Development prospects in the context of dynamic technological change

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► Digital technologies are rapidly transforming all areas of society—from education, healthcare, manufacturing, communications, tourism, and trade.

► These transformations are underpinned by the stimulation and resulting growth of innovation, which improves access and the efficient use of resources.

► There is a need to develop appropriate innovative strategies that will make it possible to use the existing dynamic potential of digital technologies to optimally ensure development in the strategic period on a global scale.

► The evolution of information technology has had a significant impact on educational processes, constantly improving teaching methods, the structure of the educational environment, teaching methods and techniques, and educational outcomes.

► The first stage of development is characterized by the introduction of computers into educational processes, when only the automation of administrative tasks and the processing of large data sets was implemented [1].

► The second stage is associated with the advent of personal computers and the internet, which changed the methods of accessing information, the speed of its transmission, and the dissemination of information in the educational sphere.

► The subsequent advent of email and web browsers enabled collaborative research, the rapid dissemination of information, providing all participants in the educational process with access to digital resources and the opportunity to participate in online learning [1].

► The third stage is registered by the appearance of multimedia and digital educational technologies, which have significantly expanded the scope and potential of teaching methods, techniques, and forms.

► Interactive multimedia resources, e-books, and learning management systems (LMS) have provided new opportunities to increase student engagement, enhance learning effectiveness, and assess learning outcomes, while fostering engaging, dynamic, and interactive learning environments.

► The fourth phase of educational information technology (EIT) development is characterized by the growth of mobile devices, cloud computing, and digital analytics, which provide access to educational resources and personalized learning anytime, anywhere.

► This allows for increased flexibility in the learning process, reaching a significantly wider audience, and ensuring continuous learning [1].

► The fifth phase of educational technology transformation continues to unfold and is based on the application of artificial intelligence, virtual reality, and augmented reality [1].

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- ► Al-powered tools and intelligent learning systems also play a key role in education, significantly improving the personalization of learning, automating most administrative tasks, and enabling real-time interaction with students.
- ► Robotics, based on laboratory experiments, modelling, and hands-on demonstrations, plays a special role [3].

➤ The use of business analytics technologies allows institutions to analyze large volumes of data to identify current and future trends, which forms the basis for informed decision-making.

▶ Blockchain technologies ensure the security, integrity, and transparency of information, educational documents, and certificates. They enable the creation of tamper-proof digital transcripts and certificates, facilitating the verification and recognition of educational documents across institutions and countries [1-3].

- ► Cloud computing technologies provide real-time, continuous access to educational resources, collaboration tools, and learning management systems.
- ► Cloud technologies also enable the creation of a scalable infrastructure for hosting online courses, digital libraries, and research databases, increasing the accessibility and reliability of educational services.

► Mobile and digital marketing technologies enlargement student inclusion and the effectiveness of communications and promotion of educational services.

▶ 3D printing technology facilitates hands-on learning in engineering, architecture, design, healthcare, and other fields of study.

▶ Digital storage technologies provide secure and scalable storage of data, multimedia resources, and many other important data. They also enable efficient searching, sorting, sharing, and storage of data [1-3].

▶ Virtual and enhance reality technologies expand the possibilities of immersive learning, simulations, and virtual tours. They allow students to visualize various things, explore complex concepts, interact with digital artifacts, and engage in experiential learning, improving understanding and retention of course material.