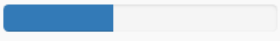
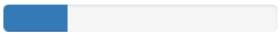
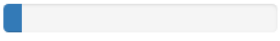
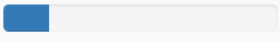
Poll – Emerging technologies and related educational practices

This report summarises and comments upon the 30 responses that we received to the poll. Many thanks to all those who responded.

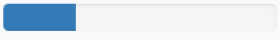
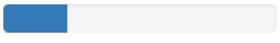
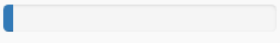
1. Multiple Choice items

These responses indicate the wide range of perspectives taken by the respondents, though some technologies and practices were clearly seen as emerging by most respondents.

Recent reports have identified a number of emerging technologies, some of which we list below. Which do you think are emerging technologies in your context?

		Answers	Ratio
Virtual Reality		19	63.33 %
Augmented Reality		22	73.33 %
Artificial Intelligence		26	86.67 %
Learning Analytics		17	56.67 %
3D Printing		12	40.00 %
Live Streaming		7	23.33 %
Learning Games and Simulations		18	60.00 %
Wearable Technologies		2	6.67 %
Open Educational Resources		18	60.00 %
Robotics		17	56.67 %
Drones		5	16.67 %

Recent reports have identified a number of emerging practices, some of which we list below. Which do you think are emerging practices in your context?

		Answers	Ratio
Streaming of live lessons		8	26.67 %
Adaptive learning		18	60.00 %
Collaborative learning		18	60.00 %
Blended learning		20	66.67 %
Learning in immersive virtual environments		16	53.33 %
Hybrid Learning		15	50.00 %
Game based learning		16	53.33 %
Mobile learning		7	23.33 %
No Answer		1	3.33 %

2. What other emerging technologies would you identify in your context?

A wide range of quite different emerging technologies were suggested. It is clear that what may be emerging technologies in some contexts may be well established in other contexts. One response argued that for transition countries, AI systems such as Large Language Models could make possible what has been not possible previously due to a lack of resources.

Generative AI,	Emerging tech in assessment and simulations to support STEM
Green technologies	Adaptive learning resources
Technologies tracking and supporting mental health	e-books
Chatbot	Virtual classrooms
Educational metaverse	Social media and Didactic
Massively multiplayer online games (e.g., Minecraft) for educational purposes	Text generating technologies (not intelligent ones)
Block-chain	Image recognition

3. What other emerging practices would you identify in your context?

A wide range of emerging practices were also identified, and as with the emerging technologies it is clear that what may be emerging practices in some contexts may be well established in other contexts.

- Learning Lab Centers, Future Classroom Labs
- Metaverse and virtual reality games
- OER and OEP
- Pedagogies: problem-based learning, personalised learning, peer learning, flipped classrooms, collaborative learning, learning by co-creating (programming), positive learning, deep learning
- New assessment related practices: micro credentialization with digital credentials, Europass link with formal studies

4. What do you think are the two most important/relevant/promising of these emerging technologies and practices in your context?

The most common emerging technologies and practices described as important/relevant/promising were:

- Technologies: Artificial Intelligence (AI), Intelligent Tutoring Systems, Learning Analytics, Virtual Reality (VR) and Augmented Reality (AR); Open Educational Resources (OER) (with help of AI or without it)
- Modalities: Blended Learning, Mobile Learning
- Pedagogies: Collaborative Learning, Game-based Learning, Adaptive and Personalized Learning, Open Education Practices (OEP)

5. What can be done to identify promising emerging technologies, and associated educational practices? What role might Erasmus+ play here?[1]

Identifying promising emerging technologies and associated educational practices?

- Collaboration and Networking: Encourage collaboration, international exchanges, and participation in edtech conferences to share and discuss emerging technologies.
- Pilot Projects and Case Studies: Conduct pilot projects, generate case studies, and fund research to explore the methods and benefits of emerging technologies in different school contexts.
- Research and Guidelines: Conduct educational research, develop clear guidelines, and promote standardization at the policy level to identify effective educational practices.
- Funding and Support: Provide long-term financial support, funding opportunities, and a supportive environment for teachers through training and AI platforms.

The potential role of Erasmus+

- Collaboration and Exchange: Utilise Erasmus+ for school partnerships, international collaboration, and funding projects that promote the exchange of ideas and best practices.
- Funding and Research Support: Allocate funds through Erasmus+ for research, pilot initiatives, and experimentation with emerging technologies.
- Priority Setting and Guidance: Assign priorities within Erasmus+ to boost experimentation of new solutions and provide guidance for integrating emerging technologies.
- Peer Learning and Mentoring: Foster peer learning, mentoring, and utilize Erasmus+ as a programme to support educators through networks and communities of practitioners.

6. How should we go about the process of implementing emerging technologies, and practices, when, precisely because these are emerging, they are not in widespread use, and so there may be little existing good practice to show the way?

Piloting and Mentoring:

- Encourage early adopters to initiate pilot projects, providing them with support and resources.
- Mentor interested educators who are new to emerging technologies, fostering a positive mindset for experimentation.
- Conduct pilot studies and policy experimentations to gain insights and inspiring practices.

Collaboration and Sharing:

- Foster a culture of collaboration, peer reflection, and sharing of practices among educators.
- Collaborate with countries and experts who have already implemented emerging technologies to exchange experiences.
- Establish international groups and networks for research and knowledge dissemination.

Training and Professional Development:

- Provide specific training courses and exemplify learning scenarios to equip educators with necessary skills.
- Conduct experiential, hands-on workshops to educate teachers about emerging technologies.
- Develop a train-the-trainer program to prepare a new generation of teachers to support their peers.

[1] Questions 5 and 6 were summarised with the aid of ChatGPT

Partnerships with Private Sector:

- Collaborate with the private sector to test and assess the best resources and training for emerging technologies.
- Engage digital education specialists to evaluate the effectiveness of emerging technologies and practices.

Pilot Projects and Evidence-Based Approach:

- Implement short-term targeted action research activities in schools to gather evidence of practice before widespread use.
- Create test beds, future classroom labs, or showcase events to pilot and evaluate emerging technologies.
- Evaluate the results of pilot projects, publish studies, and provide recommendations for scaling up successful practices.

Policy Support and Organizational Alignment:

- Maintain a regular dialogue with supporting organizations and the ministry to identify new trends and possibilities.
- Promote applied research involving schools and provide bottom-up channels for dissemination of know-how.
- Establish guidelines and provide ongoing funding and infrastructure support for agile pilot designs.