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THE INFORMATION TECHNOLOGY AND MOBILE APPLICATIONS APPLIANCE FOR THE FUTURE SPECIALISTS PREPARATION IN HIGHER EDUCATION INSTITUTIONS

The article is devoted to the analysis and research of information technologies and mobile applications for the preparation of university students. Analyzed the actual problems of preparing students in terms of mobile devices. The versatility of the use of mobile devices in the educational process allows you to change the traditional form of teaching material, while applying innovative technologies. Various Google Apps services are explored with the help of which you can get wide opportunities for information education. Applying educational information technologies, it can be noted that learning becomes interactive, enhances the intensity of the learning process. Thus, the introduction of new information technologies and mobile applications in the educational process introduces completely new components of educational content necessary for the preparation of competitive specialists.

Keywords: information system, information technologies, mobile applications, institution of higher education

Introduction

Smartphones and tablets are becoming more and more common in the modern student. These devices are used not only for watching movies and games, but also for working with documents and mastering educational material [1, 2]. Mobile devices provide the opportunity to learn at any time and in any place where you are. Therefore, learning has become much more convenient, and the opportunity has appeared to do this little by little, but often, which is very important in the learning process. It should be noted that mobile devices have long been an excellent addition to the already existing learning tools, and somewhere they replaced PCs. If we take webinars as an example, then with the help of mobile devices you cannot be attached to the workplace and you can join the webinar from anywhere in the world. In addition, now that the Internet is practically everywhere (in the subway, cafes, in parks), training has become more accessible. And mobile devices in full-time or full-time format –well support the theoretical component of the lesson.

There are many ways to use mobile devices in the learning process: for playing multimedia educational web resources (audio files, video files, graphics, maps, images);

✓ to provide quick access to training sites, resources, reference books, dictionaries;

✓ as a learning tool itself, subject to the development of training materials adapted for mobile communication platforms (SMS tests, tutorials and instructions based on mobile applications);

✓ for educational communication (SMS, Twitter, webinars, Skype, etc.).

It should be noted that mobile learning, unlike the traditional form of teaching materials and assignments, uses innovative technologies, with the help of which the form of this presentation is changed [3–6]. Such modern services as social networks, cloud storages, media hosting are used for content delivery.

Main part

The most important tasks that the teacher has to solve every day is to activate the student's cognitive activity, to form and develop his steady cognitive interest in the subject being studied. One of the effective means of implementing this task can be the active use of various network services of the Internet.

The environment of modern network services allows you to open up the possibility of creating learning situations in which students can naturally master and work out the most important competencies necessary for schoolchildren at the current stage of social development:

✓ information literacy – the ability to search, recognize and use the necessary information, the ability to recognize and use various types of media resources;

✓ organizational literacy – the ability to plan one's time and one's own group time; understanding of the relationships that exist between people, groups, organizations;

✓ communicative literacy – the skills of effective communication and cooperation;

✓ productive literacy – the ability to create quality products, the use of adequate means, planning.

When choosing the necessary service, it is necessary to consider their efficiency and convenience in work. For posting on social services registration is required. As a result, if you use several services, there is a problem with remembering logins and passwords. In this regard, Google services have an advantage over other services, since under one account you can access any service included in Google. The information and educational environment using Google Apps can provide the following features [7]:

✓ working information space;

✓ live information channels;

✓ efficiency without IT specialists and servers;

✓ secure storage of documents in the cloud;

✓ access from anywhere at any time;

- ✓ customizable access, joint work on documents, cooperation at the same time from different places;
- ✓ creating temporary groups to solve and discuss problems at a time convenient for the group members;
- ✓ active networking of all participants;
- ✓ fast feedback;
- ✓ availability of plans, timely notification of events;
- ✓ availability of study plans for students at any time from any place.

Consider existing Google tools for education, namely the Google Classroom Learning Management System (fig. 1). The presented system allows you to create classrooms, publish and evaluate assignments, communicate with students, post announcements, and store and distribute educational materials. The teacher can see who completed the task, and who still continues to work on it, as well as read questions and comments of students [8].

Classroom mobile application allows students and their teachers [9]:

- ✓ take photos: straight from the tasks page, students can take photos and attach them to their work. This can be useful in such cases as conducting experiments and fixing their results in natural science disciplines or, for example, capturing the results of a drawing task;

- ✓ share information from other applications: Students can easily attach images, PDF files, and web pages from other applications to their assignments in the Classroom. For example, in any graphic application, you can draw a graph or diagram, and then attach it to your homework. When you click the "Share" button in a third-party application, the Classroom will appear in the list of possible options, thanks to which you can attach a picture or another document to the task;

- ✓ work offline: even if there is no Internet connection, both students and teachers have access to assignments in the Classroom mobile app. All information in the application is automatically cached every time the application is used when the Internet is connected.

- ✓ teachers have quick access to any task, can track which of them they have already checked, as well as how many students have already done their job;

- ✓ in order to make it easier to find the necessary information, the ability to archive lessons was added to the application. Thanks to this function, long-past material can now be sent to the archive, so that you can easily find it in the future.

Highlight the main areas in which mobile applications can be used:

Reminder of important information and events;

- ✓ personalized search;
- ✓ organization of common work;

- ✓ visualization;
- ✓ communication;
- ✓ research;
- ✓ learning;
- ✓ virtual reality.

One of the applications that allows you to not forget about important information and events is Google Keep (fig. 2). This application is an excellent cross-platform manager of notes, reminders and provides the following features [10]:

- ✓ **read text from images.** Google Keep can recognize text in images, thereby saving your time - let the program recognize text from a snapshot of a page in a book or magazine. As soon as the text is recognized, it immediately becomes ready for editing or copying;

- ✓ **set a reminder that will appear in Google Now.** Google Keep allows you to schedule tasks at a later date and receive notifications at the required time. For each note, you can assign a specific date and time;

- ✓ **smart filtering and sorting options.** Google Keep colors are not used to make notes more colorful, but to help organize tasks, thoughts, to-do lists, and more. For example, use blue for work notes, yellow for random thoughts, and so on;

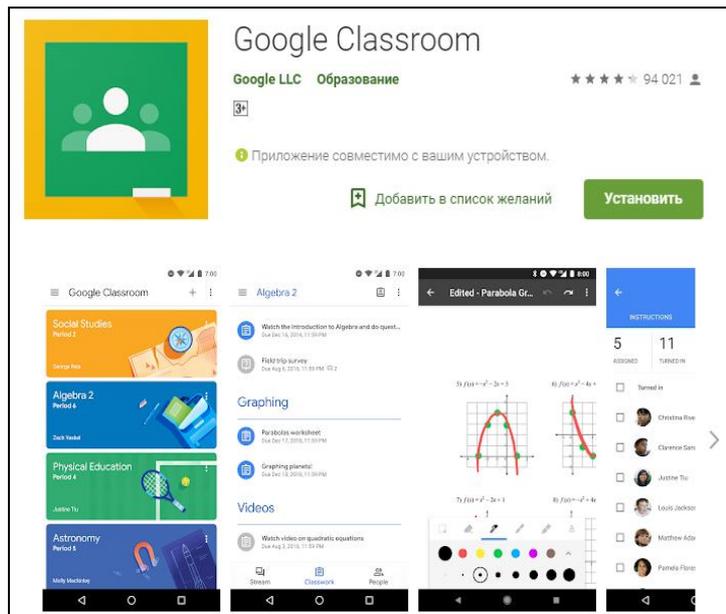


Fig. 1. Classroom application

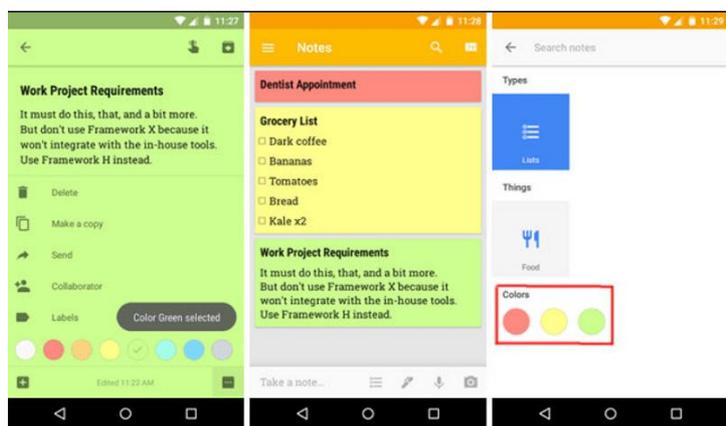


Fig. 2. Google Keep application

✓ **create voice memos.** Google Keep allows you to create voice memos. But in addition to synchronization between all platforms, the application also recognizes speech and adds it to the note as text;

✓ **recover deleted notes (as well as archiving).** If you accidentally deleted a note, you can restore it within 7 days while it is stored in the basket.

Personalized search is provided using the following Google applications:

✓ **Google Search** allows you to instantly get answers to your questions, learn interesting news and get information about important updates;

✓ **Google News** helps to find out information about events around the world and provides a selection of information taking into account the interests of the user;

✓ **Weather.**

Google applications also apply to the organization of general work, such applications include:

✓ **Google Drive** is data storage where you can place files of various types: text, image, photo, audio, video, presentation, etc. If Google Drive is used as part of Google Apps for Education, then there will be no restrictions on the size of stored files which is quite convenient, since you don't need to worry about the drive being full, or deleting old files;

✓ **Google Docs** – allows to create and edit text documents. This text editor is very similar to the well-known Word, but it has several advantages, such as sharing, commenting, the ability to insert various elements and a large selection of add-ons to optimize work and save time;

✓ **Google Sheets** – allows analyzing and visualizing data. In many similar to Excel, but have some advantages, similar to the advantages of Google Docs;

✓ **Google Slides** is a great way to introduce new ideas to your audience. Google Slides has many themes, fonts, embedded videos, animations, and other tools, as well as the ability to edit, as well as view presentations on any device - phone, tablet, or computer. All this can be done even without an Internet connection;

✓ **Google Calendar** is a service for scheduling meetings, events and affairs, which allows you to efficiently distribute and plan your time, which is important for a modern student and teacher.

For data visualization, Google provides the following applications:

✓ **Androidify** is an application where you can create Androids that look like yourself or friends. The finished picture is saved as a sticker or animated image that can be shared in chat rooms, posts and messages;

✓ **Snapseed** is a professional photo editor with three dozens of filters and tools, works with files in JPG and DNG formats. Among the features: automatic enhancement of the selected area of the image, a soft darkening at the edges, the rapid removal of unwanted objects, highlighting, blurring and other effects;

✓ **Google Photos** is a service for storing, organizing, displaying photos and videos.

The communication of the teacher with students can be achieved using such applications as:

✓ **Google Plus** is a social network model that allows participants to unite depending on their interests, hobbies or any particular events, allows you to hold video calls, chat in online chat and in mobile mode. Combines participants into one cluster, where they independently determine which participants will get access to this or that information, files or applications;

✓ **Hangouts Chat** makes it easy to collaborate and complete tasks for teams. With it, you can send private messages or chat with all team members at the same time. Dedicated virtual rooms for working on long-term projects and message chains make it easy to track progress and monitor tasks.

Google also provided applications for research:

✓ **Google Science Journal** – an application for teachers and scientists, allows you to measure the power of sound, pressure and other important parameters for experiments. External sensors on Arduino and Vernier are supported. The application allows you to take photos and notes during the study, as well as export the data as CSV files;

✓ **Google Expeditions** is an application for virtual educational tours (contains more than 200 expeditions). When you connect multiple devices to the same network, you can arrange a group tour from the depths of the ocean to the expanses of space.

Applications allow students and teachers to work remotely on common documents and projects, and teachers can monitor and manage this work.

Regardless of the type of task and means of its implementation, students' independent work is aimed at developing the ability to make independent selection, critical thinking and presenting information, formulating their own conclusions and value judgments on the basis of the proposed information.

Conclusions

It is safe to say that in the modern world there is a tendency to merge educational and information technologies and the formation on this basis of fundamentally new integrated learning technologies based, in particular, on the use of mobile devices and applications. In this case, learning becomes interactive, the importance of students' independent work grows, the intensity of the learning process is greatly increased, etc. Their complex application allows raising the learning process and the quality of education of students to a new level.

Conducting classes using the mobile class allows you to organize the study of new material, the activity of students using the Internet (access to multimedia information on the Web, work with social services), individual and joint activity of students.

The portability of mobile technology gives users greater flexibility and convenience. Students are now free to choose the time to access educational content within incredible limits.

In addition, another clear advantage of using mobile devices in training is the possibility of tactile, sensory interactions. Mobile content can and should be created so that the user interacts with it interactively. Even simple things such as audio, interactive interfaces,

vibrations, swipes, and drag-and-drop movements can be a powerful force in the context of mobile learning.

Finally, this type of training places great demands on the content, both on quality and quantity. Content on a mobile platform should be extremely straightforward and simple, and without prejudice to its depth and

features of the lessons. The active use of mobile learning does not aim to replace computers with portable gadgets, but rather expands and complements the educational environment with interesting new methods that are more preferable and more accessible to students.

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Применение информационных технологий и мобильных приложений для подготовки будущих специалистов в учреждениях высшего образования

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Статья посвящена анализу и исследованию информационных технологий и мобильных приложений для подготовки студентов ВУЗ. Проанализированы актуальные проблемы подготовки студентов в условиях применения мобильных устройств. Многогранность применения мобильных устройств в учебном процессе позволяет изменить традиционную форму подачи учебного материала, применяя при этом инновационные технологии. Исследованы различные сервисы Google Apps с помощью, которых можно получить широкие возможности для информационного образования. Применяя образовательные информационные технологии можно отметить, что обучение становится интерактивным, усиливает интенсивность учебного процесса. Таким образом, внедрение новых информационных технологий и мобильных приложений в образовательный процесс вносит совершенно новые компоненты содержания образования, необходимые для подготовки конкурентоспособных специалистов.

Ключевые слова: информационная система, информационные технологии, мобильные приложения, высшее учебное заведение.

Застосування інформаційних технологій і мобільних додатків для підготовки майбутніх фахівців в закладах вищої освіти

О. О. Бородіна, А. М. Гафіяк, О. В. Шефер, С. П. Альошин

Стаття присвячена аналізу та дослідженню інформаційних технологій і мобільних додатків для підготовки студентів ВНЗ. Проаналізовано актуальні проблеми підготовки студентів в умовах застосування мобільних пристроїв. Багатогранність застосування мобільних пристроїв в навчальному процесі дозволяє змінити традиційну форму подачі навчального матеріалу, застосовуючи при цьому інноваційні технології. Досліджено різні сервіси Google Apps за допомогою, яких можна отримати широкі можливості для інформаційної освіти. Застосовуючи освітні інформаційні технології можна відзначити, що навчання стає інтерактивним, підсилює інтенсивність навчального процесу. Таким чином, впровадження нових інформаційних технологій і мобільних додатків в освітній процес вносить абсолютно нові компоненти змісту освіти, необхідні для підготовки конкурентоспроможних фахівців.

Ключові слова: інформаційна система, інформаційні технології, мобільні додатки, вищий навчальний заклад.