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ПІДГОТОВКА МАЙБУТНІХ УЧИТЕЛІВ ДО ІНТЕГРАЦІЇ МУЛЬТИМЕДІЙНИХ ТЕХНОЛОГІЙ В ОСВІТНІЙ ПРОЦЕС ГІРСЬКИХ ШКІЛ ПРИКАРПАТТЯ

Анотація. У сучасному світі підготовка майбутніх учителів вимагає не лише педагогічних знань, але й технічних навичок для інтеграції мультимедійних технологій в освітній процес, особливо у віддалених гірських школах. У статті висвітлено результати аналізу наукової літератури щодо технічних навичок, необхідних учителям для ефективного використання мультимедіа у навчанні. Було визначено, що успішна інтеграція мультимедійних засобів потребує від учителя вміння використовувати презентаційні програми (PowerPoint, Google Slides), редагувати та інтегрувати відео та аудіо файли, застосовувати онлайн-платформи (Moodle, Google Classroom) та працювати з відеоконференціями (Zoom, Microsoft Teams). Успішна підготовка учнів також залежить від вміння вчителя створювати інтерактивні завдання, використовуючи елементи ігрофікації, і проводити аналіз результатів через платформи тестування. Авторка також акцентують увагу на тому, що для віддаленого навчання особливе значення має здатність вчителя забезпечити активну онлайн-взаємодію з учнями та батьками, керуючи відеоконференціями, інтегруючи мультимедіа у навчальні матеріали та забезпечуючи високий рівень залучення учнів до освітнього процесу. Це вимагає глибоких знань з редагування мультимедійного контенту (відео, аудіо), використання симуляцій та інтерактивних програм, а також дотримання правил авторського права. Таким чином, програма підготовки майбутніх учителів повинна включати формування необхідних навичок для роботи з мультимедіа, що значно покращить якість освітнього процесу у гірських школах Прикарпаття та сприятиме розвитку комунікативних навичок учнів.

Ключові слова: підготовка вчителів, мультимедійні технології, інтеграція мультимедіа в освітній процес, гірська школа.

PREPARATION OF FUTURE TEACHERS FOR THE INTEGRATION OF MULTIMEDIA TECHNOLOGIES IN THE EDUCATIONAL PROCESS OF MOUNTAIN SCHOOLS OF CARPATHIANS

Abstract. In today's world, the training of future teachers requires not only pedagogical knowledge but also technical skills for integrating multimedia technologies into the educational process, especially in remote mountain schools. The article presents the results of an analysis of scientific literature on the technical skills necessary for teachers to effectively use multimedia in teaching. It has been identified that successful integration of multimedia tools requires teachers to be proficient in using presentation software (PowerPoint, Google Slides), editing and integrating video and audio files, applying online platforms (Moodle, Google Classroom), and managing videoconferencing (Zoom, Microsoft Teams). The successful preparation of students also depends on the teacher's ability to create interactive tasks using gamification elements and to analyze results through testing platforms. The authors emphasize that for distance learning, a teacher's ability to facilitate active online interaction with students and parents is crucial, managing video conferences, integrating multimedia into teaching materials, and maintaining a high level of student engagement in the learning process. This requires deep knowledge of multimedia content editing (video, audio), the use of simulations and interactive programs, and adherence to copyright regulations. Thus, the preparation of future teachers should include training in multimedia work, which will significantly improve the quality of education in the mountain schools of the Carpathian region and enhance students' communication skills.

Keywords: teacher training, multimedia technologies, integration of multimedia into the educational process, mountain schools.

INTRODUCTION

The problem formulation. A key aspect of the effective use of multimedia technologies in the educational process is teacher training. They must have both pedagogical knowledge and technical skills to use various multimedia tools. Therefore, the integration of digital tools into the educational process has become particularly relevant in the modern world, especially for remote schools in mountainous areas.

Analysis of recent research and publications. Ukrainian researchers such as H. Cherednychenko, L. Shapran, L. Kunytsia, M. Khomenko, D. Denisenko emphasized the importance of multimedia technologies for the process of training future teachers and implementing the educational process at school. They claimed that the integration of digital tools into the educational process allows not only to improve the learning of educational material, but also contributes to the active development of students' communicative abilities. M.Khomenko, D.Denysenko studied the impact of visualization on the learning process and information perception, they came to the conclusion that multimedia learning aids individualize the learning process, taking into account the needs and abilities of each student (Khomenko & Denysenko, 2023). The works of R.Mayer provide detailed recommendations for the effective use of multimedia technologies in education, based on cognitive psychology. They emphasize the importance of careful planning of multimedia materials to avoid overloading students, and also offer concrete examples of the use of new technologies such as VR and educational games (Mayer, 2009).

RESEARCH AIM AND TASKS

We will find out what skills future teachers need to develop in order to effectively integrate multimedia technologies into the educational process at school.

RESEARCH METHODS

In the research process the methods of theoretical analysis, generalization, specification of the research source base materials were used.

RESULTS OF THE RESEARCH

The analysis of specialized literature allowed us to determine the technical skills that a teacher needs to master in order to work with multimedia.

In order to create multimedia presentations effectively, teachers need to learn how to use presentation software, such as Microsoft PowerPoint, Google Slides, Keynote, Canva, or Prezi. They don't differ too much from each other, although they offer very diverse and interesting backgrounds for presentations.

Presenting your own slides requires the ability to create new ones, change their order and format text, images, and other elements, and use templates to ensure a consistent style and design of the presentation.

The visual design of slides, their attractiveness to children, the correct use of colors and fonts, images and graphics are important for focusing students' attention, perception and memorization of the information presented.

When planning the structure of a presentation, you need to think about the logical sequence of slides so that they can convey the main ideas and information of the lesson to children. The textual content of a slide is often accompanied by images, photos, video, and audio files, so teachers need to be able to insert and edit such files, customize their display during the presentation, and use animation and transitions between slides to improve the dynamics of perception.

To work with multimedia presentations, public speaking skills are very important in order to clearly comment on visual information, provide the necessary audio text, and answer students' questions.

After presenting information using a multimedia presentation, it is necessary to evaluate its effectiveness by asking students questions and adjusting the next presentation according to the age characteristics of the students.

These skills will help teachers create effective, interesting, and interactive multimedia presentations that enhance learning and engage students in classroom activities.

Watching videos is an integral part of the modern life of younger students, so schools have begun to actively use them to present educational content. Teachers need to be able to upload, integrate, and edit educational videos and audios into their lessons.

The easiest and most accessible platforms for storing and sharing video and audio are the following: YouTube, Vimeo, Google Drive, as well as learning platforms such as Khan Academy, TED-Ed. After saving the video or audio on your local computer, you need to insert it into presentations using programs such as PowerPoint, Google Slides, or Keynote. In addition, for distant learning, teachers need to know how to integrate media files into online learning platforms such as Moodle, Edmodo, or Google Classroom. The ability to embed video and audio into learning materials is also required for working with an interactive whiteboard.

The most difficult part of working with video and audio is editing and adapting it to the studying content, so teachers need to be familiar with video editors such as Adobe Premiere Pro, iMovie, Windows Movie Maker, or free online editors such as Clipchamp or Canva.

Video editing involves trimming unnecessary parts of the video and editing new segments, setting up transitions between segments. In addition, you need to be able to add text, titles, subtitles, background music, sound effects, and adjust their parameters: brightness, contrast, color palette of the video, and balance the sound level.

To edit audio material, you need to know the basics of working with audio editors such as Audacity, Adobe Audition, or online tools such as Online Audio Cutter. The ability to trim audio tracks, reduce noise, delete unnecessary parts, insert new audio fragments, as well as knowledge of how to adjust the volume, level of sound effects, add background music will be very useful for teachers to work with multimedia.

When using materials borrowed from the Internet, it is important to follow copyright rules to avoid violations regarding their use.

These skills will help teachers to effectively use media files to enhance the learning process and provide a more interactive and engaging lesson.

To increase interactivity and engagement of students, it is desirable to have the ability to insert images, video and audio into tasks; add interactive elements such as timers, scores, difficulty levels to make testing more exciting; use gamification elements, for example, points, ratings, medals to increase students' motivation to pass them.

Online testing platforms have tools for analyzing and evaluating student performance. Such feedback, through reviewing test results, will help both teachers and students understand mistakes and improve their knowledge of the material.

These skills help the teacher to effectively use interactive applications to create engaging and educational tasks that increase student engagement and improve learning outcomes.

To work with simulation programs that are used to demonstrate various communication situations, teachers need to familiarize themselves with programs such as PhET Interactive Simulations, Labster, SimCityEDU, create an account on the platform, and configure the basic settings. To use all the functions of the program, after opening the simulations, you need to set up navigation between different screens and functions, set the simulation parameters for the appropriate learning objectives and levels of students' speech development.

After the simulation is demonstrated, you should discuss the results of the viewing, help students analyze the information received, and supplement the simulation by creating additional tasks and activities to help consolidate the knowledge gained.

For effective online communication with students and parents, as well as for conducting video conferences and video lessons in distant learning, teachers need to be able to use popular video conferencing platforms such as Zoom, Microsoft Teams, Google Meet, Skype, etc.

When preparing for a video meeting, you need to schedule it in the electronic schedule and send invitations to its participants, and, if necessary, send instructions for joining. Moderation of a video meeting by a teacher implies the ability to manage the conference and its participants (turning on and off microphones, inviting to a chat, analyzing the answers received, etc.) and meticulously organizing discussions.

It is extremely important to have developed communication skills when conducting remote meetings: the ability to express your thoughts clearly and understandably to ensure effective communication; to listen actively and attentively to understand the needs and questions of students or parents, to provide constructive feedback by answering questions, and to solve communication, learning, or technical problems, to save video conference recordings for further analysis and improvement.

During video lessons, they also use whiteboards, but virtual or other collaborative tools, such as Google Docs or Jamboard, or interactive collaborative editing platforms.

These skills will help the teacher effectively organize and conduct online communication, ensuring quality interaction with students and parents and maintaining a high level of learning.

CONCLUSIONS AND PROSPECTS OF FURTHER RESEARCH

Thus, a key aspect of the effective use of multimedia technologies in the educational process is teacher training. They must have both pedagogical knowledge and technical skills to use various multimedia tools. These skills will help teachers to ensure students' safety in the digital environment and contribute to the effective use of digital technologies in the learning process.

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