Empowering Generation α

Future-oriented learning in virtual worlds
The Golden Circle

WHY

WHAT

HOW

Picture: Simon Sinek | by Lance Cpl. Brendan Mullin | Public Domain via Wikimedia Commons
Digital Transformation

› work & daily lives have changed
› cultural change
› exponential future
School in the 21st century
School in the 19th century
Business world
World of Gen Z &
Gen α
Daily confirmed new cases (7-day moving average)
Outbreak evolution for the current 10 most affected countries

Chart: https://www.abc.net.au | Image: Pixabay | Video: TikTok
It’s all about learning in the 21\textsuperscript{st} century!

Society ↔ education: then ↔ now

**Then: Teaching**

Industrial Age
- Mobility, printing …
- New knowledge needed to be acquired
- Need for compliant workers > hierarchy, control
- „production line“ education
- teacher-centered instruction
- All about facts
- Learning outcome

**Now: Future-oriented learning**

Digital Age (not just about technology)
- complexity / chaos*
- New knowledge needs to be constructed
- need for flexible & creative people > community
- Personal development & success
- Learners take responsibility for learning
- Teachers help and accompany
- Learning process

**Goal: understanding & shaping the future**
It’s all about learning in the 21st century!

Society ↔ education: then ↔ now

Goal: understanding & shaping the future
It’s all about learning in the 21st century!

Society ↔ education: then ↔ now

Goal: understanding & shaping the future
Deep learning

› Content & knowledge

› Transfer & skills / competencies
4Cs / 6Cs of Deep Learning

› Communication
› Collaboration
› Creativity
› Critical Thinking
› Character
› Citizenship
OECD Education 2030 Framework (2018)

The OECD Learning Framework 2030

Knowledge
- Disciplinary
  - Interdisciplinary
  - Epistemic
  - Procedural

Skills
- Cognitive & meta-cognitive
- Social & emotional
- Physical & practical

Attitudes and Values
- Personal
- Local
- Societal
- Global

Well-Being 2030
- Individual & Societal

Anticipation
- Creating
- Taking

Responsibility
- New Value
- Action

Reconciling Tensions & Dilemmas
- Students

Image: OECD | Global Competency For an Inclusive World | Link | Education 2030 Position Paper | Link
Approaches for building a learning partnership

- Extended Reality
- Game-based Learning
- Artificial Intelligence
- Design Thinking
- Futures Thinking
- Sustainable Development
- Virtual Worlds
- Metaverse?

Image: Pikist
### XR: Extended Reality

**AR: Augmented Reality**
- Virtual image superimposed on user’s view of the real world
- No immersion
- Physical world + virtual elements
- **Limited interaction**, usually by touching a screen
- **→ Visualization**

**MR: Mixed Reality**
- Virtual image superimposed on user’s view of the real world
- No immersion
- Physical world + virtual elements
- **Greater interactivity**
- **→ Added functionality through haptic interaction**

**VR: Virtual Reality**
- Computer-generated reality
- Immersion (with/without VR goggles)
- **Interaction***(keyboard, controllers, hands)*
- Feeling of presence and agency in the virtual world
- *Can vary from looking at something to manipulation, creating and getting feedback*

<table>
<thead>
<tr>
<th>Windows Mixed Reality</th>
<th>Merge Cube</th>
<th>Meta Quest</th>
<th>Handtracking</th>
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<tbody>
<tr>
<td>Gestures, a controller</td>
<td>An object with virtual elements</td>
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Game-based Learning

› “real” (digital) games are integrated into the learning process

› Qualities of good games
  › [narrative]
  › goals | milestones | challenges
  › rules
  › feedback system | learning from mistakes
  › self-determination

› personal reward for mastering a challenge

› competencies are more important than knowledge

Picture: Screenshot | Minetest: Robinson Crusoe’s Island (LMZ BW)
The Super Mario Effect - Tricking Your Brain into Learning More | Mark Rober | TEDxPenn (2018)
Das Hook-Modell für Fortnite

1. Trigger
2. Reward
3. Hook & Flow
4. Investment
5. Action
Das Hook-Modell für Fortnite

Trigger → Reward
Hook & Flow
Investment → Action

Image: "Das Hook-Modell für Fortnite" Fabian Karg | CC BY-SA-NC 4.0 | Icons: Noun Project
Experiences

cognitive

personal

social

sensomotoric

digital media
Artificial Intelligence

friend?
Artificial Intelligence

› friend?

› foe?
Artificial Intelligence

› friend?
› foe?
› (creative) assistant!
The Metaverse?

Now, let's shift to the how.
Projects

Grenzenlos: 360° Europa

› 360° music video
Projects

Experiencing literature: Fatou Rama

› read
› write diary & record
› build
› feedback & questions for author
› getting in touch with the author > reading & music

→ Experience: virtual x digital x physical worlds
Projects

Immersive Museum: Heroes

› Presentations on the past, the present & the future
Projects

Interactive Maps

› Ukraine
Projects

Building a sustainable world

› Sustainability x GBL
› Embedded in a narrative
› Authentic use of a foreign language
Projects

This war of mine

› Different approaches
  › Trigger for research
  › Basis for analysis
  › Basis for creative gaming
  › Basis for game design
Projects

The Sims 4

- Perspectives
- source of imagination
- basis for analysis
- Instagram challenge
  - gender diversity
  - sexual orientation
Projects

Un autre monde / Eine andere Welt

› Global simulation
› Virtual exchange 2012-2016
SERASUM: For a better tomorrow

- Part of Erasmus+ project EXCALIBUR
- Future-oriented learning
- Game-based learning adventure
- Languages x STEM x Europe
- Learners become sustainable development agents
- Stay tuned!
Getting started

Mindset

Skillset

Toolset
PetiteProf79

› Blog
› Future-oriented learning
› Ideas
› ...

Link
Journals

› On. Lernen in der digitalen Welt (Friedrich Verlag)
› Weiterbildung (Ziel-Verlag)
› ExcitingEdu (Klett MINT)
Podcasts

› Game-based
Storytelling

Storytelling: Narrative and global audiences

4.7 713 ratings | 98%

Associate Professor Simon McIntyre +4 more instructors

Enroll for Free
Starts Sep 4

90,116 already enrolled
Game-based Learning

› Creative Gaming
› Wiki
› Training & Guidance

Image: Screenshot | Project: BLOCKALOT
Educators in VR

Image: Screenshot from Round Table on Game-based Learning | Educators in VR
Educators in Second Life, OpenSim & other virtual worlds
Be brave...
... and boldly go where no (wo)man has gone before
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www.petiteprof79.eu

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