DEVELOPMENT OF AN EDUCATIONAL ONLINE PLATFORM USING GOOGLE SITES

Ermetov E. Ya.
Associate Professor of the Department of Biomedical Engineering,
Computer Science and Biophysics Tashkent Medical Academy

Fazliddin Arzikulov
Tashkent Medical Academy

Abstract

The implementation of an educational resource in the biomedical field through the Google Sites platform is a promising method of providing publicly accessible and high-quality didactic material for students in medical institutions, as well as for practitioners seeking permanent professional competence improvement. This abstract will review the process of designing such a resource, as well as provide recommendations for its optimal use in the interests of both the teaching staff and the student audience.

Keywords: Learning platform, productive tasks, interactive interaction, distance learning programs.

Introduction

In the paradigm of modern education, information and educational resources act as a fundamental element that determines the trajectory of students' learning and provides expanded access to didactic content. This article will analyze the process of developing a specialized educational resource dedicated to computer graphics using the functionality of the Google Sites platform. We will consider in detail the sequence of steps necessary for the construction of such a resource, and also propose a number of recommendations aimed at optimizing its use both in the context of teaching activities and for the purposes of independent student learning.

Before starting the development of a resource, it is necessary to set goals, define the goals and objectives of the project, and segment the target audience. The development should be accompanied by the creation of a conceptual model of the resource, including the identification of key thematic areas and their subsequent structuring into logically interrelated information modules. As an example, a resource dedicated to computer graphics can be structured into modules covering the basics of computer graphics, an overview of specialized software (graphic editors), principles of animation, and other relevant areas.Based on the previously developed architecture of the information resource, proceed to the formation of the content content of each structural element. Integrate multimedia assets, including text data, static and dynamic visualizations, as well as hyperlinks to relevant external sources and practical implementation examples.Use the functionality of the Google Sites platform to implement interactive components. Include

embedded video lectures, assessment tests, questionnaires, and discussion forums aimed at increasing the level of interactivity and engagement of the target audience in the learning process. To ensure the inclusiveness and effectiveness of the resource, aimed at users with different levels of competence in the field of computer graphics, it is necessary to implement a multi-level approach to the presentation of information. This means structuring the content according to the degree of complexity, from basic concepts for beginners to advanced techniques for advanced users. Additional didactic materials, such as interactive exercises, a glossary of terms, and a case study, should be provided to stimulate independent learning and deepen understanding of the subject. After developing a resource, it is necessary to validate its effectiveness through empirical research involving the target audience. The data obtained, based on the principles of usability testing and qualitative feedback analysis, should be used for iterative optimization of the resource aimed at increasing its accessibility, clarity and compliance with user needs.The creation of an information and educational resource on computer graphics on the Google Sites platform is an effective tool for the dissemination of high-quality educational content among the target audience, including students and teaching staff. The implementation of the proposed algorithm will make it possible to develop an interactive and information-rich platform that contributes to improving the effectiveness of the educational process and the formation of advanced computer literacy in the field of graphic design.

In the Google Classroom environment, teachers have the opportunity to curate and distribute educational content, including educational materials (textbooks, problem books, lecture notes, presentations) and multimedia resources such as video lectures integrated from the YouTube platform. The platform's functionality provides teachers with effective tools for developing, assigning, and evaluating learning assignments in digital format. Integration with Google services, in particular, with Google Forms, allows you to quickly create and administer various types of test tools, covering both multiple-choice assignments and assignments requiring detailed answers or essays from students.

Automated testing significantly optimizes pedagogical activity, since upon completion a structured data table is formed that allows for a comprehensive analysis of the assimilation of the material. This analysis includes the identification of individual and group knowledge deficits. Based on the data obtained, it is possible to generate analytical reports presented both in tabular form and in the form of visualizations (for example, diagrams), which contributes to a more effective interpretation of the results. In addition, the automated task organization system ensures the systematization of materials in a logically structured file system on digital media, which increases the accessibility and understanding of the organization of educational materials for both teachers and students.

The interface of the tasks section provides visualization of the list of tasks assigned by the teacher, providing students with the opportunity to directly proceed to completion with a single click. The real-time information update system provides the teacher with prompt access to information about the status of work, allowing for timely assessment and personalized comments. The importance of the commenting function is due to its significant role in providing feedback and shaping the trajectory of individual learning.

When forming comments, it is advisable not to limit oneself to stating mistakes or expressing praise, but to include recommendations for re-examining relevant sections of the educational

material. It is also advisable to provide links to additional resources, including multimedia lectures and assessment tools to consolidate the acquired knowledge and develop practical skills. For students who demonstrate outstanding results, it seems appropriate to provide access to in-depth materials aimed at stimulating intellectual development and satisfying cognitive interest in a particular subject area.The Quizizz tool, which provides advanced features compared to Google Forms for conducting assessment events, has been integrated with the Google Classroom platform. If the functionality of Google Forms seems to be insufficient for the implementation of the set didactic tasks, the use of Quizizz can help to increase the interactivity and involvement of students. This system, which is available free of charge, can be used provided it is ergonomic and meets the requirements of teachers and students.

The implementation of PDF file annotation functionality is an additional feature of the Google Classroom platform. Due to the prevalence of the PDF format as a means of distributing educational materials, as well as given the limitations associated with editing file contents for technical or licensing reasons, the introduction of the ability to add comments and graphic marks on top of PDF documents is recognized by many representatives of the teaching community as a useful and sought-after feature.Integrated with Google Classroom, the Kami app provides the ability to mark, annotate, comment, and label PDF files hosted on Google Drive., including in the context of completing training assignments.The use of digital educational platforms such as Google Classroom has a significant role not only for teachers, but also for students, because:

• Helps to increase the effectiveness of the educational process and improve the quality of knowledge acquisition.

• Stimulates cognitive activity.

• Increases motivation to study a subject area.

• Develops skills in working with information and communication technologies.

• Develops independent research skills.

Cloud technologies provide ubiquitous and flexible access to educational resources and tools, regardless of spatial and temporal localization. Students have the opportunity to access materials and assignments via the Internet from any device, which helps to personalize the learning trajectory. Cloud platforms also provide the opportunity for collaborative work on projects between students and teachers, allowing joint access to documents and data in real time. This approach promotes the development of teamwork skills and knowledge sharing in the educational process.Cloud services provide an extensive set of tools for developing multimedia presentations, interactive training sessions, video lectures, and other didactic materials. A number of cloud platforms offer adaptive learning systems with the ability to dynamically adjust the content and level of complexity according to the individual needs and pre-established level of knowledge of each student, thereby providing a personalized learning trajectory. The capabilities of cloud technologies make it possible to store large amounts of data characterizing the dynamics of the educational process, which opens up prospects for analyzing the effectiveness of implemented educational programs and an objective assessment of students' academic performance.Effective integration of cloud technologies into educational practice requires ensuring adequate training of teaching staff and creating conditions for students' unhindered access to the required resources. If applied correctly, cloud solutions have the potential to significantly enrich the educational process

and increase its effectiveness.At the same time, it should be noted that the concept of "cloud technologies" is the subject of various interpretations and discussions due to the breadth of the term's application and its ability to cover various aspects of information technology infrastructure. In the strictest sense, cloud technologies are considered as a set of virtualized services that are accessed via the global Internet.

A number of analysts and technology solution providers are expanding the semantic field of the concept of "cloud technologies" to include the entire range of information services provided via the Internet. This interpretation covers not only computing resources, but also data storage systems, a variety of applications and services, as well as outsourcing services for IT infrastructure and related resources. Within the framework of an expanded understanding of the term, the concept of "cloud" is often identified with the Internet itself. Thus, in the context of a broad interpretation, the use of cloud technologies implies interaction with various Internet services and resources available through a global network.

Cloud technologies represent a data processing paradigm in which computing resources and capacities are provided to the user as an Internet service. The cloud functions as an electronic data warehouse located in a network infrastructure, providing users with the ability to store, edit, and share files and documents with other users. The essential characteristic of cloud technologies is to provide hosting users with remote access to services, computing resources and applications via the Internet. S. V. Petrova in her work [3] classifies Internet services, also known as "cloud services", into three main categories:

• Infrastructure as a service (IaaS - Infrastructure as a Service);
• Platform as a service (PaaS - Platform as a Service);
• Software as a service (SaaS - Software as a Service).

In the context of teachers' familiarity with application software, SaaS (Software as a Service) technology is the closest analogue. An example of an effective SaaS implementation is the Google system, which provides a wide range of services. To gain access to Google cloud services, you must first register with the search engine and create a personal account that provides a secure area for access to integrated services. The functionality provided within the created account is multifaceted and allows the teacher not only to create an interactive calendar of events and reminders, but also provides access to tools that functionally duplicate the Microsoft Office suite. In the context of modern educational trends, the use of Google Apps tools for educational institutions, in particular, the innovative Google Sites service, is a highly effective approach. This tool is a tool for the rapid creation of websites of various thematic focus. The key advantage of the service is that there is no need for deep knowledge of markup or programming languages, as well as the intricacies of configuring web servers and databases. The most significant aspect of Google Sites functionality is the ability to integrate existing Google services directly into the structure of the website being developed.

The Google Apps package provides cross-platform compatibility, supporting all operating systems and client programs used by students and educational institutions.
• It is possible to work with documents using any mobile device with Internet access functionality.
• All the tools included in Google Apps for Education are provided free of charge.

In the modern educational environment, characterized by the proliferation of mobile and stationary computing devices such as laptops, personal computers and smartphones, students and teachers have the opportunity to use various technological platforms for communication and educational activities. The Google Apps toolkit, which is cross-platform and widely compatible, is a publicly available and universal IT technology adapted for use in the educational process. Within the framework of the variety of available online services, services based on Google cloud technologies that are applicable in the context of teaching the subject "Technology" as part of a computer science course deserve special attention.The Google Groups service is a tool for organizing group work and managing communication through modulated forums and mailing lists. In the context of modern educational trends, the priority is given to activities in the Internet environment, the implementation of joint projects and research using network resources to achieve didactic goals. The Google Docs service is a free set of web services implemented using the Software as a Service (SaaS) model, and functions as an online cloud file storage service with data exchange functions developed by OpenAI. Documents created by the user are saved on specialized Google servers and can be exported to file formats. This feature is one of the key advantages of the service, providing access to the entered data from any computer device connected to the Internet, provided that the authentication procedure is performed using a password.
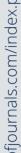
The Google Sites service is a web design tool with the functionality of publishing video materials, graphic images, and text documentation. According to the developers, the purpose of the service is to create a unified network space designed for the exchange of information between users. The Google Sites service provides the ability to add diverse information to a website under development, including calendars, videos, graphics, text documentation, and other types of content, and also allows you to define access control parameters for a website.

The Google Video service is an integrated platform that combines the functionality of video hosting of user videos with the capabilities of a search engine that provides navigation through video content. This service ensures the safe placement and viewing of video materials. No specialized software is required to view or add comments, except for a standard web browser.

The Google Apps for Educational Institutions package is a set of flexibly customizable applications designed for communication and collaboration. Through the use of cloud technologies, the package minimizes costs and simplifies software and hardware maintenance processes. A special role in the development of students' independent work skills is played by the possibility of implementing interactive forms of interaction with educational web resources.

The transformation of educational standards in accordance with the requirements of the third generation has led to a paradigm shift in the organization of the educational process. It should be noted that currently the pedagogical community is actively implementing a variety of computer training programs, educational software and test complexes, however, this integration is mainly local in nature. As the basis of the educational process, it is advisable to consider an educational product that provides students with mobility of access, regardless of time and space constraints, characterized by high quality information presentation, relevant content and relevance in the context of future professional activity. An important characteristic of such a product is its permanent updating, carried out with high frequency. The rapid dynamics of informatization of education reveals the insufficiency of existing information resources that do not have time to fully

meet the needs of various levels of education and take into account the specific characteristics of students.

Thus, it seems advisable to develop an optimal educational resource, which is an interconnected set of elements, including information, software and methodological support. This complex should ensure the organization and management of students' learning activities at all stages of their work, contain relevant reference material, an extensive set of hyperlinks to external resources, and be focused on the implementation of didactic and psychological-pedagogical goals of teaching and upbringing. Google Docs fully complies with these requirements, providing students and teachers with the opportunity to collaborate remotely on common documents and projects, as well as providing teaching staff with tools to monitor and manage these activities. The resource we are developing https://sites.google.com/site/httpkafelk com/ It uses Google Sites technology and is designed to master the Computer Graphics section of the Technology course

References

1. Базарбаев М.И., Эрметов Э.Я., Сайфуллаева Д.И., Яхшибоева Д.Э. Использование медиатехнологии в образовании. Журнал гуманитарых и естественных наук., Тошкент, 2023, №6 (12) Vol.1. c.94-100.

2. Базарбаев М.И., Эрметов Э.Я., Сайфуллаева Д.И., Таълимда ахборот технологиялари. Дарслик, Тошкент, 2018, 453 с.

3. Эрметова С.И. Эрметов Э.Я., Икрамов У., Каримов Х.А., Мастибеков Н. Прикладные программы, обеспечивающие обучение на расстоянии. Масофадан ўқитиш техника ва технологияси. Халқаро илмий-амалий конференция, 2002, c.183.

4. Эрметов Э.Я. Тиббий таълимда виртуал ўқув платформасидан фойдаланиш самарадорлиги. Oliy tibbiy ta'lim sifatini oshirishda erishilgan yutuqlar va rivojlantirish istiqbollari". Toshkent tibbiyot akademiyasi "Axborotnomasi" maxsus soni. Ташкент, 2024. С.116.

5. Эрметов Э.Я., Яхшибоева Д.Э., Махсудов В.Г. Соғлиқни сақлашда IT –технологиянинг аҳамияти. Сборник материалов конференции Вопросы биофизики в медицине, 2023, c.233-237

6. Базарбаев М.И., Эрметов Э.Я., Сайфуллаева Д.И. Информационные технологии в образовании. Учебник, Ташкент, 2022, c.453.

7. Стивен Хаукинс. Google Сайт: Как Создать Эффективный Информационно-Образовательный Ресурс. Издательство: Информационно-Образовательные Технологии, 2020.

8. Иванов. Д. Информационные Технологии в Образовании: Теория и Практика. Издательский Дом "Просвещение", 2021.

9. Элизабет Кларк. Создание Образовательного Сайта на Google Sites: Руководство для Преподавателей. ООО "МегаКнига", 2018.

10. Смирнов. А. Облачные Технологии в Образовании: Инновации и Перспективы. Наука и Образование, 2022.

11. Elmurotova, D., Arzikulov, F., Izzatullayev, I., Olimov, A., & Abdurahmonov, J. (2024). The role of remote diagnostics in medicine. *World Bulletin of Public Health (WBPH)*, *39*, 102-105.

12. Mustafakulov, A., Ahmadjonova, U., Jo'raeva, N., & Arzikulov, F. (2021). Свойства синтетических кристаллов кварца. *Физико-технологического образование*, (3).

13. Мусаев, Ш., Арзикулов, Ф. Ф., Олимов, О. Н., Норматова, Д. А., & Сатторова, М. А. (2021). Свойства кристаллов кварца. *Science and Education*, *2*(10), 201-215.

14. Mustafakulov, A. A., & Arzikulov, F. (2020). Current State Of Wind Power Industry. *American Journal of Engineering And Technology.(ISSN–2689-0984). Published: September*, *14*, 32-36.

15. Арзикулов, Ф. Ф., & Мустафакулов, А. А. (2020). Возможности использования возобновляемых источников энергии в узбекистане. *НИЦ Вестник науки*.

16. Мустафакулов, А. А., Джуманов, А. Н., & Арзикулов, Ф. (2021). Альтернативные источники энергии. *Academic research in educational sciences*, *2*(5), 1227-1232.

17. Mustafakulov, A. A., Arzikulov, F. F., & Djumanov, A. (2020). Ispolzovanie Alternativno'x Istochnikov Energii V Gorno'x Rayonax Djizakskoy Oblasti Uzbekistana. *Internauka: elektron. nauchn. jurn*, (41), 170.

18. Arziqulov, F., & Majidov, O. (2021). O 'ZBEKISTONDA OCHIQ MA'LUMOTLARDAN FOYDALANISH IMKONIYATLARI VA XALQARO TAJRIBA. *Science and Education*, *2*(1), 153-157.

19. Solidjonov, D., & Arzikulov, F. (2021). WHAT IS THE MOBILE LEARNING? AND HOW CAN WE CREATE IT IN OUR STUDYING?. *Интернаука*, (22-4), 19-21.

20. Мустафакулов, А. А. (2020). Рост кристаллов кварца на нейтронно-облученных затравках. *Инженерные решения*, (11), 4-6.

21. Шайхова, Г. И., Отажонов, И. О., & Рустамова, М. Т. (2019). Малобелковая диета для больных с хронической болезнью почек. *Экспериментальная и клиническая гастроэнтерология*, (12 (172)), 135-142.

22. Отажонов, И. О. (2010). Характеристика фактического питания и качественный анализ нутриентов в рационе питания студентов высших учебных заведений. *Врач-аспирант*, *43*(6.2), 278-285.

23. Отажонов, И. О., & Шайхова, Г. И. (2020). Фактическое питание больных с хронической болезнью почек. *Медицинские новости*, (5 (308)), 52-54.

24. Islamovna, S. G., Komildjanovich, Z. A., Otaboevich, O. I., & Fatihovich, Z. J. (2016). Characteristics of social and living conditions, the incidence of patients with CRF. *European science review*, (3-4), 142-144.

25. Отажонов, И. О. (2011). Заболеваемость студентов по материалам углубленного медосмотра студентов, обучающихся в высших учебных заведениях. Тошкент тиббиёт академияси Ахборотномаси. *Тошкент,(2)*, *122126*.