

## ADVANTAGES AND DISADVANTAGES OF DIGITAL TECHNOLOGIES

Scientific adviser: **Kh.R. Bobobekova**

Samarkand branch of TUIT

E-mail: [forever—2@mail.ru](mailto:forever—2@mail.ru)

**M.Kh. Nurullayeva**

Student of the Samarkand branch of TUIT

[malikanurullayeva01@gmail.com](mailto:malikanurullayeva01@gmail.com)

**Annotation:** In the modern world, digital technologies are becoming an integral part of everyday life, and educational institutions do not stand aside, actively introducing them into the educational process. Technologies are used in various aspects of the educational process: from solving administrative tasks to doing homework online.

**Keywords:** digital circuits, continuous audio signal, 6 billion bits, digital systems.

**Аннотация:** В современном мире цифровые технологии становятся неотъемлемой частью повседневной жизни, и образовательные учреждения не остаются в стороне, активно внедряя их в учебный процесс. Технологии используются в различных аспектах учебного процесса: от решения административных задач до выполнения домашнего задания в онлайн-режиме.

**Ключевые слова:** цифровые схемы, непрерывный звуковой сигнал, 6 миллиардов бит, цифровые системы.

**Annotatsiya:** Zamonaviy dunyoda raqamli texnologiyalar kundalik hayotning ajralmas qismiga aylanib bormoqda va ta'lim muassasalari chetda qolmadi, ularni o'quv jarayoniga faol kiritmoqda. Texnologiyalar o'quv jarayonining turli jabhalarida qo'llaniladi: ma'muriy vazifalarni hal qilishdan tortib, uy vazifalarini onlayn bajarishgacha.

**Kalit so'zlar:** raqamli sxemalar, uzluksiz audio signal, 6 milliard bit, raqamli tizimlar.

One of the advantages over digital circuits is that, firstly, signals can be transmitted without distortion. For example, a continuous audio signal transmitted as a sequence of 1s and 0s can be reproduced without error if the transmission noise level is low enough not to interfere with the detection of 1s and 0s. An hour's worth of music can be stored. A CD only uses about 6 billion bits.

Computer-controlled digital systems can be controlled by software, adding new features without replacing hardware. Often this can be done without the involvement of the manufacturer by simply updating the software. This feature allows you to quickly adapt to changing requirements. It is also possible to use complex algorithms that are not possible or feasible in analog systems, but only at a very high cost.

It is easier to store information in digital systems than in analog systems. The noise immunity of digital systems allows data to be stored and retrieved without damage. In an analog system, aging and wear and tear can corrupt the recorded information. In digital mode, information can be accurately recovered if the total noise does not exceed a certain level.

Digital technologies can engage today's schoolchildren even in subjects that initially did not arouse their interest or power. These technologies enable the introduction of new teaching methods and focus on the needs of students, which help to engage and improve the educational outcomes of students who are lagging behind.

Flexible and interactive learning allows you to achieve the highest level of mastering the material. In addition, the use of gadgets in the school curriculum helps to develop digital literacy among students - this is one of the key competencies of the 21st century necessary for success in later life.

The future of modern schoolchildren is inextricably linked with technology. Learning with their help allows them to adapt quickly and succeed in further studies, careers and adulthood. Therefore, the importance of introducing digital devices and applications into school practice is undeniable.

Disadvantages In some cases, digital circuits use more power than analog circuits to perform the same task, generating more heat, which increases circuit complexity, for example by adding a cooler. This may limit their use in battery powered portable devices. For example, cell phones often use a low power analog interface to amplify and tune radio signals from a base station. However, the base station can use a power-hungry but highly flexible software-defined radio system. Such base stations can be easily reprogrammed to process the signals used in new cellular communication standards.

It is also possible to lose information when converting an analog signal to digital. Mathematically, this phenomenon can be described as rounding error.

In some systems, the loss or corruption of a single piece of digital data can completely change the meaning of large blocks of data.

With prolonged use of files on the Internet, they can be subject to various distortions (cropping, size reduction, logo overlay, conversion to another format, deletion of metadata), which causes "digital wear". One example of this process is the use of photo hosting sites. Often, users use photo hosting sites as a place to store photos and delete the originals from their devices, which leaves them with degraded photos.

So, the advantages of digital technology outweigh the disadvantages.

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