Envisioning the future of education technology

envisioningtech.com

tferesearch.com

Marie Curie FP7

Education lies at a peculiar crossroad in society. On one hand it has the responsibility of anticipating real-life skills by preparing us for an increasingly complex world – but education methodologies can only be formalized after practices have been defined. This dichotomy is particularly aggravated when it comes to technology, where fast-paced innovation and perpetual change is the only constant.

This visualization attempts to organize a series of emerging technologies that are likely to influence education in the upcoming decades. Despite its inherently speculative nature, the driving trends behind the technologies can already be observed, meaning it's a matter of time before these scenarios start panning out in learning environments around the world.

Classroom

The prevailing paradigm of a single teacher addressing dozens of students unidirectionally in a physical setting.

Studio

Peer to Peer learning environments where groups coalesce to discuss, learn and solve problems with each other and the teacher serves as a facilitator.

Virtual

Disembodied environments, where learning, discussion and assessment happen regardless of physicality or geography.

2012

- Interactive whiteboards
- Data projectors
- Educational games
- Electronic paper screens
- Educational programming tools
- Achievements & badges
- Online school communities
- Video lessons
- Education app stores
- Open courseware
- Tablets
- Digitization of books

Today, technology is fixed and centralized, either in a computer lab or within the classroom. **1**

GAMIFICATION

Billed as an evolution in grading mechanisms, gamification brings instant feedback to acquired knowledge through achievements and points systems.

OPENING OF INFORMATION

Dissemination of information outside the physical silos of schools and classrooms, offering feedback and assessment to students anywhere.

- Student-developed apps
- Formal communication #backchannels
- Portable academic histories
- Self-paced learning
- Student-designed learning mechanics
- Flipped classrooms
- Inter-school teaching platforms

Rather than considering IT a standalone tool or skill, digitization tends to disperse throughout every facet of the classroom.

- Classroom performance dashboards

DIGITIZED CLASSROOMS

- 3D printers
- Cascading knowledge maps
- Assessment algorithms

Comparatively, in studios and virtually, we see ubiquitous, mobile use of technology. **2**

2020

As classrooms digitize, students are free to collaborate with peers globally. **3**

- Desk-sized screens
- Eye tracking
- Object-embedded intelligence
- Wall-sized screens

DISINTERMEDIATION

Undoing the traditional teacher-student model, these technologies offer a scenario where AI handles personalization while teachers focus on teaching.

- S2S teaching platforms
- Mobile learning platforms
- Reactive materials
- Attention tracking

Embedding computation to the physical via intelligent objects, the internet of things, and connectivity with a profound impact on learning mechanisms.

Classrooms, as physical teaching models, tend to be replaced by studios and virtual teaching modes. **4**

- Task-assignment algorithms

TANGIBLE COMPUTING

- Digitally intermediated field trips
- Telepresence
- Teacher-assignment algorithms

Instruction becomes project-performance- and portfolio-based instead of traditional assessments. **5**

2030

- Eyewear / HUDs
- Algo-generated lessons
- Reactive furniture

VIRTUAL/PHYSICAL STUDIOS

Bridging the online–offline gap, these future technologies offer a potential future where embodiment is secondary to information access.

65% of today's grade school kids will end up at jobs that haven't been invented yet

Over time, education becomes a continuous, interconnected effort, allowing students to cope with a perpetually changing world. **6**

- Retinal screens
- Holography
- Neuro-informatics
- Immersive virtual reality

2040