PRODIGE

PROMOTING HIGH-QUALITY DIGITAL EDUCATION IN GEORGIA

CHALLENGES IN DIGITAL EDUCATION

HUMAN-TECHNOLOGY INTERACTION

TRAINING ON DIGITAL EDUCATION IN HIGHER EDUCATION – DAY 3

prodige.com.ge

TAL TECH

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

HUMAN-TECHNOLOGY INTERACTION IN 21ST CENTURY EDUCATION

1 Accessibility and Flexibility

Online learning platforms and digital resources have expanded access to education, allowing students to learn from anywhere in the world at their own pace.

2 Personalized Learning Experiences

Technology empowers educators to tailor learning paths to individual student needs, leveraging adaptive learning platforms and personalized feedback tools.

3 Focus on 21st-Century Skills

Digital literacy, critical thinking, problem-solving, and collaboration are essential for navigating the digital age, and higher education is evolving to incorporate these skills into the curriculum.

TAL TECH

PRODIGE
PROMOTING HIGH-QUALITY DIGITAL EDUCATION IN GEORGIA

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

THE IMPACT OF TECHNOLOGY ON TEACHING AND LEARNING

Enhanced Engagement

Interactive simulations, gamified learning, and virtual reality experiences make learning more engaging and immersive, fostering deeper understanding.

Improved Collaboration

Online discussion forums, collaborative platforms, and video conferencing tools facilitate seamless interaction and collaboration among students and educators.

Data-Driven Insights

Learning management systems track student progress and provide valuable data for educators to personalize instruction and identify areas for improvement.

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

HUMAN-TECHNOLOGY INTERACTION

The way individuals interact with digital tools and platforms in educational settings.

- **User Experience** (UX) Issues:
  - Complicated or unintuitive interfaces.
  - Overwhelming amount of features causing confusion.
- **Tech Fatigue**: Excessive screen time leading to disengagement or burnout.
- **Accessibility**:
  - Insufficient accommodations for learners with disabilities.
  - Poor compliance with accessibility standards (e.g., WCAG).
- **Data Privacy and Security**:
  - Concerns over the safety of student and staff data.
  - Lack of awareness about digital security practices.
- **Loss of Human Connection**:
  - Reduced personal interaction in virtual settings.
  - Challenges in building rapport and emotional connection between learners and educators.

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

HUMAN-TECHNOLOGY INTERACTION

- Poorly designed digital interfaces and lack of accessibility features can lead to frustration, disengagement, and inequitable learning experiences, particularly for students with disabilities or those from disadvantaged backgrounds.

- Impact:
  - Frustration and disengagement among users.
  - Inequitable learning experiences for students with diverse needs.
  - Trust issues in using digital platforms.

Table 3.1. Personalised learning technologies with different degrees of teacher control

Level of automation	Distribution of control and functions of technology	Examples of technologies
Level 0 (Teacher only)	Teacher controls	Technologies that are fully teacher controlled, without organising function
Level 1 (Teacher assistance)	Teacher has full control; Technology provides supportive information (supporting teachers, describing and mirroring learners' behaviour)	Electronic learning environments; Learning management systems; Teacher dashboards; AI-based analyses of classroom dynamics (e.g. sensors to analyse student engagement)
Level 2 (Partial automation)	Teacher monitors technology; Technology controls specific tasks (describing, diagnosing, advising and in specific cases enacting actions)	Programmes (e.g. Snappet (2023[10])) that select problems adjusted to the needs of individual students or provides feedback on their solutions; Chat bots providing feedback
Level 3 (Conditional automation)	Teacher monitors incidentally, but can resume control at all time; Technology signals when teacher control is needed and controls broader set of tasks	Programmes (e.g. Cognitive Tutor (Pane et al., 2014[11])) that select problems and give feedback on each problem-solving step as students' progress and notify teachers when they need to step in
Level 4 (High automation)	Teacher control and monitoring is not required for specific tasks; Technology requests teacher control and controls most tasks automatically	Intelligent tutoring systems (e.g. MathSpring (Arroyo et al., 2014[12])) that guide the learner in selecting learning goals and offer personalised instruction, practice opportunities and feedback
Level 5 (Full automation)	Technology controls all tasks automatically	Some language learning technologies are evolving in this direction (e.g. Alelo (2023[13]))

Source: Molenaar (2021[9]), "Personalisation of learning: Towards hybrid human-AI learning technologies", in *OECD Digital Education Outlook 2021: Pushing the Frontiers with Artificial Intelligence, Blockchain and Robots*, https://doi.org/10.1787/2cc25e37-en.

HUMAN-TECHNOLOGY INTERACTION, SITUATION IN GEORGIA
STRATEGY 2022-2030

- Significant steps have been taken to develop an inclusive education system.
- From 2012 through 2021, the number of students with special educational needs at all general education levels increased from 500 to 11,281.
- Various educational and methodological resources have been created to support special educational needs students' learning and studying processes.
- More than 1,000 people with special educational needs and disabilities have been included in the system.

- "Teleschool" project
- Microsoft Office 365 TEAMS created virtual classrooms for all school classes and subjects and Microsoft Office 365 user profiles (528,327 students and 52,124 teachers)

TAL TECH

PRODIGE
PROMOTING HIGH-QUALITY DIGITAL EDUCATION IN GEORGIA

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

HUMAN-TECHNOLOGY INTERACTION, CHALLENGES
STRATEGY 2022-2030

- While the education and science sector responded immediately to the difficulties caused by the pandemic, the pandemic **deepened digital inequality**.

- As for strengthening the quality of inclusive education at all levels of education, the challenge is the qualification and availability of **inclusive education specialists**.

- Lack of modern technology and internet limits students' access to digital resources, which are increasingly important for contemporary education

Y. Mitaishvili-Rayyis, 2023

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

THE EVOLVING ROLE OF THE EDUCATOR IN DIGITAL ENVIRONMENTS

- **Facilitator of Learning**: Educators act as guides and facilitators, helping students navigate digital resources and develop critical thinking skills.

- **Curator of Information**: Educators are responsible for selecting and curating reliable and relevant digital resources for students, fostering digital literacy and critical evaluation skills.

- **Tech-Savvy Instructor**: Educators must be proficient in using a variety of digital tools and platforms to enhance the learning experience and engage students in the digital age.

TAL TECH

PRODIGE
PROMOTING HIGH-QUALITY DIGITAL EDUCATION IN GEORGIA

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

STAFF PREPAREDNESS

- Readiness and ability of educators to use digital tools and methodologies effectively.

Challenges:

- **Insufficient Training**: Lack of comprehensive professional development programs for digital teaching.
- **Resistance to Change**: Reluctance among educators to adopt new technologies or modify traditional teaching methods.
- **Overwhelm with Tools**: Difficulty in selecting and mastering the multitude of EdTech tools available.
- **Time Constraints**: Limited time for educators to learn and integrate new technologies alongside existing responsibilities.
- **Inadequate Support**: Lack of institutional support for troubleshooting, updates, and technology management.

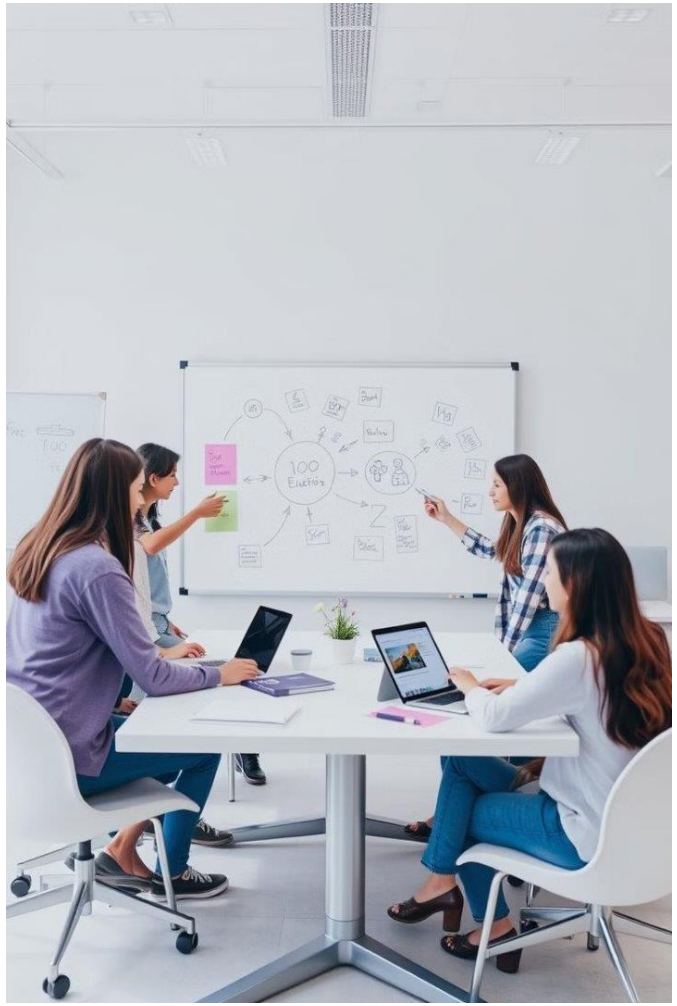
STAFF PREPAREDNESS

- The OECD emphasizes the need for innovative digital professional learning for teachers to enhance their digital skills and teaching methodologies. https://www.oecd.org/en/publications/innovating-teachers-professional-learning-through-digital-technologies_3329fae9-en.html

- Impact:
  - Poor integration of digital tools into curriculum.
  - Reduced confidence and motivation among educators.
  - Limited engagement and effectiveness of digital education.

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

STAFF PREPAREDNESS



Digital Literacy Training

Educators require training in using digital tools, navigating online learning platforms, and evaluating online information.

Pedagogical Adaptation

Educators need to adapt their teaching methods to the digital environment, integrating technology seamlessly into the curriculum.

Collaborative Learning

Collaboration among educators is crucial for sharing best practices, developing innovative approaches, and supporting each other in the digital transition.

TAL TECH

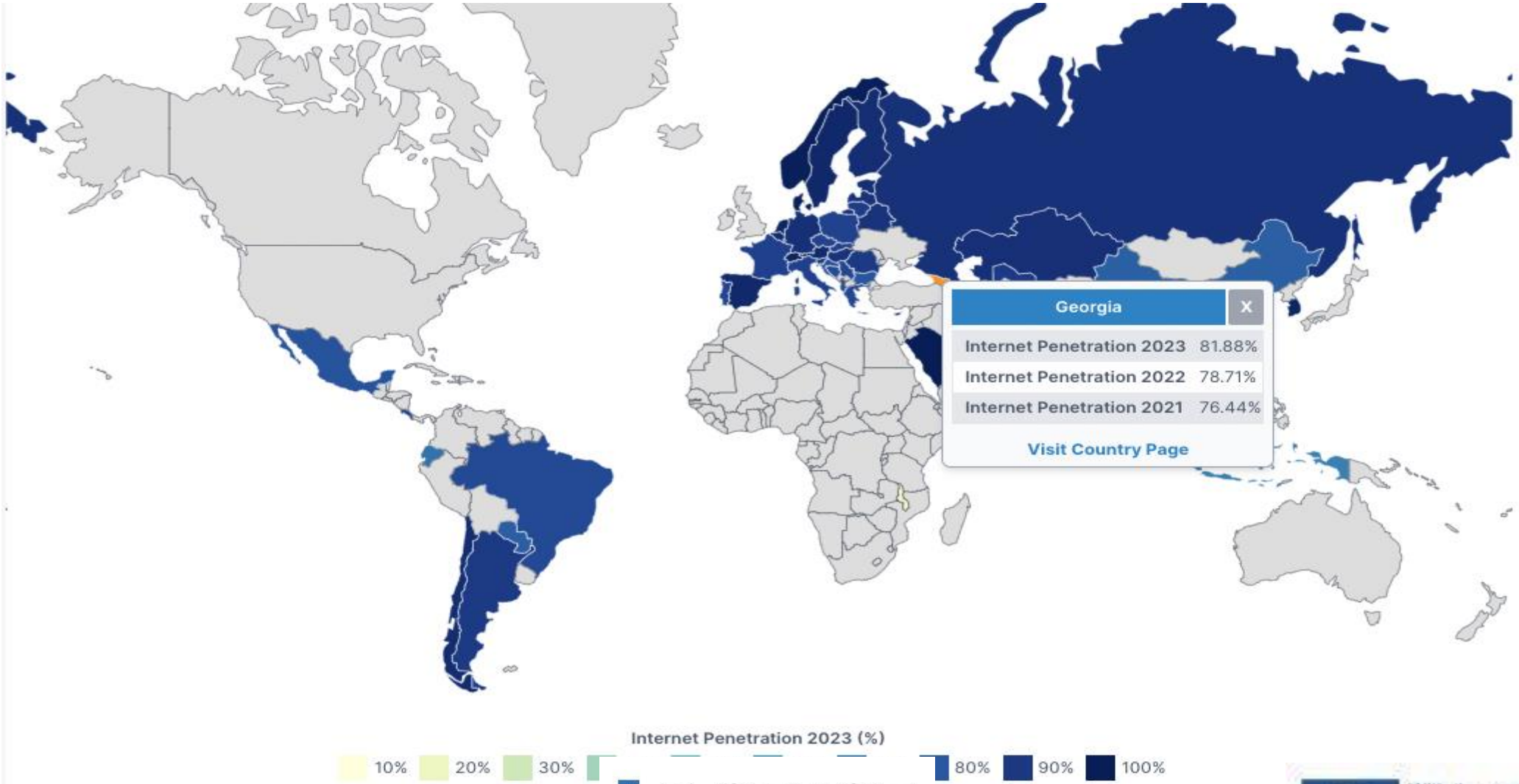
PRODIGE
PROMOTING HIGH-QUALITY DIGITAL EDUCATION IN GEORGIA

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

DIGITAL DIVIDE

- The gap between those who have access to technology and the internet and those who do not.
  - **Access to Devices**: Lack of access to smartphones, laptops, or tablets in underserved communities.
  - **Internet Connectivity**: Insufficient or unreliable internet access, particularly in rural or economically disadvantaged areas.
  - **Infrastructure Disparities**: Limited availability of IT infrastructure, such as power supply and broadband services.
  - **Affordability**: High costs of devices, software, and internet services prevent equal access.
  - **Digital Literacy Gap**: Limited skills to effectively use digital tools among learners and families.

HTTPS://WORLDPOPULATIONREVIEW.COM/COUNTRY-RANKINGS/INTERNET-PENETRATION-BY-COUNTRY



DIGITAL DIVIDE

- During the COVID-19 pandemic, students without reliable internet or devices faced significant barriers to participating in remote learning, exacerbating educational inequalities.

- The digital divide leads to unequal educational opportunities, with students from low-income families disproportionately affected, resulting in lower academic performance and limited digital literacy.

- Impact:
  - Exacerbates educational inequality.
  - Hinders participation in digital learning environments.
  - Limits the use of advanced digital education tools.

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

GEORGIA

- 2022-2030 Unified National Strategy of Education and Science of Georgia, https://mes.gov.ge/content.php?id=7755&lang=eng
  - In the context of higher education and research internationalization, one of the critical challenges is international and domestic mobility, as well as **unequal access to virtual and remote internationalization**.
  - The legal framework is still not fully adapted to developing virtual and remote internationalization opportunities.
  - remote participation in the virtual international space is less favorable for disadvantaged groups due to the lack of access to information, language barriers, digital resources, and competencies

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

ADDRESSING CHALLENGES

- **Improving Human-Technology Interaction**:
  - Design user-friendly, accessible digital platforms.
  - Prioritize accessibility compliance and tools for learners with disabilities.
  - Promote healthy digital habits to prevent tech fatigue.
  - Build a hybrid model to maintain human interaction and emotional connection.

ADDRESSING CHALLENGES

- **Enhancing Staff Preparedness**:
  - Offer ongoing professional development focused on digital pedagogy.
  - Provide time and resources for staff to familiarize themselves with tools.
  - Establish mentorship programs to support educators in adopting new technologies.

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

ADDRESSING CHALLENGES

- **Bridging the Digital Divide**:
  - Invest in infrastructure and affordable internet solutions.
  - Provide devices and digital literacy training to underserved communities.
  - Develop public-private partnerships for resource sharing.

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

Rank these challenges in digital education from most to least critical in your institution:

- **Resistance to change** (adoption of new tools and methods by staff and students).
- **Infrastructure** (availability of reliable technology and internet connectivity).
- **Digital divide** (disparities in access to technology among students and staff).
- **Staff** (preparedness, training, and willingness to integrate digital tools).
- **Human-technology interaction** (ease of use, user experience, and minimizing tech fatigue).

TAL TECH

PRODIGE
PROMOTING HIGH-QUALITY DIGITAL EDUCATION IN GEORGIA

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

THANK YOU !

FOR PROMOTING HIGH-QUALITY DIGITAL EDUCATION IN GEORGIA

prodige.com.ge

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