Envisioning the future of education technology

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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.
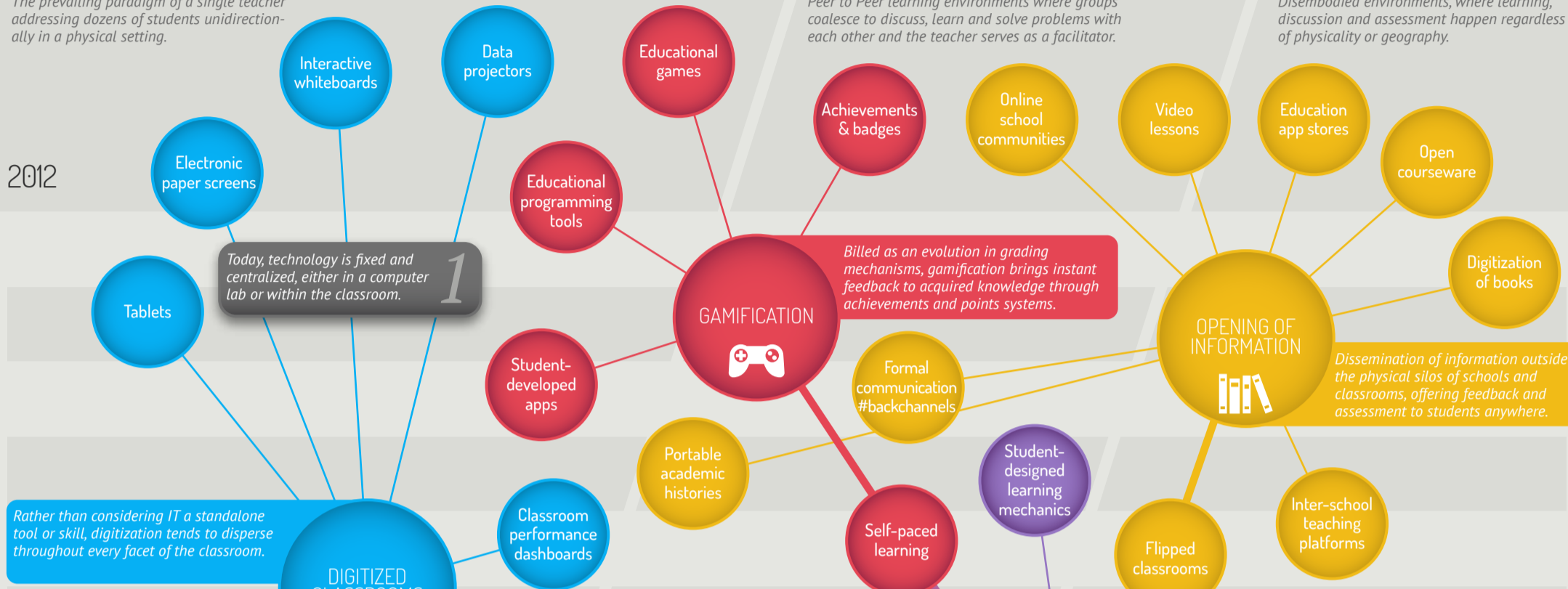
Studio
Peer to Peer learning environments where groups coalesce to discuss, learn and solve problems with each other and the teacher serves as a facilitator.
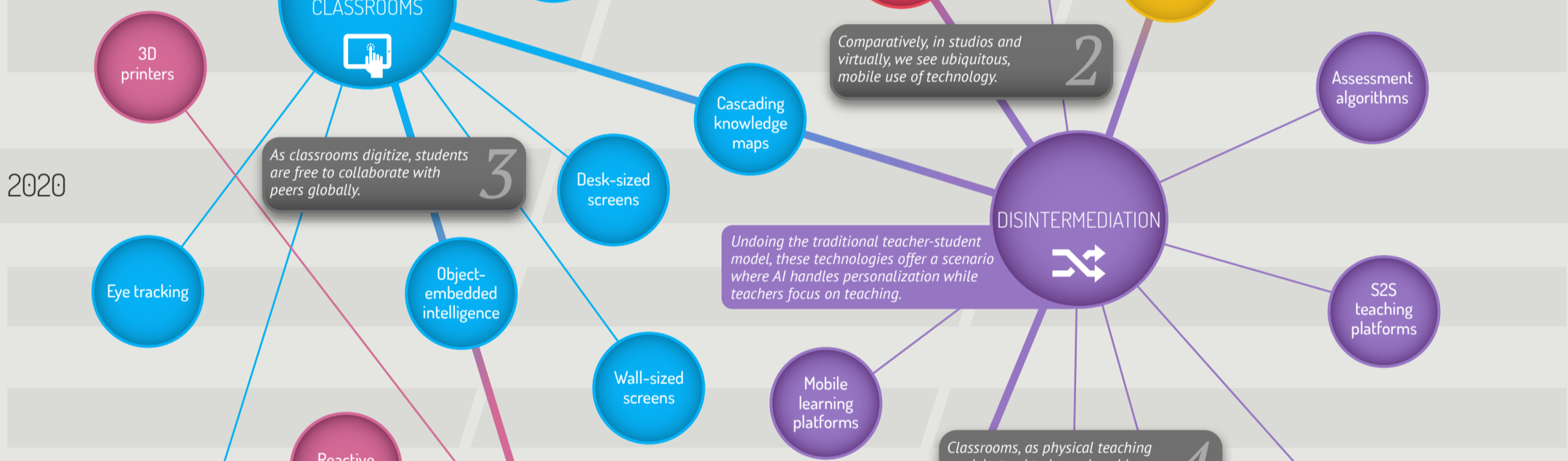
Virtual
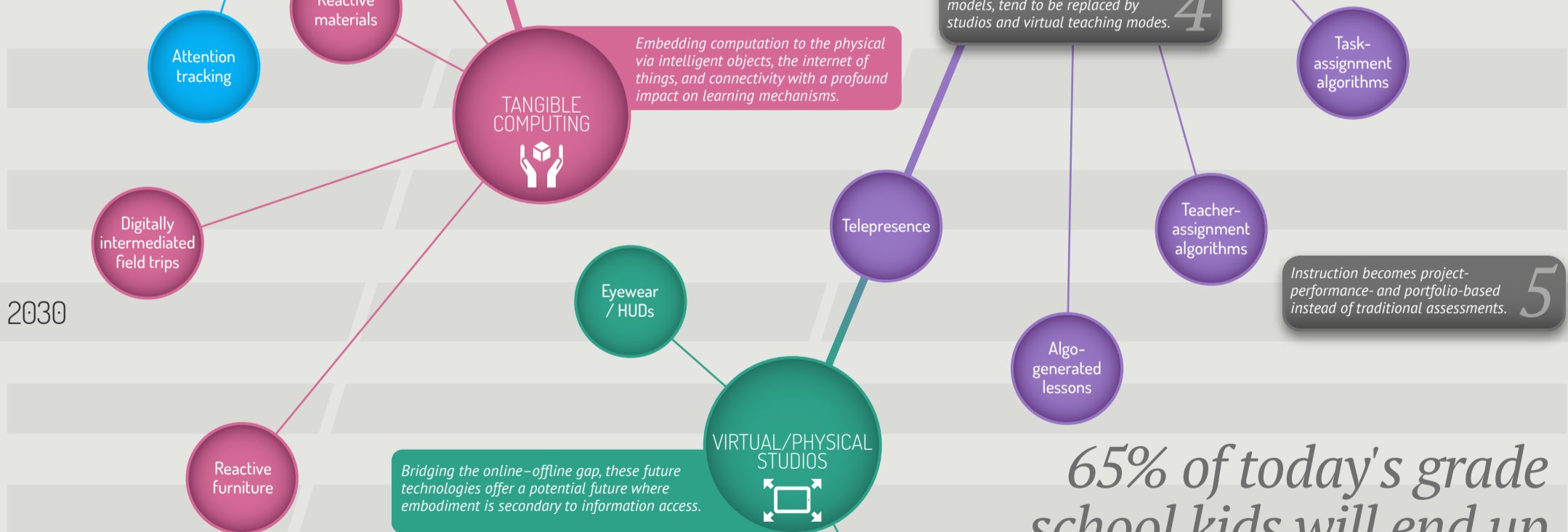*Disembodied environments, where learning, discussion and assessment happen regardless of physicality or geography.*
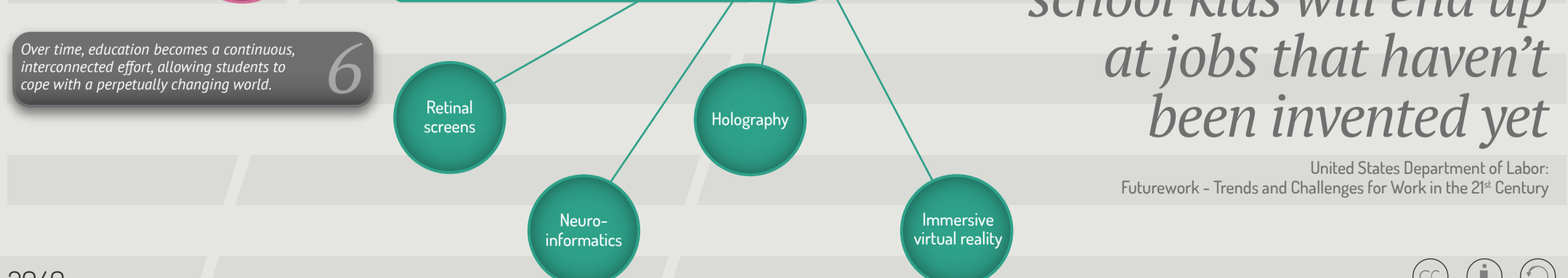
2012

2020

2030

2040

Nodes:
- Interactive whiteboards
- Data projectors
- Educational games
- Electronic paper screens
- Achievements & badges
- Online school communities
- Video lessons
- Education app stores
- Open courseware
- Educational programming tools
- Tablets
- Student-developed apps
- GAMIFICATION
- OPENING OF INFORMATION
- Digitization of books
- Formal communication #backchannels
- Portable academic histories
- Self-paced learning
- Student-designed learning mechanics
- Flipped classrooms
- Inter-school teaching platforms
- DIGITIZED CLASSROOMS
- Classroom performance dashboards
- 3D printers
- Cascading knowledge maps
- Assessment algorithms
- DISINTERMEDIATION
- Desk-sized screens
- Eye tracking
- Object-embedded intelligence
- Wall-sized screens
- S2S teaching platforms
- Mobile learning platforms
- Attention tracking
- Reactive materials
- TANGIBLE COMPUTING
- Task-assignment algorithms
- Digitally intermediated field trips
- Telepresence
- Teacher-assignment algorithms
- Eyewear / HUDs
- Algo-generated lessons
- Reactive furniture
- VIRTUAL/PHYSICAL STUDIOS
- Retinal screens
- Holography
- Neuro-informatics
- Immersive virtual reality

Annotation boxes:

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

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

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

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

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

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

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

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

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

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

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

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

United States Department of Labor:
Futurework – Trends and Challenges for Work in the 21st Century