PRODIGE

PROMOTING HIGH-QUALITY DIGITAL EDUCATION IN GEORGIA

DIGITAL EDUCATION: KEY TERMS AND CONCEPTS

TRAINING ON DIGITAL EDUCATION IN HIGHER EDUCATION – DAY 1

prodige.com.ge

TAL TECH

With the support of the Erasmus+ Programme of the European Union

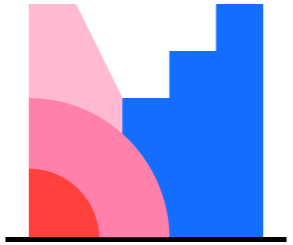
MOTIVATION

2022-2030 UNIFIED NATIONAL STRATEGY OF EDUCATION AND SCIENCE OF GEORGIA

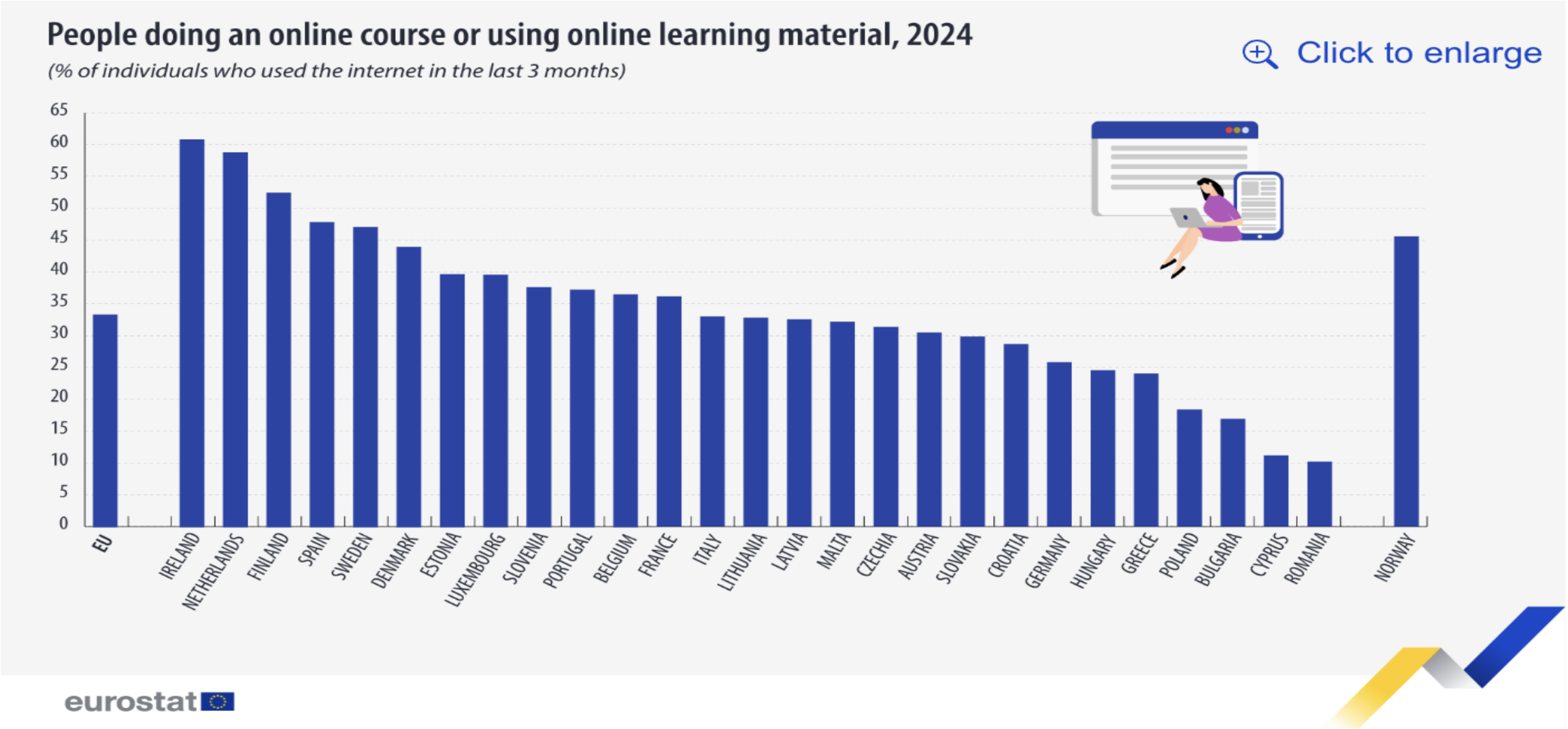
- The pandemic caused by Covid-19 has accelerated **the pace of digital transformation**, which will have a significant impact on the development of the economy and society.
- Digital technologies and the rapid development of artificial intelligence, along with the automation of processes, are expected to increase the demand for **technological**, social, emotional, and higher cognitive skills
- In this sense, in the wake of digital transformation, the challenge is not only to develop skills and competencies but also to **directly strengthen digital education and science ecosystems.**

What is the first word that comes to your mind when you think of "digital education"?

How important is digital education compared to other challenges in education today in Georgia?



https://ec.europa.eu/eurostat/en/web/products-eurostat-news/w/DDN-20250124-1



Source dataset: isoc_ci_ac_i

THREE GOALS OF EDUCATION SYSTEMS ENABLED BY DIGITAL EDUCATION TECHNOLOGIES (OECD 2023)

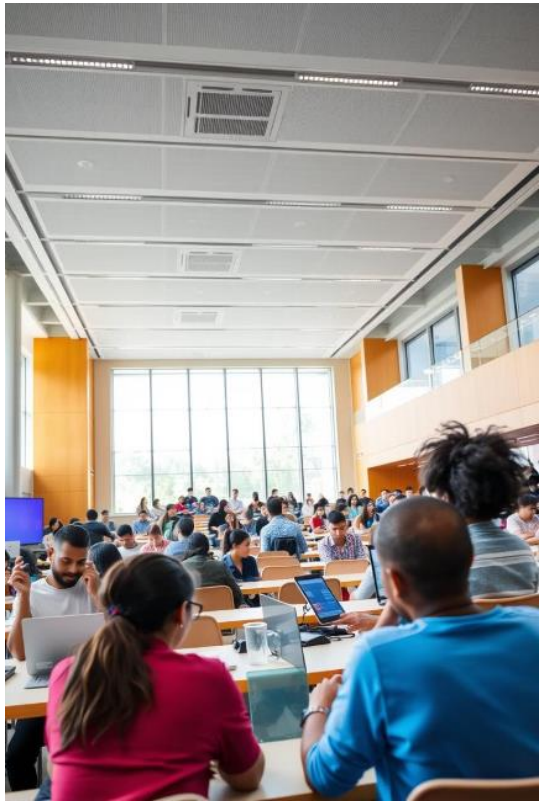
- **Quality** - by enhancing the quality of teaching and students' learning experience
- **Equity** - by promoting equity, access and inclusion through personalised learning tools and assistive technologies
- **Efficiency** - by saving costs and making educators' work more efficient.

OECD (2023), Shaping Digital Education: Enabling Factors for Quality, Equity and Efficiency, OECD Publishing, Paris, https://doi.org/10.1787/bac4dc9f-en

Please rate your general understanding of the following digital education concepts:

- Digital Education
- Blended Learning
- Synchronous Learning
- Asynchronous Learning
- Learning Management System (LMS)
- Personalized Learning
- Adaptive Learning

FOUNDATIONS OF DIGITAL EDUCATION



- **Digital Education (eLearning)**: all forms of teaching and learning enhanced by the use of digital technologies. Learning is facilitated by technology to enhance, support, or replace traditional methods.
- **Online education**: Type of education, all instruction is delivered online, either synchronously or asynchronously, or a combination of both.
- **Hybrid education:** Type of education, relies on mix of online and face-to-face instruction, with the online components taking place synchronously, asynchronously, or as a combination of both.
- **Personalized Learning**: Tailoring the educational experience to meet individual learner needs, preferences, and pace.
- **Blended Learning**: A mix of online digital resources and face-to-face learning experiences. Instruction takes place fully in-person and learning is blended with and complemented by online materials and activities.
- **Distance Learning**: Education delivered entirely online, without physical presence.
- **Synchronous Learning**: Real-time online education with live interaction.
- **Asynchronous Learning**: Learning materials accessed at any time, self-paced by the learner.

TECHNOLOGY IN DIGITAL EDUCATION

- **Learning Management System** (LMS): Platforms for delivering, managing, and tracking educational content (e.g., Moodle, Blackboard, Canvas, Google Classroom) and learner progress.
- **Virtual Learning Environment** (VLE): An online system that replicates classroom functionalities, virtual classrooms (Zoom, MS Teams, Google Meet).
- **EdTech Tools**: Technology tools, interactive apps designed to enhance education, gamified learning (e.g., Kahoot, Quizlet, Zoom).
- **Collaborative Tools**: support group work, document sharing, joint projects (Docs, Slides, Trello).
- **E-books and Digital Libraries**
- **Artificial Intelligence (AI) in Education**: Tools for personalized learning, virtual tutors, and analytics (e.g., adaptive learning platforms, Khan Academy, DreamBox).
- **Immersive Learning, Augmented Reality (AR) and Virtual Reality (VR)**: Immersive technologies for interactive learning experiences.

What type of digital education tools have you used before?

DIGITAL EDUCATION TECHNOLOGIES/ DIGITAL INFRASTRUCTURE

- **networking** including on-site networking (wired and wireless, staff, students, and public) and longhaul and off-site networking, including telecommunication services;
- on-premises **server** hardware and audio-visual equipment;
- **end-user** devices, including general-purpose hardware devices for staff and students, such as PCs, Macs, tablets and smartphones;
- application **software** and, in particular, educational software;
- data and data centres;
- cloud services;
- capability services such as **technical support**.

PEDAGOGICAL STRATEGIES IN DIGITAL EDUCATION

- **Flipped Classroom**: A model where students review materials before class and engage in activities during class.
- **Gamification**: Incorporating game elements into learning to boost engagement (Kahoot, Duolingo).
- **Adaptive Learning**: Technology-driven customization of learning paths based on individual performance and needs.
- **Collaborative Learning**: Peer-to-peer learning activities conducted online.
- **Microlearning**: Delivering content in small, focused bursts for better retention.
- **Lifelong Learning**: Continuous skill development throughout a person's life.

FLIPPED CLASSROOM

The flipped classroom reverses the traditional learning model. Instead of introducing new material during class and assigning homework afterward, students study the material beforehand, often through videos, readings, or other digital resources.

In Practice: Class time is then dedicated to interactive, hands-on activities such as group discussions, problem-solving exercises, or applying concepts in real-world scenarios.

Benefits:

- Promotes active learning and deeper understanding.
- Allows students to learn at their own pace before class.
- Frees up classroom time for collaborative and critical thinking tasks.

Challenges:

- Requires students to be disciplined in preparing before class.
- Teachers must invest time in creating or curating high-quality preparatory materials.

GAMIFICATION

Gamification integrates game-like features—such as points, badges, leaderboards, and challenges—into educational settings to motivate learners and enhance engagement.

Examples:

- Kahoot: A platform where teachers create quizzes that students answer in a competitive, game-like environment.
- Duolingo: Language learning through gamified tasks, streaks, and rewards.

Benefits:

- Makes learning fun and interactive.
- Boosts participation and motivation.
- Encourages healthy competition among learners.

Challenges:

- Over-reliance on rewards may reduce intrinsic motivation.
- Needs to be carefully designed to ensure learning outcomes remain the focus.

ADAPTIVE LEARNING

Adaptive learning uses technology (often AI) to tailor educational content and experiences based on an individual's performance, needs, and preferences.

How It Works:

- Systems assess a learner's strengths, weaknesses, and progress.
- Content and questions are adjusted dynamically—harder for advanced learners, simpler for those who need more support.

Examples:

- Math platforms like ALEKS, which customize problem sets.
- Language apps like Lingvist, adjusting content based on user vocabulary.

Benefits:

- Personalizes education for each learner.
- Helps close learning gaps.
- Supports mastery at an individualized pace.

Challenges:

- Requires access to advanced technology.
- Teachers need training to interpret data and adjust teaching accordingly.

COLLABORATIVE LEARNING

This method involves students working together, often online, to solve problems, complete projects, or learn concepts by leveraging each other's skills and knowledge.

Examples:

- Group discussions on platforms like Google Classroom or Microsoft Teams.
- Collaborative document creation with tools like Google Docs.

Benefits:

- Encourages communication and teamwork.
- Helps students learn from peers' perspectives.
- Promotes accountability and shared responsibility.

Challenges:

- Requires clear guidelines to ensure equal participation.
- Time zones and differing schedules in online settings can create obstacles.

MICROLEARNING

Microlearning breaks down educational content into small, manageable chunks that focus on specific topics or skills.

Formats:

- Short videos (e.g., 3-5 minutes).
- Infographics, quizzes, or quick-read articles.
- Mobile-friendly lessons designed for on-the-go learning.

Examples:

- Coursera bite-sized lessons.
- Apps like Quizlet or EdApp, offering microlearning modules.

Benefits:

- Enhances retention by avoiding information overload.
- Fits easily into busy schedules.
- Supports just-in-time learning for specific tasks.

Challenges:

- May lack depth for complex topics.
- Needs thoughtful design to ensure coherence.

LIFELONG LEARNING

Lifelong learning emphasizes continuously developing skills and knowledge throughout life, often to adapt to changing job markets and personal interests.

Contexts:

- Formal education (e.g., certifications, degree programs).
- Informal methods like podcasts, webinars, or community workshops.
  - Online courses through platforms like edX, Udemy, or LinkedIn Learning.
  - Local community classes or professional development seminars.

Benefits:

- Enhances adaptability to career changes.
- Supports intellectual curiosity and personal growth.
- Keeps skills relevant in fast-changing industries.

Challenges:

- Time and financial constraints for learners.
- Requires self-motivation and discipline.

What skills do educators need most to succeed in digital education?

DIGITAL CONTENT DEVELOPMENT

- **Open Educational Resources (OER)**: Free and openly licensed educational materials available for teaching, learning, and research.
- **Interactive Media**: Videos, simulations, and quizzes integrated into lessons.
- **SCORM and xAPI**: Standards for creating, delivering, and tracking eLearning content.
- **Multimodal Learning**: Using multiple media forms (text, audio, video) to cater to various learning styles.

LEARNER EXPERIENCE AND ACCESSIBILITY

- **Digital Literacy**: Skills to effectively use digital tools and technologies for learning, communication, and collaboration.
  - Critical evaluation of online resources, cybersecurity awareness, and technical proficiency.
- **Universal Design for Learning (UDL)**: Designing learning experiences to be accessible to all learners, regardless of ability or disability.
  - Screen readers, captions for video content, and flexible assessment methods.
- **Accessibility Standards**: Ensuring eLearning platforms are usable by individuals with disabilities (e.g., WCAG, Web Content Accessibility Guidelines compliance).
- **User Experience (UX)** in eLearning: Enhancing ease of navigation, interactivity, and engagement.

THE NEEDS THAT WEB ACCESSIBILITY AIMS TO ADDRESS INCLUDE

- **Visual**: Visual impairments including blindness, various common types of low vision and poor eyesight, various types of color blindness;
- **Motor/mobility**: e.g. difficulty or inability to use the hands, including tremors, muscle slowness, loss of fine muscle control, etc., due to conditions such as Parkinson's disease, muscular dystrophy, cerebral palsy, stroke;
- **Auditory**: Deafness or hearing impairments, including individuals who are hard of hearing;
- **Seizures**: Photo epileptic seizures caused by visual strobe or flashing effects;
- **Cognitive and intellectual**: Developmental disabilities, learning difficulties (dyslexia, dyscalculia, etc.), and cognitive disabilities (PTSD, Alzheimer's) of various origins, affecting memory, attention, developmental "maturity", problem-solving and logic skills, etc.

ASSESSMENT AND EVALUATION

- **Formative Assessment**: Continuous, real-time feedback to guide learning.
- **Summative Assessment**: Evaluations at the end of a course or unit (e.g., exams, final projects).
- **Digital Badges and Certificates**: Recognitions for skill attainment and course completion.
- **Data-Driven Learning and Analytics**: Using learner data to analyze performance, predict outcomes, and inform instructional strategies.
  - Early intervention systems for struggling students.

EMERGING TRENDS AND TECHNOLOGIES

- **MOOCs (Massive Open Online Courses)**: Open-access courses available to a large audience (e.g., Coursera, edX).
- **AI**: Enables personalized tutoring, automated grading, and content recommendation.
- **AR/VR**: Provides immersive, experiential learning opportunities.
  - Significance: Revolutionizes the learning experience, making it more engaging and interactive.
  - Examples: VR simulations in medical training, AI chatbots for learner support.

CHALLENGES AND CONSIDERATIONS

- **Digital Divide**: Unequal access to technology, digital skills and internet connectivity.
- **Cybersecurity and Privacy**: Protecting learner data in online platforms.
- **Engagement in Online Learning**: Strategies to maintain motivation and participation.
- **Teacher Training**: Equipping educators with the skills for digital teaching.

PRODIGE

THANK YOU !

FOR PROMOTING HIGH-QUALITY DIGITAL EDUCATION IN GEORGIA

prodige.com.ge

TAL TECH

With the support of the Erasmus+ Programme of the European Union