

## Current and Emerging Educational Realities - Shaping the Digital Transformation?

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**Abstract:** This paper gives an overview of the keynote and is structured in three parts: 1) What are current educational realities due to the COVID crises? 2) What are emerging trends and upcoming educational realities due to advanced technologies such as Artificial Intelligence (AI) and robotics? 3) How to shape digital transformation in educational institutions in order to exploit the potential of advanced technologies for desirable educational realities?

**Keywords:** Augmentation, Augmentation Strategies, Personalized AI-enabled learning, Learning Analytics, Immersive Learning, Conversational Learning


### 1 What are *current educational realities* due to the COVID crises?

In contrast to experiences that are planned from the beginning and designed to be online, emergency remote teaching is a temporary shift of instructional delivery to an alternate delivery mode due to crisis circumstances. The primary objective in these circumstances is not to re-create a robust educational ecosystem but rather to provide temporary access to instruction and instructional supports in a manner that is quick to set up and is reliably available during an emergency or crisis. The drastic shift towards emergency remote teaching might lead to the risk that the technology domain (focusing on operational information and communication technologies [ICT] skills) has gained strong momentum in schools as teachers receive tons of guidelines and technical advice. Students and teachers might be in different educational realities

### 2 What are *emerging trends and upcoming educational realities*?

To some extent, most of the students and teachers are already using advanced technologies, such as AI in their daily lives. According to Wahlster [Wa17] we distinguish first and second wave of digitalization. In the first wave of digitization, the focus is on ensuring that all relevant data is machine-readable and can therefore be digitally processed. The second wave of digitization is characterized by the understanding of digitally available data. It therefore outstrips the results of the first world, but unfolds a

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much greater power of innovation, as it enables disruptive business models in a platform economy of self-learning smart services. Further advanced technologies such as robotics and immersive technologies could have further potential for educational purposes. Three trends seem to be emerging for educational realities:

- a) *Personalization*: AI-empowered adaptive learning support systems, personalized learning based on learning analytics in digital ecosystems [Se19];
- b) *Immersion*: Learning with immersive technologies such as Augmented Reality (AR) and Virtual Reality (VR) and learning in mixed realities,
- c) *Conversational Learning*: chatbots and social robots as new forms of human-computer interaction

### **3 How to shape *digital transformation* in educational institutions in order to exploit the potential of advanced technologies?**

There is a certain risk that the next wave will overrun schools even more than the first wave of digitalization. The danger is that investments made today in certain digital skills will be outdated in five years of time. New human-machine interactions raise new fundamental questions that cannot yet be answered comprehensively by teacher education and professional development of teachers. Therefore, it might be useful to better understand and further investigate the concept of augmented work and augmentation strategies for the teaching profession in order to identify teachers' technology-relevant knowledge, skills and attitudes [SJS20]. Drawing on Davenport and Kirby [DK16], five augmentation strategies may be particularly relevant for the teaching profession in order to manage AI transformation in educational institutions [SJS20].

## **Bibliography**

- [DK16] Davenport, T. H.; Kirby, J.: Just how smart are smart machines? In MIT Sloan Management Review, 2016, 57; pp. 21–25.
- [Se19] Seufert, S. et al.: A Pedagogical Perspective on Big Data and Learning Analytics: A Conceptual Model for Digital Learning Support. In Technology, Knowledge and Learning, 2019, 24; pp. 599–619.
- [SJS20] Sabine Seufert; Josef Guggemos; Stefan Sonderegger: Digitale Transformation der Hochschullehre: Augmentationsstrategien für den Einsatz von Data Analytics und Künstlicher Intelligenz, 2020.
- [Wa17] Wahlster, W.: Künstliche Intelligenz versus menschliche Intelligenz: Wie lernen, verstehen und denken Computer?, Mainz, 2017.