discipline. According to experts, the mixed learning model has the greatest potential to improve the quality of education and optimize the educational process [4]. The mixed learning model allows you to radically restructure the educational process in accordance with the characteristics of a new generation of students brought up on the Internet and new forms of social communication [5].

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The significance of the work: the results of the study can be successfully used by teachers in a wide range of academic disciplines, as the use of Suite G cloud services makes the educational process cheaper, removes the need for a University in the content system administrator (all processes run on the Google servers) and content Manager (each teacher is responsible for the content of their course), taking it to a completely different conceptual level, while maintaining continuity with the traditional system of educational process organization

References

- [1] *The concept of informatization of the education system of the Republic of Belarus for the period until 2020* Retrieved from: <https://edu.gov.by/statistics/informatizatsiya-obrazovaniya.doc>
- [2] Sergeev A G 2012 *Introduction to e-Learning* (Monograph: Vladimir)
- [3] Janelli M 2018 E-Learning in Theory, Practice, and Research *Educational Studies Moscow* **4** pp 81-2
- [4] Veledinskaya S B, Dorofeeva M Y 2014 Smeshannoe obuchenie: sekretye ffektivnosti *Vysshee obrazovanie segodnya* **8** pp 8-13
- [5] Dvoryanchikov N V, Kalashnikova T V, Pechnikova L S and Frolova N V 2016 Electronic Learning in Educational Process: Problems and Perspectives *Psychological Science and Education* **21**(2) pp 76-83
- [6] Barun A, Dauhiala N avd Dauhiala D 2019 Staff training in terms of digital economy development: the experience of Polotsk State University (Republic of Belarus) *Atlantis Press*. pp 258-62
- [7] Oskin A F, Oskin D A 2016 The experience of using cloud technologies for building the educational information environment of a university *Higher School* **3** pp 18-22
- [8] Oskin D A, Oskin A F 2016 Experience of using the Google Apps for Education platform in the educational process of Polotsk State University *Informatization and Management Technologies: Materials of an International Scientific and Practical Conference* (Grodno: Yanka Kupala State University of Grodno)
- [9] Allayarova Z S, Kalashnikova T V, Moiseenko Y A 2015 Leadership as a Control Method in the Period of Changes *Proceedings of the International Conference on Research Paradigms Transformation in Social Sciences* vol 166 (Tomsk: Procedia Social and Behavioral Sciences) pp 43-7
- [10] Maloshonok N 2016 How Using the Internet and Multimedia Technology in the Learning Process Correlates with Student Engagement *Educational Studies Moscow* **4** pp 59-83