

SocSys 2022 Congress

International Conference on Technical Advances and Human Consequences

SOCIETY TRENDS 2022

The Digital Transformation of Education

Authors: Viktorija Babica, Deniss Sceulovs

Presenter: Dr.oec. Deniss Sceulovs

Professor at Riga Technical university, Riga, Latvia

Deniss.sceulovs@rtu.lv

Faculty of Engineering Economics and Management, Riga Technical University, Latvia

Nice, France, July 25-28, 2022





Dr.oec. Deniss Ščeulovs

deniss.sceulovs@rtu.lv

Professional Experience

- Director of Institute of Business Engineering and Management
- Professor at Riga Technical university
- Senior researcher at Institute of Business Engineering and Management
- Director of LEGO® SERIOUS PLAY® Lab
- Director of Design Lab
- LEGO® SERIOUS PLAY® Certified Facilitator

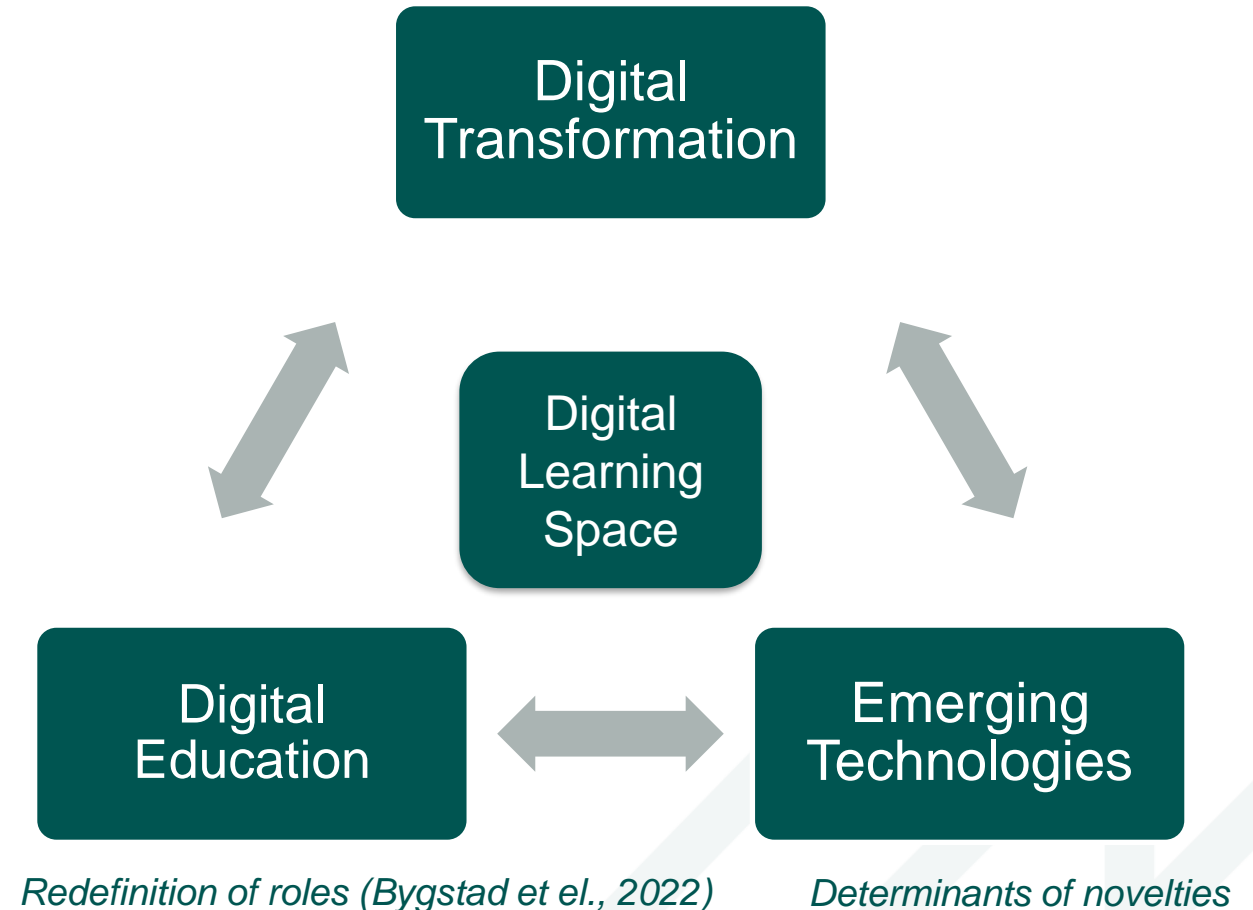
Publications & Activities

- The Influence of Non-Product-Related Attributes on Media Brands' Consumption (SCOPUS), 2022
- Innovations in the management of e-commerce: analysis of customer interactions during the covid-19 pandemic (SCOPUS), 2021
- Determinants of energy efficient innovation: A systematic literature review (SCOPUS), 2021
- Identification and creation of business opportunities as the characteristic of the entrepreneurial mindset (SCOPUS), 2020
- Business opportunities unclaimed: Digital disruption of business models (SCOPUS), 2020
- Current Research Trends on Interrelationships of Eco-Innovation and Internationalisation: A Bibliometric Analysis (WoS), 2020

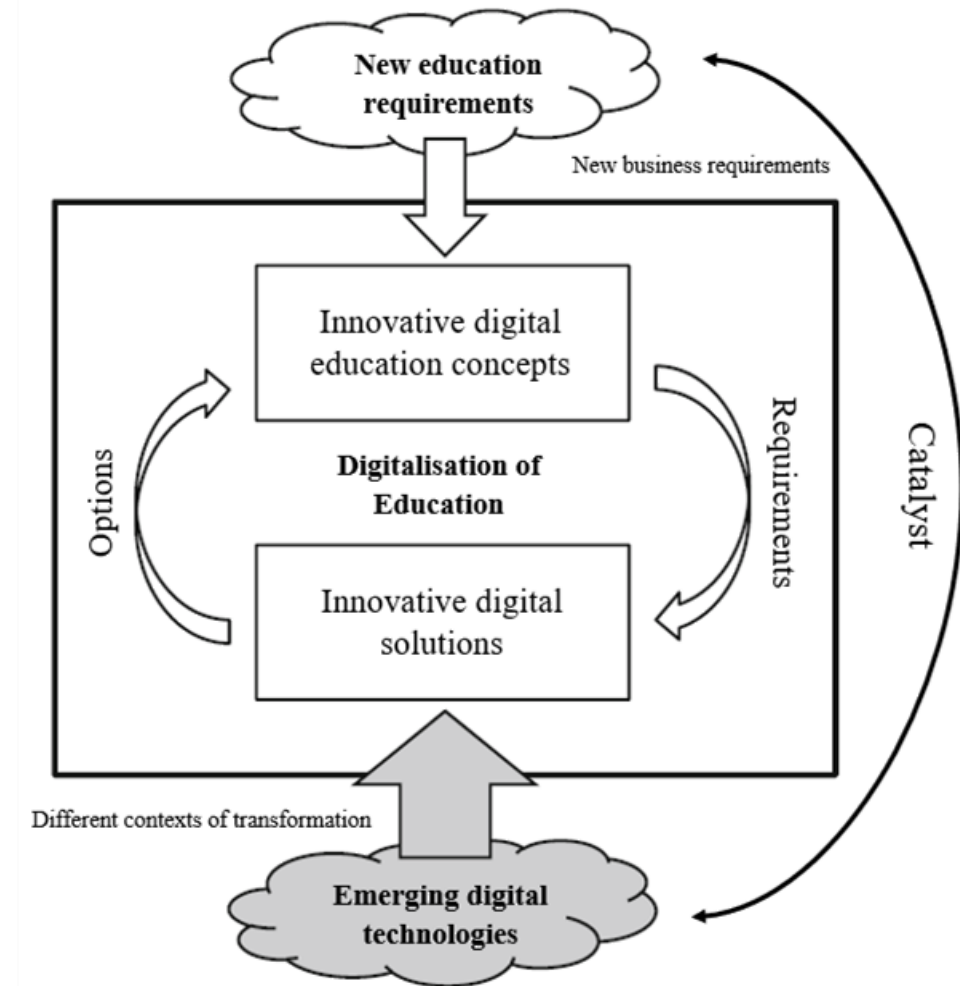
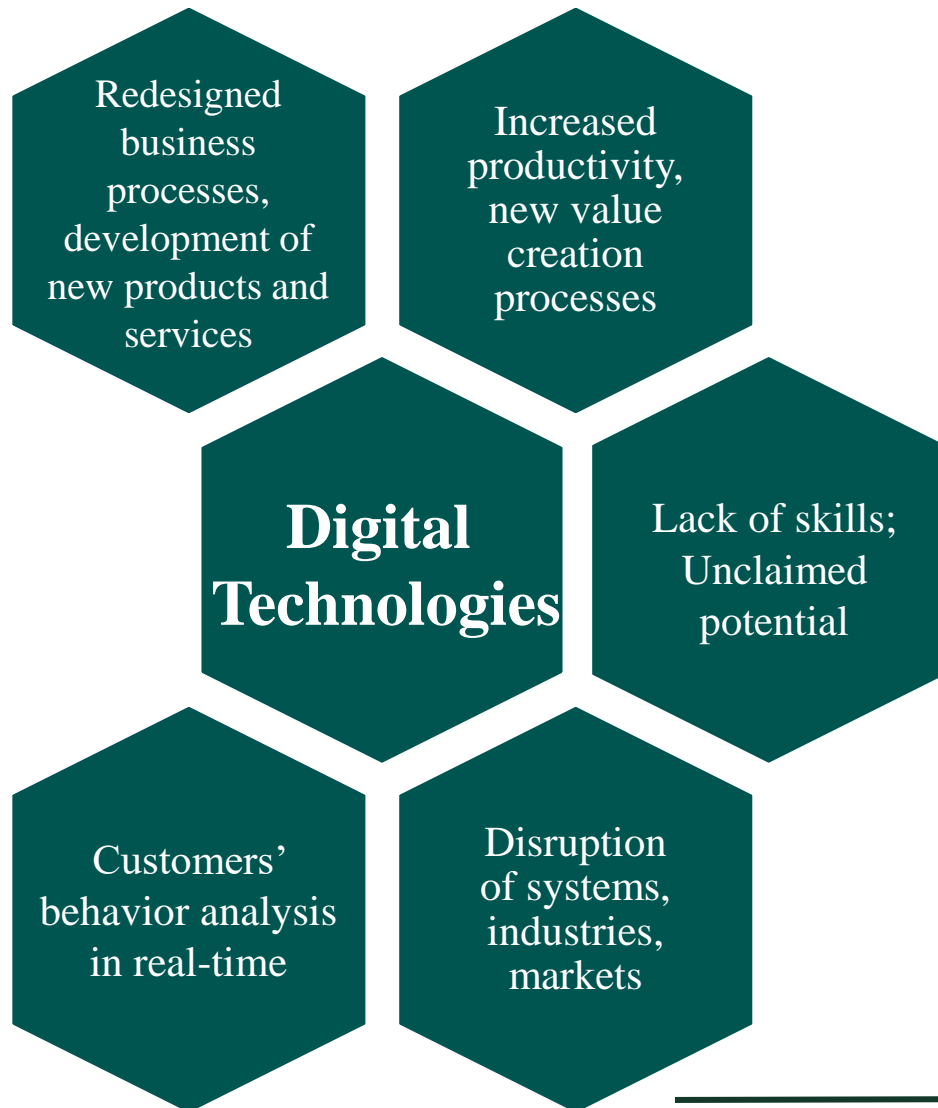
From a *place* to the *digital space*..

- How do educational institutions embrace the potential of emerging technological innovations...
 - How the digital transformation wave has affected the process of higher education; what challenges have been faced..
- Consolidation and expansion of technology is an essential and constant element of higher education, but digital education is not a novelty...
- A significant increase of interest regarding the digital technology application in higher education in recent years (Rodriguez-Abitia, Bribiesca-Correa, 2021)

Companies and organizations play essential role in educational trends



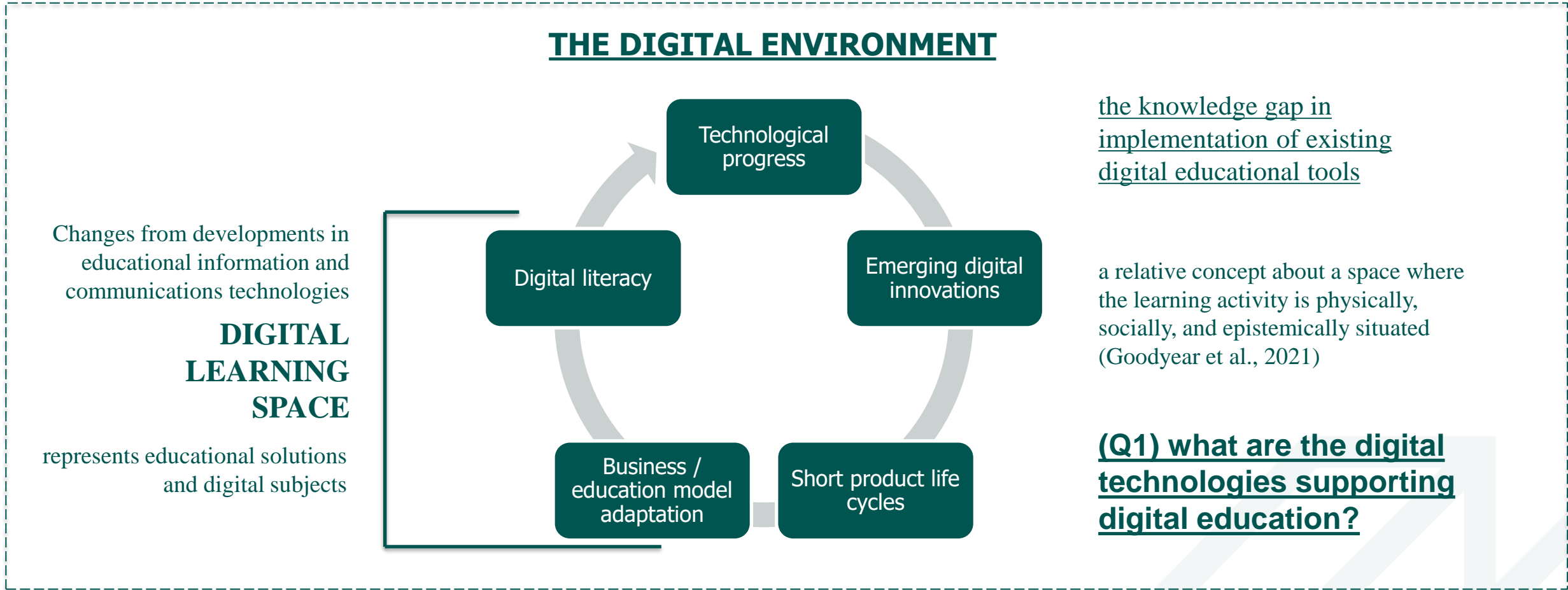
Digital Transformation and Digitalisation of Education



Technology-push-pull model of digitalization of education (adapted from Wiesböck and Hess 2020)

“a process that aims to improve an entity by triggering significant changes to its properties through combinations of information, computing, communication, and connectivity technologies” (Vial, 2019)

What?



The purpose of the present study is to examine and analyse the concept of digital learning space.

The Technologies Used Within Digital Learning Space

Technology	Description	Impact
Educational Data Mining (EDM) Machine Learning	Analytical tool, which requires predictive data mining tool and machine learning technique. EDM provides a better understanding of students' performance and enrolment data. Classification, clustering, categorization, and visualization of data support decision-making.	Privacy, fairness, and bias issues. EDM allows to classify students' learning behaviour and predict students' performance, e.g. dropouts. EDM techniques require comprehensive algorithms to support educators and students.
Internet of Things (IoT)	Internet-based structure for remote locating, sensing, and operating the constituents with real-time data/information flows between them. Collection of information, automating transactions, enabling, maintaining, and servicing.	Real-time student performance; monitoring of students in the different aspects of the learning process; flexible access to courses; supports cooperation between students, the business environment and between universities. Privacy issues: identification of features unknown to the user, localization and tracking, profiling, making private information public and linking separate information that the user does not like to be linked. Human-machine interfacing. Example of application: remote labs.
Augmented Reality (AR)	AR creates an add-on and interactive experience of a real-world environment through computer-generated displays, thereby creating more interactive, vivid, and richer experiences for consumers	AR, VR and MR ensure higher student engagement and support the educational process with gamified learning. The technology provides a better understanding of the studied concepts via simulation. The technology types differ in costs and required equipment. Provides the possibility of enabling learning content in 3D perspectives; promoting ubiquitous, collaborative and situated learning; providing a sense of presence, immediacy and immersion of students; visualizing the invisible; and uniting formal and informal learning (Sáez-López et al., 2020).
Virtual Reality (VR)	Entire environment simulation	
Mixed Reality (MR)	Combination of the real and virtual worlds to produce new visual environments where physical and digital elements co-exist and interact in real time	
Artificial Intelligence (AI)	Computer programs that understands user queries and complete a limited set of tasks for the user (e.g., Siri, Cortana, Alexa).	Selecting, advising, and customizing, giving feedback and recommending additional learning material. Enhanced decision making.
Cloud Computing	Video-conferencing tools; Collaborative platforms; Learning dashboards; Massive Open Online Courses (MOOCs); Streaming conferences; Instant messaging tools etc.	

Further Research & Discussion..

- Implementing digital technologies that align with the higher institution's strategy, culture, available technology, and structure to meet the digital expectation of students, professors and administration.
 - *Implementing technology to the existing or changing the existing by the emerging technology?*
- Methods of teaching with and through technologies: is the hybrid system suitable for all education programs?
- Adaptation to the digital learning space: complications due to the inherent physical distance
- Comprehensive and fair learning analytics (automated) and data protection
- Elimination of challenges related to the lack of digital skills

SocSys 2022 Congress

International Conference on Technical Advances and Human Consequences

SOCIETY TRENDS 2022

The Digital Transformation of Education

Authors: Viktorija Babica, Deniss Sceulovs

Presenter: Dr.oec. Deniss Sceulovs

Professor at Riga Technical university, Riga, Latvia

Deniss.sceulovs@rtu.lv

Faculty of Engineering Economics and Management, Riga Technical University, Latvia

Nice, France, July 25-28, 2022

