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CLOUD TECHNOLOGIES IN INFORMATIONAL AND METHODOLOGICAL SUPPORT OF UNIVERSITY STUDENTS' INDEPENDENT STUDY

Abstract. Based on the analysis of scientific and methodological sources, the article looks at the state of informational and methodological support of students' independent study. The authors conclude that insufficient attention is being currently paid in Ukraine to the implementation of informational and methodological support of students' independent study using cloud technologies. It has been determined that independent work as the dominant component of the students' educational activity in the framework of joining the European educational space requires a new approach to its construction, covering the whole set of innovative aspects. The general problem of education is the reduction of the number of classroom hours and transfer of a significant amount of study material to independent study. Such a situation requires further scientific analysis and the development of specific recommendations in order to improve the independent learning activities. On the basis of the content analysis of scientific articles on the professional training of university students, the directions of improving informational and methodological support of students' independent study were singled out on the example of the discipline "Modern Information Technologies". Studies have been conducted among the students regarding their readiness to use the informational and methodological support of independent study and it is determined that it is advisable to use Google cloud services and an educational site with educational materials for independent work. In the article the approaches to introduction of informational and methodological support of students' independent study are theoretically grounded and a model of informational and methodological support of independent study of university students is developed. Informational and methodological support of students' independent study is based on the integration of two classifications of independent work (in terms of the type of learning tasks and of educational and cognitive activity) that will be performed in the complex way and will facilitate the formation of university students' ability to organize and plan and the ability to work independently. For the discipline "Modern Information Technologies" an Internet resource is developed in the form of a site that contains the necessary information for performing independent work. Separately, an electronic calendar for the organization of independent student learning was developed. The integration of calendar elements into the

educational site has been carried out in order to ensure the functioning of the informational and methodological support of students' independent study. The methodological principles of informational and methodological support of students' independent study were developed, namely the use of cloud service Google Calendar in the course "Modern Information Technologies".

Keywords: informational and methodological support; independent study; cloud technologies; Google calendar.

1. INTRODUCTION

Formulation of the problem. Progressive development of science, technology and the rise of the information society necessitate not only the improvement of the higher education content, but also the creation of conditions in which the education system will quickly adapt to any changes.

Ukraine is currently participating in the TUNING international project "Tuning Educational Structures in Europe" – "Adjustment of Educational Structures in the European Higher Education Area" [1]. This project is the basis for improving national education in accordance with the requirements of the Bologna Process. The project identifies 30 general competencies (instrumental, interpersonal, systemic) reflected in the general training of modern university students. Among the 30 identified competencies, it is necessary to pay attention to the following two: "the ability to organize and plan" and "the ability to work independently" [1, p. 85]. These competencies are directly formed during properly organized independent study and are the result of it.

Article 50 of the Law of Ukraine "On Higher Education" [2] defines independent work as a form of organization of the educational process along with in-class and other forms of work. Article 58 of the Law "On Higher Education" states that scientific and educational staff of a higher education institution is obliged to develop autonomy among university students.

This is possible through the involvement of information technologies in the learning process and actualization of students' independent learning activities. Training and professional development of young people in modern conditions is impossible without independent study, which is conditioned by the constant growth of educational information, the change of the educational paradigm, and the improvement of information technologies in all spheres of practical activity.

Information technologies have become an integral part of the human society. Every year, more and more young people are using information technology and the Internet in their everyday life (for entertainment, communication, education) and professional activities. This is confirmed by the research conducted by Google [3]: 98% of respondents interviewed under the age of 25 turn to the Internet for personal reasons, 87% use a smartphone to access the Internet. Today, one Ukrainian under 25 years of age has 2.9 Internet connections. These data convincingly prove that modern young people are ready to use information technologies, Internet tools and cloud services in their educational activities and have all the necessary software and hardware.

Modern educators cannot stand aside this process and have to comprehensively develop and use new methods and forms of learning using information technologies and cloud services in particular.

Teachers have developed a large number of educational Internet resources. Online distance education courses are made accessible on the Internet; students are attracted to self-education through the use of mass open online courses. However, most students still remain passive in organizing their own independent learning activities. The study by A. Isaeva [4] convincingly shows that modern students experience difficulties staying concentrated and attentive for a long time and cannot accept large amounts of text information. It is often

difficult for them to organize their time, personal goals are often changed, and planning their own activities might be problematic. Students face one more problem, which is reducing the mechanisms of self-regulation (planning, monitoring, modeling, evaluation of results). All these problems need to be addressed in the context of students' independent learning.

Analysis of recent research and publications. Problems of organization of students' independent study were investigated by C. Hockings, L. Thomas, J. Ottaway, R. Jones [5] L. Belousova [6], N. Voropay [7], R. Gurevich [8], L. Yevsyukova [9], S. Kasyanets [10], and others.

The specifics of introducing cloud services and Internet technologies in education were researched by such scholars as Larry Pape [11], Z. Seidametova [12], S. Seytvelieva [13], Y. Trius [11], N. Morse [13], M. Shishkina [14], C. N. James [15], J. Weber [15] et al.

The use of informational and cloud technologies in self-study was analyzed by A. Bonyár, P. Martinek, O. Krammer, A. Géczy, Z. Illyefalvi-Vitéz [16], N. Voropay [7], O. Kopul [17], O. Fedorenko [18], and others.

N. Boyko argues that the main difficulties in students' independent work are connected with the lack of tools for the successful acquisition of new knowledge, which requires the constant mobilization of the will and attention, the maximum intellectual forces [19, p. 4]. In these conditions, the priority of developing the informational and methodological support of students' independent work is of paramount importance.

Independent study should be organized using tools that will stimulate and maintain a high level of students' motivation to study and provide easy and unhindered access to training and information materials.

Effective independent learning activities cannot be limited to the use of certain information technologies, but require the implementation of holistic informational and methodological support, which is based on a person-oriented learning paradigm.

Consequently, there is a contradiction between the existing level of informational and cloud technologies and their inadequate implementation in students' independent study as well as between the existing cloud technologies of organization, planning and management of educational activities and the lack of their integration into the informational and methodological support of independent study of university students.

The purpose of the article is to theoretically substantiate the principles and to develop the means of informational and methodological support for organization of independent study of university students in the course "Modern Information Technologies", based on the use of cloud technologies.

2. THEORETICAL BACKGROUND OF THE RESEARCH

Based on the definition by V. Slastonin [20], we will understand the informational and methodological support of independent study as a set of interrelated actions and activities aimed at helping students develop their ability to organize and plan, and to be able to work independently on solving their tasks.

Training future specialists is not possible without independent study as one of the main factors in the ability to work independently, organize and plan personal practical activities. This is due to the fact that students are able to develop the skills of using knowledge in practice only in the process of independent cognitive activity.

Today, there are a significant number of definitions of the concept of students' independent study. The analysis of scientific literature [6] – [10], [14] – [19] on the problems of independent study allows us to assert that this is a specific form of educational and scientific knowledge during which the comprehension of educational materials and independent problem solving are taking place. It consists of the purpose, the definition of the

object of activity and the choice of the means. Independent work is a pedagogical construct, with the help of which the teacher organizes and manages students' independent education.

Independent research and independent study in modern institutions of higher education are the main forms of student-oriented education. Independent work makes it possible to switch from reproductive techniques and technologies of knowledge accumulation to well-organized instructional activities aimed at developing general and professional competencies. Introduction of informational and methodological support of students' independent study gives a possibility to completely change the role of a teacher, who is no longer a central person in the educational process but a tutor and facilitator of students' educational activities.

The proposed approach corresponds to the direction of reforming education in the European Union as defined by the Tuning project [1, p. 63-64]. According to the project, the teacher in the informational and methodological support of students' independent study retains his/her usual activities, but additionally fulfils the functions of counseling, motivation, selection of educational materials and literature for independent study, and organization of students' independent study. As a result, the informational and methodological support of students' independent work allows changing the approach to educational activity and organization of result-oriented training.

Professional training of students under the guidance of a teacher, based on the means of informational and methodological support of independent work, involves integration of various types of collective and individual educational activities and is carried out both in and out of class. Management of students' independent study takes place depending on the level of student autonomy's formation: directly or indirectly.

Students' cognitive activity in the process of independent work is characterized by a high level of reflection and self-reflection. Informational and methodological support of independent work involves the gradual mastering of new material, revision, consolidation, practical application of the acquired knowledge in solving practical problems. The effectiveness of independent work depends on its organization, content, interconnection and the nature of tasks.

In accordance with the purpose of the study, we determine the types of independent work that should be included in the informational and methodological support of students' independent work using cloud technologies.

The analysis of relevant scientific sources [21] – [23] makes it possible to determine a significant list of types of students' independent work. N. Vanzha [21, p. 20-23] classifies them according to the didactic purpose, number of participants, and the place where independent work is conducted. N. Vinnichenko [22, p. 31-34], while classifying types of students' independent work, pays attention to the level of students' motivation, to how much compulsory independent work is, to the nature of educational and cognitive activity, and the time of independent work. O. Korolyuk [23] classifies these types according to the way independent work is organized, according to how much compulsory this work is, according to the way this work is controlled, and the type of learning tasks.

In the context of the introduction of cloud technologies in the informational and methodological support of students' independent work it is advisable to pay attention to the following classifications, i.e. the nature of educational and cognitive activity and the type of learning tasks.

Let us analyze the classification of types of students' independent work according to the nature of educational and cognitive activity. This classification is represented by the following types of independent work: sample work (reproductive), constructive-variation work, heuristic independent work and creative work. Thanks to these types of independent work, the formation of autonomy occurs naturally, from simple to complex. In independent

cognitive activity, the ability to move from simple to complex allows you to plan your own activities to increase the level of professional competence.

Classification of independent work types according to the type of learning tasks consists of independent work on solving tasks; independent preparation for laboratory and practical works; drawing up tasks; work with the textbook, educational, methodological and reference literature; individual practical tasks; tests; preparation for examinations and colloquia; homework; preparation of abstracts, reports; personal observations and experiments at home; work related to the construction of schemes, graphs of processes, production of models, illustrations, etc. [23].

Classification of independent work types according to the type of learning tasks is convenient for formalization in the form of specific educational tasks (content of independent work) using cloud technologies. The developed educational and teaching materials in accordance with this classification make it easy to organize the learning process and provide easy access to educational materials.

In this paper, we propose to provide informational and methodological support for students' independent study based on the integration of two classifications of independent work types (in terms of the nature of the educational task and the nature of educational and cognitive activity) that will be performed comprehensively and will facilitate the formation of higher education students' ability to organize and plan and ability to work independently.

Capacities that are formed when using informational and methodological support of independent learning activities are the basis for mastering professional competencies by students.

The analysis of studies on the problem of using information technology in student learning [11] – [19], [24] allows us to identify the main areas of cloud technologies implementation in the informational and methodological support of students' independent learning activities: expanding the opportunities for improving the quality of education, opening new opportunities for choosing individual trajectories of learning, use of cloud technologies for convergence of education and students' personal information space, convergence of educational and real professional activities.

The paper [24] investigates the problems of using cloud technologies in education, develops taxonomy of clouds and highlights cloud technologies for different types of students' educational activities.

Informational and methodological support of students' independent activity should cover the following educational tasks: processing of electronic documents, preparation of scientific and technical reports and documentation; solving computational problems; joint work, search and exchange of scientific and technical data; designing algorithms and programming; work with databases; modeling and designing for the solution of experimental and practical tasks in the field of professional activity.

The list of cloud services that can be used in training is quite large. For ordinary users (teachers and students), the main advantage is the availability of services on different platforms, the availability of a mobile application, ease of use and registration.

Teachers can use a variety of content management systems such as CMS Wordpress, Blogger, Wix, and others to organize informational and methodological support for students' individual activities and to place educational materials. CMS Wordpress content management system was used in this work.

Let us take a look at Zoho, Microsoft, and Google's cloud services that have a calendar function. Zoho supports its own programming interface for integration, but it is quite difficult to use. Google and Microsoft cloud services are more widespread and make it easy to export data, embed elements of cloud applications into emails, websites, blogs, and publish in social networks.

One of the benefits of using Google's cloud services, namely Google Calendar, in students' independent learning, is the large volume of mobile devices with the operating system Android and a built-in mobile application to access the cloud service. It should also be noted that the majority of the interviewed students already know how to use Google services and have appropriate accounts.

Thus, it is advisable to use the Google Calendar cloud service as the primary reminder of task deadlines in the independent study of higher education students.

It is advisable to use e-mail, messengers, forums to organize the interaction between a teacher and students in the course of independent work for counseling and support. All these cloud services are actively used by teachers and students and are easy to use.

It is possible to use any cloud services (Google Drive, OneDrive, Dropbox, etc.) for storing and exchanging data for teacher's verification of completed tasks. Students upload completed work according to the calendar's schedule for teacher's verification.

Designing a model for informational and methodological support of students' independent learning can simulate the process of interaction between teachers and students through cloud technologies in order to develop the ability to organize and plan and ability to work independently (Figure 1).

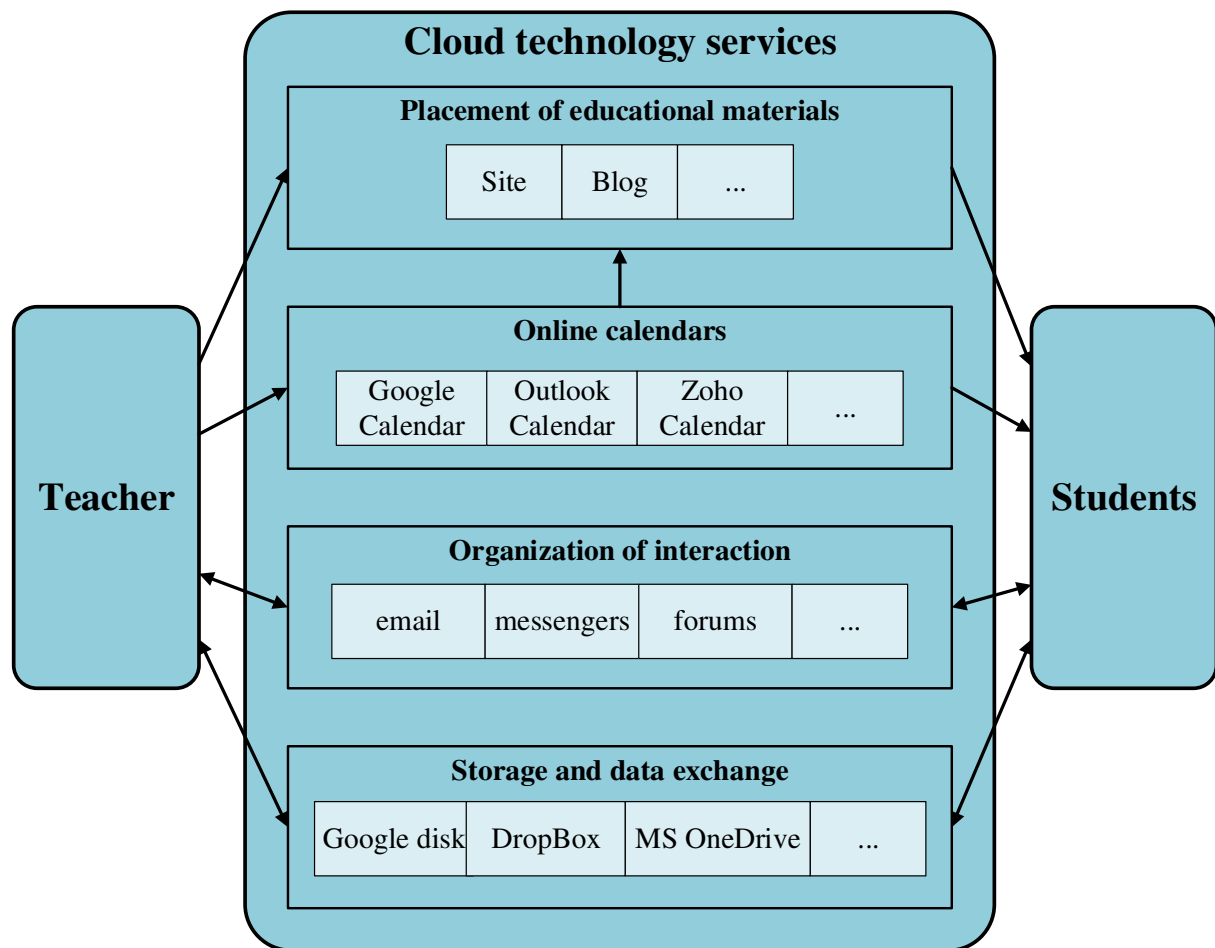


Fig. 1. Model of informational and methodological support of students' independent study

Let us consider the process of interaction between a teacher and students in accordance with the developed model of informational and methodological support of independent educational activities of higher education students.

The activities of the teacher are as follows: placing educational materials on the site for the organization of students' independent study; integration of the calendar with the site; setting up deadlines for completion of tasks with the help of Google Calendar (can be adjusted as needed); organizing student counseling and support during the coursework; verification and assessment of completed tasks; providing information about results.

Students' activities include integrating a calendar with a self-study schedule into their own cloud-based calendar (on a computer or phone), keeping track of dates of independent work, performing independent tasks posted on the site, consulting with a teacher as needed, downloading completed assignments for verification.

The main tool for organizing independent learning activity using cloud-based technologies is the Google Calendar service. Thanks to it, it is possible to implement all organizational measures for planning, conducting, performing various types of independent work, ensuring timely performance of tasks and drawing up reports.

3. FINDINGS

In the course of the study, the purpose was to confirm the relevance of the use of informational and methodological support of students' independent study and the main means of independent work organization. The research was conducted at the beginning of the academic year among first-year students of the Faculty of Physical, Mathematical, Computer and Technological Education of Berdiansk State Pedagogical University (BSPU), where, some time later, the practical part of informational and methodological support of students' independent study was introduced.

At the initial stage of the study, the following methods were used: questionnaires, statistical processing of the results using the MS Excel program. A questionnaire was developed to find out the students' opinion regarding the informational and methodological support of their independent study and the main means of independent work organization. The survey was conducted among 72 first-year students of BSPU. Relevance of the use of informational and methodological support of independent study and basic means of independent work organization were confirmed.

Informational and methodological support of independent study can be considered relevant only if it is actively used in practice. The questionnaire contained 10 questions, but four key questions were identified and analyzed, which were designed in such a way as to be able to assess the students' level of interest in practical use of informational and methodological support of their independent study and the main means of its organization.

In addition to confirming the relevance, it was necessary to determine what particular means students would like to use when performing their work. In order to do this, the following question was added to the questionnaire, on the basis of which the means of students' independent work organization would be selected: "What information technologies as a means of supporting student independent learning activities would you like to use?"

The questionnaire also identified the students' desire to have external factors that reminded them of the need to perform and defend the completed tasks of independent work in a timely manner and motivated them to work independently. To do this, relevant questions were developed and added to the questionnaire based on students' suggestions; the most urgent means of stimulating the implementation of independent work were developed and implemented in the educational process.

After conducting the questionnaire, an analysis of the results was made, which allowed us to draw the following conclusions: today, among the information technologies that organize students' independent work, the most relevant are Google services. Answering the question: "What information technologies which can organize students' independent work

would you like to use?” the students chose the Google services (52.78% of the respondents), 27.78% selected the sites where the teaching materials were posted. Among the students were those who never used any information technology in their training activities, they made up 19.44% (Figure 2).

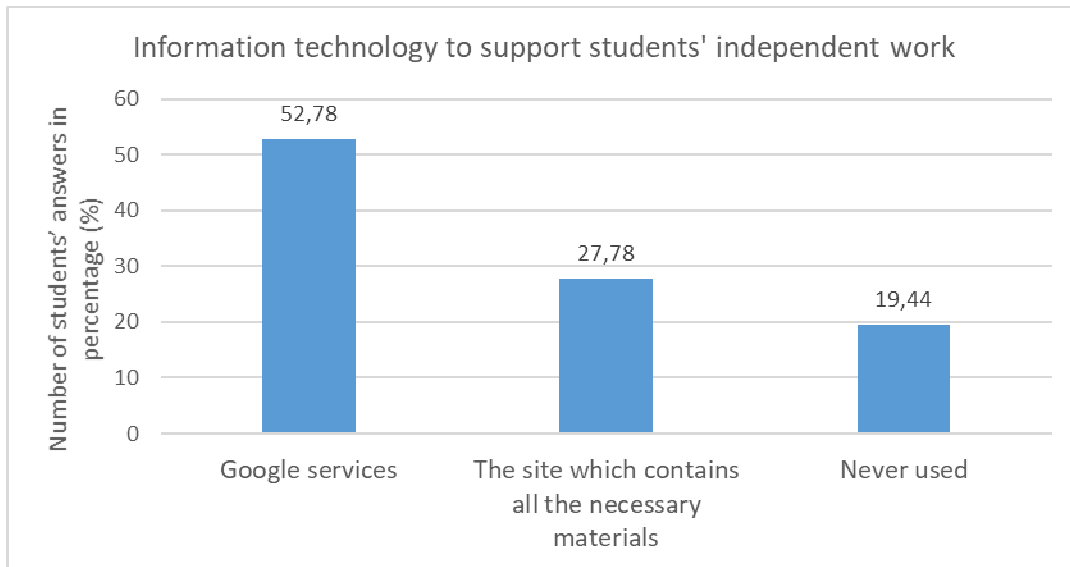


Fig. 2. What information technologies which support students' independent work would you like to use?

So, analyzing this issue, we can conclude that when developing informational and methodological support for independent learning activities, it is expedient to use the services of Google, and to develop an educational website on which training materials will be posted to help in independent work.

Let us analyze the results of the answers to the following question: “Are you ready to use the Internet resources while working on independent tasks?” (Figure 3).

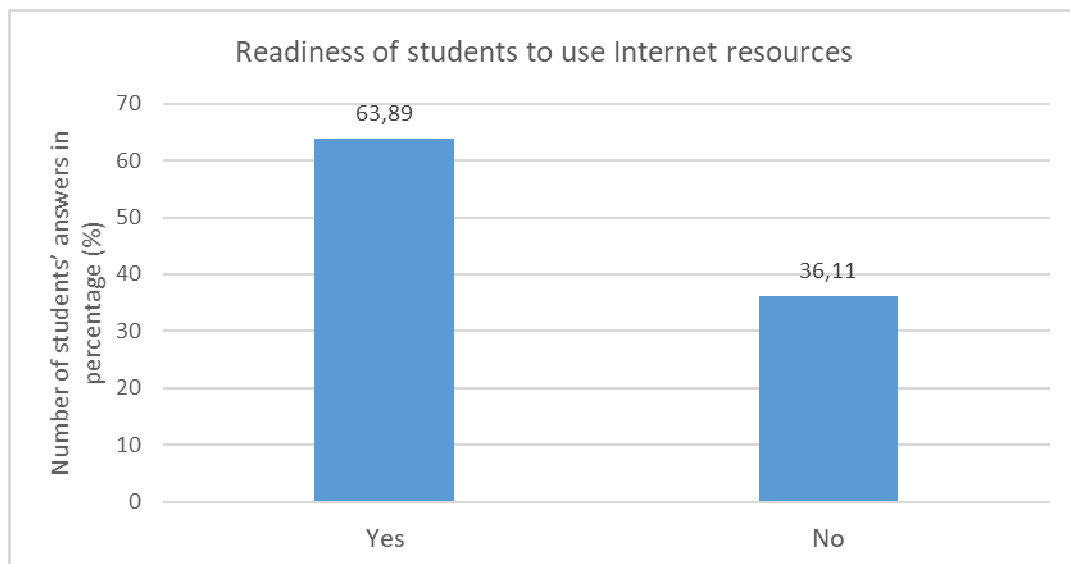


Fig. 3. Are you ready to use the Internet resources when working on independent tasks?

Analyzing the histogram, we can conclude that the majority of students (63.89%) are ready to use the Internet resources while working on their own tasks. Therefore, we can

consider the development of an educational Internet site for informational and methodological support of students' independent study as appropriate and relevant.

Let us look at the results of students' answers to the question: "How is it more convenient for you to control your time while performing independent work?" (Figure 4).

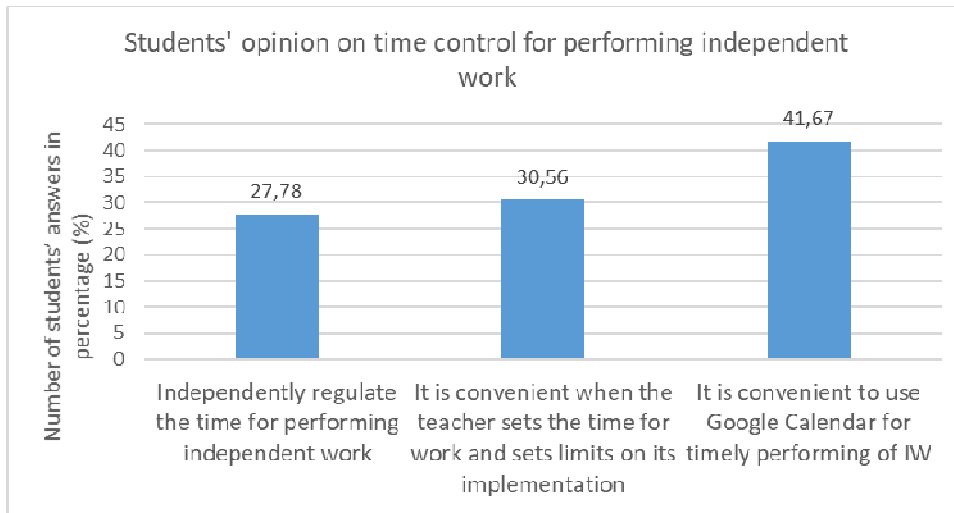


Fig. 4. How is it more convenient for you to control your time while performing independent work?

After analyzing the results, it can be concluded that a considerable number of students would like to use information tools that remind them of their deadlines, 41.67% of the students said that it was convenient for them to use the Google Calendar for timely performance of their work. Therefore, when creating an educational information resource, it is advisable to use Google Calendar to help students remember deadlines and accordingly plan their learning.

When studying the matter of mastering educational material, we can conclude that the vast majority of students (66.67%) learn the teaching material better while independently processing course information in convenient conditions, that is, beyond the classroom. Therefore, the development of informational and methodological support for students' independent study and the Internet resources to which students can have access at any time convenient for them is important and necessary for the development of the ability to organize, plan and work independently (Figure 5).

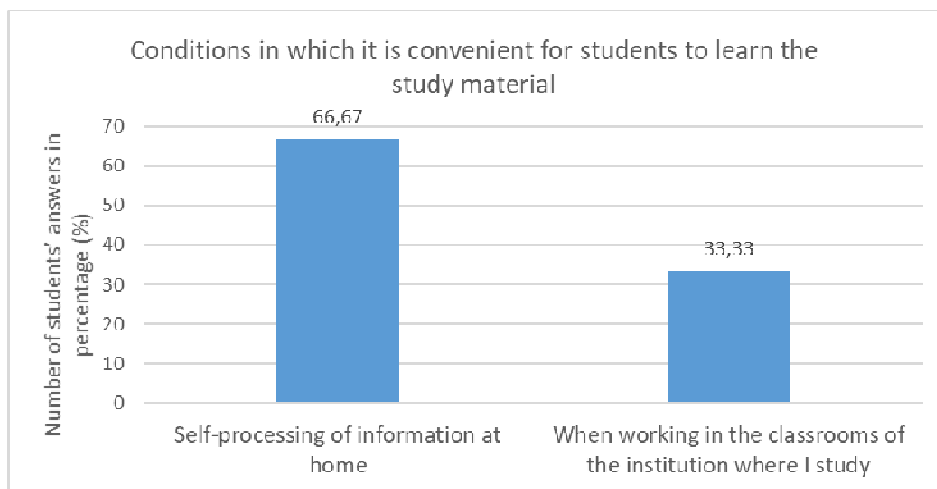


Fig. 5. In what environment do you better remember the training material?

Studying the opinion of students about the expediency of introducing a reminder of deadlines we can conclude that it is very difficult for students to organize themselves to perform their work (Figure 6).

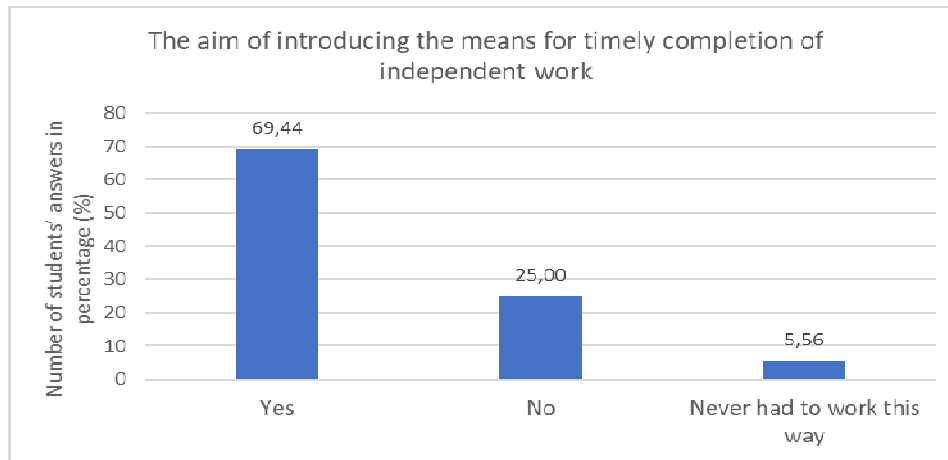


Fig. 6. *Would you like to have external factors that remind you of the deadlines?*

The overwhelming majority of students (69.44%) would like to have means that would remind them of the deadlines.

According to the results of the study, the following conclusions can be drawn: students have shown a positive attitude towards the implementation of informational and methodological support of independent learning activities and are interested in using the means that will remind them of deadlines and stimulate to meet them in their independent work and reporting on its results.

According to the results of our experimental research and taking into consideration students' ideas, we worked out an educational informational resource that contains means of informational and methodological support for independent learning of students majoring in specialty 015 Professional education (Computer technologies) at Berdiansk State Pedagogical University.

Informational and methodological support of independent study is designed for students of the first year and was introduced in the course "Modern Information Technologies" (MIT).

The content of independent study in the discipline MIT [25] is structured according to types of educational activity. Training materials are posted on the site that was developed using CMS Wordpress located at <https://sitbdpu.wordpress.com>.

A separate calendar was created in the Google Calendar application to organize students' independent work. One can create new calendars only in his/her browser, but not in the Google Calendar app. After creating a calendar all events related to the performance of independent work were published in it.

Each event is associated with certain educational tasks (lectures, independent, laboratory, individual work, preparation for exams) and corresponds to the specific nature of educational and cognitive activities (reproductive, constructive-variant, heuristic and creative-research independent work). For convenient identification of task types, the corresponding colored marks were fixed behind them (Figure 7).

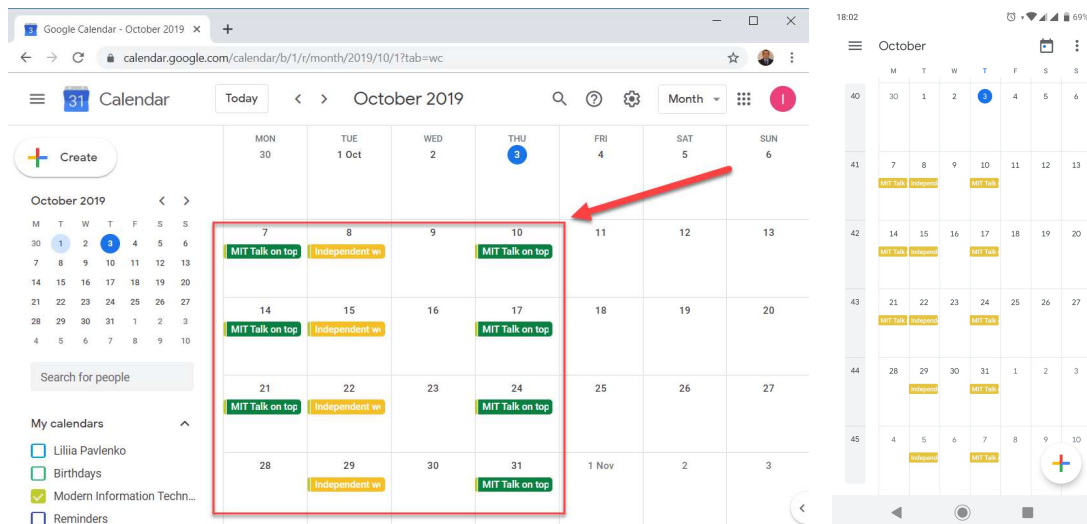


Fig. 7. Calendar of independent work on MIT discipline (desktop and mobile version)

The task creation was unified and the following characteristics were highlighted: date and time, reminders for reporting dates were set; task description and expected results were given. The description of the task for quick access to educational materials includes a link to the relevant section or article on the site, attached files, if necessary.

Creation of informational and methodological support of students' independent study envisaged integration of the calendar and schedule of independent work with the educational site, which contains all the necessary materials. There are three options for integrating events and a calendar into an educational site, namely:

1. Schedule export of tasks for students' independent work to be viewed on a separate page of the site (Figure 8).
- 2.

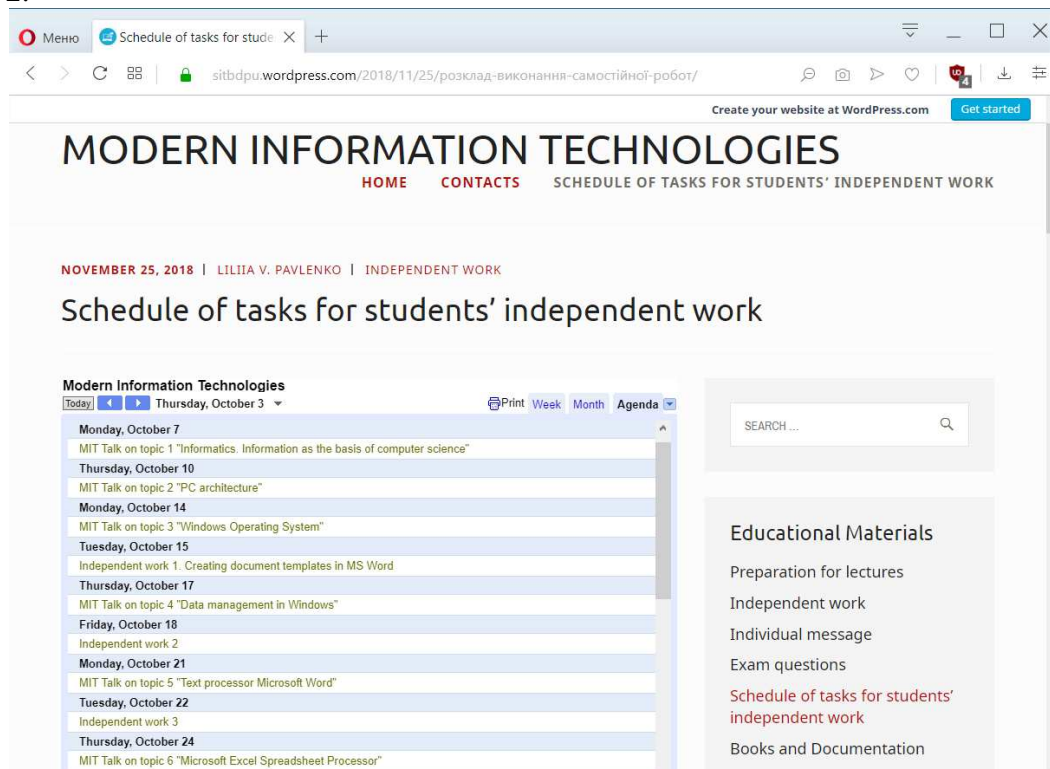


Fig. 8. Schedule of tasks for students' independent work

2. Integration of each event into the page of the respective training activity with the possibility of adding this event to the student's personal calendar (Figure 9).

NOVEMBER 25, 2018 | LILIIA V. PAVLENKO | INDEPENDENT WORK

1. Creating document templates in MS Word

[Google Calendar](#)

Independent work 1.
Creating document templates in MS Word

Purpose: To learn how to create and edit a document template in MS Word

Independent work tasks:

1. Master the skills of creating a document template in MS Word.
2. Create a template in MS Word an official organization form.

Equipment Description

- Personal Computer;
- OS Windows;
- Programm MS Word.

SEARCH ...

Educational Materials

- Preparation for lectures
- Independent work
- [Individual message](#)
- Exam questions
- [Schedule of tasks for students' independent work](#)
- Books and Documentation

Follow ...

Fig. 9. Integration of the event into the relevant educational page

3. Events' export that goes to a permanent reminder on all pages of the site (Figure 10).

- Topic 2. The architecture of a PC
- Topic 3. Windows operating system
- Topic 4. Data management in Windows
- Topic 5. Microsoft Word text processor
- Topic 6. Microsoft Excel spreadsheet processor
- Topic 7. Data Analysis in Microsoft Excel
- Topic 8. Database Development in Microsoft Access
- Topic 9. Creating presentations in MS PowerPoint
- Topic 10. Electronic information arrays on the Internet

2. Tasks for independent work

1. Creating document templates in MS Word
2. Build the structure and content of a document based on styles
3. Summing up the interim results. Consolidation. Summary tables
4. Creating linked tables. Data search
5. Reporting technology for relational database in Ms Access environment
6. Create presentations using MS PowerPoint
7. Creating an interactive presentation using MS PowerPoint
8. Information search on the Internet

3. Tasks for individual work

- The task of writing an essay
- Requirements for writing an essay

Upcoming Events

MIT Talk on topic 1 "Informatics. Information as the basis of computer science"
October 7, 2019
Berdiansk State Pedagogical University, Berdiansk, Ukraine
1. Give examples of data operations. 2. What is the alphabet? Explain the principles of binary data encoding. 3. How are text data encoded in a computer? 4. How is graphic and audio data encoded in a computer? 5. Give examples of basic data structures. etc...

Independent work 1. Creating document templates in MS Word
October 8, 2019
Berdiansk State Pedagogical University, Berdiansk, Ukraine
Creating document templates in MS Word

MIT Talk on topic 2 "PC architecture"

Follow ...

Fig. 10. Upcoming events

5. The site has an opportunity to import the entire “Modern Information Technologies” calendar into its own student calendar (Figure 11).

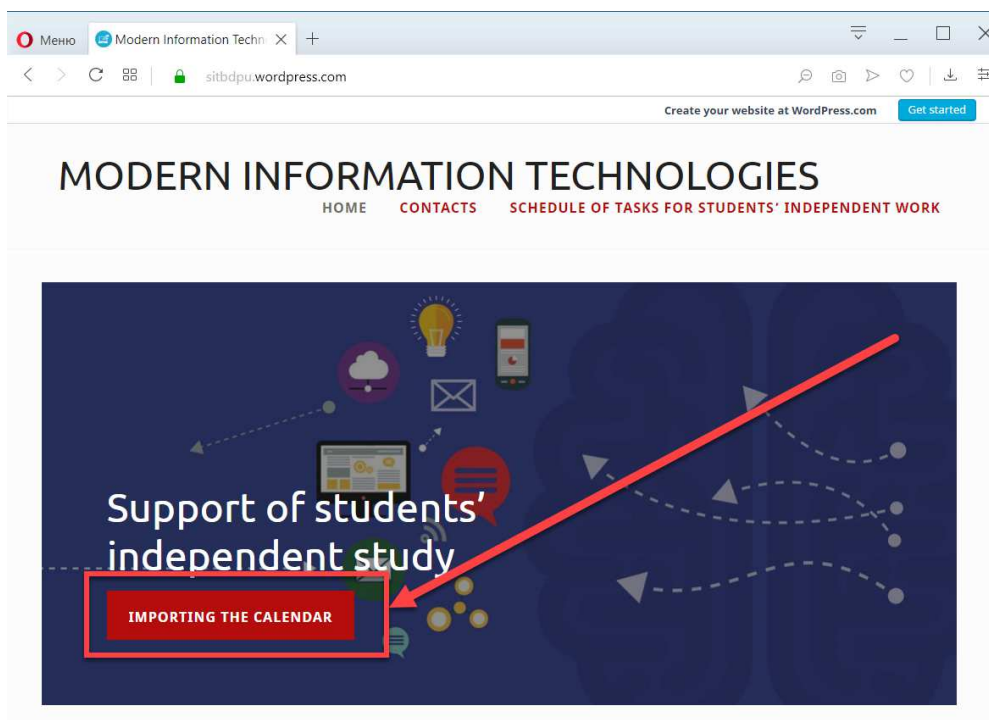


Fig. 11. Importing the calendar from the discipline “Modern Information Technologies” to a student personal calendar in the Google Cloud

Changes to the calendar are visible to all users, which enables dynamic adjustment of tasks, adding new types of activities, and regulating the type of educational and cognitive activity, depending on the course of the educational process and the students’ progress.

4. CONCLUSIONS AND PROSPECTS FOR FURTHER RESEARCH

1. The developed theoretical model of using cloud technologies in informational and methodological support of educational activity relies on the use of cloud services of Google and CMS Wordpress as the main means. Informational and methodological support is based on the integration of two classifications of independent work types (according to the type of learning tasks and the nature of educational and cognitive activities) that will be performed jointly and will facilitate the formation of students’ ability to organize and plan and the ability to work independently.

2. The results of the experimental study confirmed students’ readiness to use Internet resources while working out their own tasks using means of reminding and stimulating educational activities.

3. The experience of using cloud technologies and a site for organizing students’ independent work when studying the course "Modern Information Technologies" is described.

4. Electronic calendar and integration of its elements in the educational site ensure the proper functioning of informational and methodological support of students’ independent study.

In further research it is planned to study the possibility of introducing new cloud services into students’ independent study of major disciplines.

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ХМАРНІ ТЕХНОЛОГІЇ В ІНФОРМАЦІЙНО-МЕТОДИЧНОМУ СУПРОВODІ САМОСТІЙНОЇ НАВЧАЛЬНОЇ ДІЯЛЬНОСТІ ЗДОБУВАЧІВ ВИЩОЇ ОСВІТИ

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Анотація. У статті на основі аналізу наукових та методичних джерел з'ясовано стан інформаційно-методичного супроводу самостійної навчальної діяльності студентів. Проаналізувавши стан дослідження проблеми, автори дійшли висновку, що недостатньо уваги приділяється впровадженню інформаційно-методичного супроводу самостійної діяльності з використанням хмарних технологій для навчання здобувачів вищої освіти. Установлено, що самостійна робота як домінуюча складова навчальної діяльності студента в рамках входження до європейського освітнього простору вимагає нових підходів до її побудови з охопленням усієї сукупності інноваційних аспектів. Загальною проблемою освіти є зменшення кількості аудиторних годин і винесення значної частини навчального матеріалу на самостійне опрацювання. Така ситуація вимагає подальшого наукового аналізу та розробки методичних рекомендацій з метою вдосконалення самостійної навчальної діяльності. Ця проблема залишається актуальною й потребує теоретичного обґрунтування

та практичної розробки. На основі контент-аналізу наукових статей щодо професійної підготовки здобувачів вищої освіти виділено напрями вдосконалення інформаційно-методичного супроводу самостійної навчальної діяльності студентів на прикладі дисципліни «Сучасні інформаційні технології». Проведено дослідження серед студентів щодо їх готовності до використання інформаційно-методичного супроводу самостійної навчальної діяльності й визначено, що доцільно використовувати хмарні сервіси Google та освітній сайт, на якому будуть розміщені навчальні матеріали, для здійснення самостійної навчальної діяльності. У статті теоретично обґрунтовано підходи до впровадження інформаційно-методичного супроводу самостійної роботи навчальної діяльності студентів та розроблено модель інформаційно-методичного супроводу самостійної навчальної діяльності здобувачів вищої освіти. Інформаційно-методичний супровід самостійної навчальної діяльності студентів побудований на основі інтеграції двох класифікацій видів самостійної роботи (за характером навчальних завдань та за характером навчально-пізнавальної діяльності), що здійснюватиметься комплексно й сприятиме формуванню в здобувачів вищої освіти здатності до організації власної практичної діяльності та планування часу на виконання поставлених завдань й здатності працювати самостійно. Для дисципліни «Сучасні інформаційні технології» розроблений інтернет-ресурс у вигляді сайту, який містить необхідну інформацію для виконання самостійної роботи. Окремо було розроблено електронний календар для організації самостійної навчальної діяльності студентів. Проведена інтеграція елементів календаря в освітній сайт з метою забезпечення функціонування інформаційно-методичного супроводу самостійної навчальної діяльності студентів. Розроблено методичні засади впровадження інформаційно-методичного супроводу самостійної навчальної діяльності студентів, а саме використання хмарного сервісу Google Календар у професійній діяльності викладача при навчанні студентів на прикладі дисципліни «Сучасні інформаційні технології».

Ключові слова: інформаційно-методичний супровід; самостійна навчальна діяльність; хмарні технології; Google календар.

ОБЛАЧНЫЕ ТЕХНОЛОГИИ В ИНФОРМАЦИОННО-МЕТОДИЧЕСКОМ СОПРОВОЖДЕНИИ САМОСТОЯТЕЛЬНОЙ УЧЕБНОЙ ДЕЯТЕЛЬНОСТИ СОИСКАТЕЛЕЙ ВЫСШЕГО ОБРАЗОВАНИЯ

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Аннотация. В статье на основании анализа научных и методических публикаций изучено состояние информационно-методического сопровождения самостоятельной учебной деятельности студентов. Проанализировав состояние исследуемой проблемы, авторы пришли к выводу, что недостаточно внимания уделяется внедрению информационно-методического сопровождения самостоятельной деятельности с использованием облачных технологий для обучения соискателей высшего образования. Определено, что самостоятельная работа как доминирующая составляющая учебной деятельности студентов в период вхождения в европейское образовательное пространство требует новых подходов к ее построению с охватом всей совокупности инновационных аспектов. Общей проблемой образования является уменьшение количества аудиторных часов и вынесение значительной части учебного материала на самостоятельное изучение. Такая ситуация требует дальнейшего научного анализа и разработки методических рекомендаций с целью совершенствования самостоятельной учебной деятельности. Эта проблема остается актуальной и требует теоретического обоснования и практической разработки. На основании контент-анализа научных статей по профессиональной подготовке соискателей высшего образования выделено направления совершенствования информационно-методического сопровождения самостоятельной учебной деятельности студентов на примере дисциплины «Современные информационные технологии». Проведено исследование среди студентов относительно их готовности к использованию информационно-методического сопровождения самостоятельной учебной деятельности и определено, что целесообразно использовать облачные сервисы Google и образовательный сайт, на котором будут размещены учебные материалы для осуществления самостоятельной учебной деятельности. В статье теоретически обоснованы подходы к внедрению информационно-методического сопровождения самостоятельной работы учебной деятельности студентов и разработана модель информационно-методического сопровождения самостоятельной учебной деятельности соискателей высшего образования. Информационно-методическое сопровождение самостоятельной учебной деятельности студентов построено на основе интеграции двух классификаций видов самостоятельной работы (по характеру учебных задач и по характеру учебно-познавательной деятельности), будет осуществляться комплексно и способствовать формированию у соискателей высшего образования способности к организации собственной практической деятельности, планированию времени на выполнение поставленных задач и способности работать самостоятельно. Для дисциплины «Современные информационные технологии» разработан интернет-ресурс в виде сайта, который содержит необходимую информацию для выполнения самостоятельной работы. Отдельно был разработан электронный календарь для организации самостоятельной учебной деятельности студентов. Проведена интеграция элементов календаря в образовательный сайт с целью обеспечения функционирования информационно-методического сопровождения самостоятельной учебной деятельности студентов. Разработаны методические основы внедрения информационно-методического сопровождения самостоятельной учебной деятельности студентов, а именно использование облачного сервиса Google Календарь в профессиональной деятельности преподавателя при обучении студентов на примере дисциплины «Современные информационные технологии».

Ключевые слова: информационно-методическое сопровождение; самостоятельная учебная деятельность; облачные технологии; Google календарь.

