

Module 1: DIGITAL EDUCATION DISRUPTION – THE ROLE OF ONLINE LEARNING AND DIGITAL TECHNOLOGIES



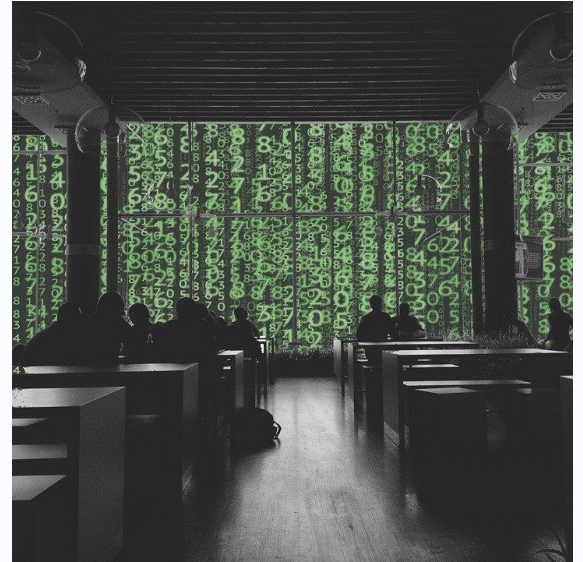
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Module 1: DIGITAL EDUCATION DISRUPTION – THE ROLE OF ONLINE LEARNING AND DIGITAL TECHNOLOGIES

1. The use of digital technologies in online teaching and learning
2. The role of online teaching and learning in a globalized digital economy
3. Digital disruption in higher education



Unit 1: The Role of Online Learning and Digital Technologies

Module 1: Digital Education Disruption – The Role of Online Learning and Digital Technologies

- 1. The use of digital technologies in online teaching and learning**
2. The role of online teaching and learning in a globalized digital economy
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The objectives of this Unit are:

- Understanding how digital technologies are enabling new educational opportunities;
- Understanding specificities of the digital online education ecosystem;
- Identifying specific digital technologies and new models of teaching and learning used for online education;
- Highlighting the benefits of using new digital technologies in online teaching and learning.



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1.1

The emergence of new digital technologies

1.2

New digital technologies in online education

1.2.1.

Extended Reality (XR)

1.2.2.

Artificial intelligence (AI)

1.2.3.

Gamification

1.3

Benefits of using new digital technologies in online teaching and learning

1.1. The emergence of new digital technologies

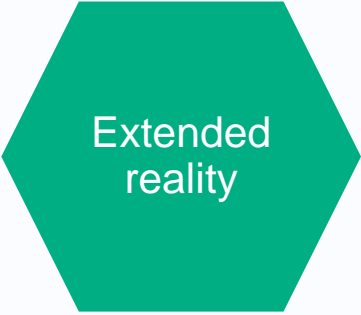
Smart (online) learning environments

Smart learning environments (SLE) are physical environments that are enriched with digital, context-aware, and adaptive devices to promote better and faster learning which can make learning environments more effective, efficient, and engaging on a large and sustainable scale.

In online learning physical classroom is totally replaced by new digital technologies.



1.2. New digital technologies in education



Extended
reality



Artificial
intelligence



Gamification

1.3. Benefits of using new technologies in online education

- Increase learning efficacy;
- Makes distance learning more accessible;
- Improves engagement;
- Improves knowledge retention;
- Encourages collaboration;
- Allow access information at any time;
- Allow personalised learning and personalised study;
- Tracked progress;
- Fewer emissions.

Key takeaways

- The emergence of new digital technologies in education marked the beginning of transition from traditional teaching and learning to technology-based learning.
- Online learning is a new social process that, due to the emergence of new digital technologies, is beginning to act as a complete substitute for both distance learning and the traditional face-to-face class.
- New digital technologies such as Virtual Reality, Augmented Reality, Artificial Intelligence, Gamification, Blockchain, 5G, Machine Learning and Deep Learning offer new potential for online education and fuel more radical transformations.
- New digital technologies brings a lot of benefits for education making it accessible to anyone with internet access.



Reflection

Digital technologies in online education

Think about your own university.

- What are the main areas of digital transformation?
- What digital technologies are available/used?
- What good practices do you know about?

Write some impressions.



Unit 2 : The role of online teaching and learning in a globalized digital economy

Module 1: Digital Education Disruption – The Role of Online Learning and Digital Technologies

1. The use of digital technologies in online teaching and learning
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The objectives of this Unit are:

- Understanding how the online teaching-learning process is implemented in HEIs;
- Understanding specificities of the online learning environments;
- Discussing the online learning and teaching methods;
- Identifying digital skills and competences required by digital transformation.



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1.1

Online learning environments

1.2

Implementation of online teaching-learning in HEIs

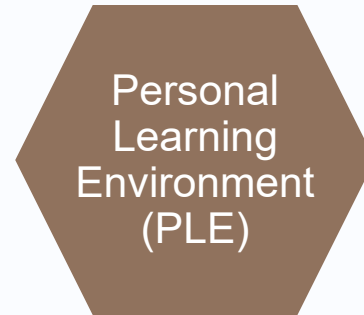
1.3

Online learning and teaching methods

1.4

Digital skills and competences for the digital transformation

1.1. Online learning environments



1.2. Implementation of online teaching-learning in HEIs



Asynchronous
Online Courses




Synchronous
Online Courses



Hybrid Courses

- 1.1** Online learning environments
- 1.2** Implementation of online teaching-learning in HEIs
- 1.3** Online learning and teaching methods
- 1.4** Digital skills and competences for the digital transformation


1.3. Online learning and teaching methods



Live and
streamed video



Lecture capture



Courses using
learning
management
systems

1.4. Digital skills and competences for the digital transformation

Both rapid digital transformations and the Covid-19 pandemic brought important threats for the economy and the EU labour markets and impacted millions of people that need to acquire new skills or upskill to maintain their jobs and remain actively integrated on the labour market.



Key takeaways

- The emergence of new digital technologies in education accelerated the online learning. The online learning industry rocketed in the last years.
- Implementation of online teaching-learning in HEIs became more and more frequent beginning to act as a complete substitute for both distance learning and the traditional face-to-face class.
- Online learning and teaching methods diversified bringing a lot of benefits for education and making it accessible to anyone with internet access.
- In this context, digital skills and competences became critical for a success on the labor market.



Reflection

Have the roles changed at your university?

Think about your own university.

- Which were the main online learning/teaching activities 10 years ago?
- And what about now? Have the online learning/teaching become the “new normal”?
- How will technology impact the learning and teaching process in the future?



Unit 3: Digital disruption in higher education

Module 1: Digital Education Disruption – The Role of Online Learning and Digital Technologies

1. The use of digital technologies in online teaching and learning
2. The role of online teaching and learning in a globalized digital economy
3. Digital disruption in higher education



The objectives of this Unit are:

- To get familiar with digital education disruption
- To get acquainted with specific ways to overcome digital education disruption
- To acknowledge specific ways of managing the digital disruption in higher education institutions (HEIs)
- To understand the role of disruptive education technologies in higher education
- To understand how digital technologies are enabling new educational opportunities
- To identify key characteristics of disruptive innovations



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1.1

What is digital education disruption?

1.2

Disruptive education technologies

1.3

Managing the disruption of higher education

1.4

Key characteristics of disruptive innovations

1.5

Enabler of disruptive innovations

1.1. What is digital education disruption?

The general notion of disruption commonly frames digital disruption as a type of digital technology-induced environmental turbulence capable of producing system upheaval.

As specific manifestations of digital disruption, digitization and digital platforms have generally been highlighted as processes leading to dissolution of core industry conditions for upward capture of value (El Sawy et al. 2010; Karimi and Walter 2015; Tan et al. 2015; Berghaus and Back 2016; Rauch et al. 2016).



1.2. Disruptive education technologies

Notable disruptive education technologies encompass:

- First generation of massive open online courses – **cMOOCs**
- The second generation of MOOCs – **xMOOCs**
- New model of MOOCs that does not require sophisticated technological solutions and recovers the initial disruptive sense of MOOCs – **ahMOOC** (García-Peñalvo et al. 2018)
- **Virtual Reality (VR)** - offers a personalized learning approach and access to the Internet and brings an excellent experience of complete immersion in the educational process
- **Augmented Reality (AR)** - another disruptive technology less adopted in education but with an enormous potential (e.g. Google Glass)
- **Artificial Intelligence (AI)** - embeds algorithms that provide a personalized learning experience for students.
- **Collaboration Platforms** - videos, presentations and forums integrate education materials from different sources in different formats. This makes learning easier and social.



1.3. Managing the disruption of higher education

Digital Integration

Ensuring data integrity, security and system interoperability across multiple platforms and applications

Student-Centric Higher Education

Creating a student friendly services ecosystem to support the entire student life from prospecting to enrollment, learning, job placement, alumni engagement and continuing education

Student Retention and Completion

Developing capabilities and systems to incorporate artificial intelligence into student services to provide personalized timely support

Improved Enrollment

Using technology, data, and analytics to develop an inclusive and financially sustainable enrollment strategy to serve more and new learners by personalizing recruitment, enrollment, and learning experiences

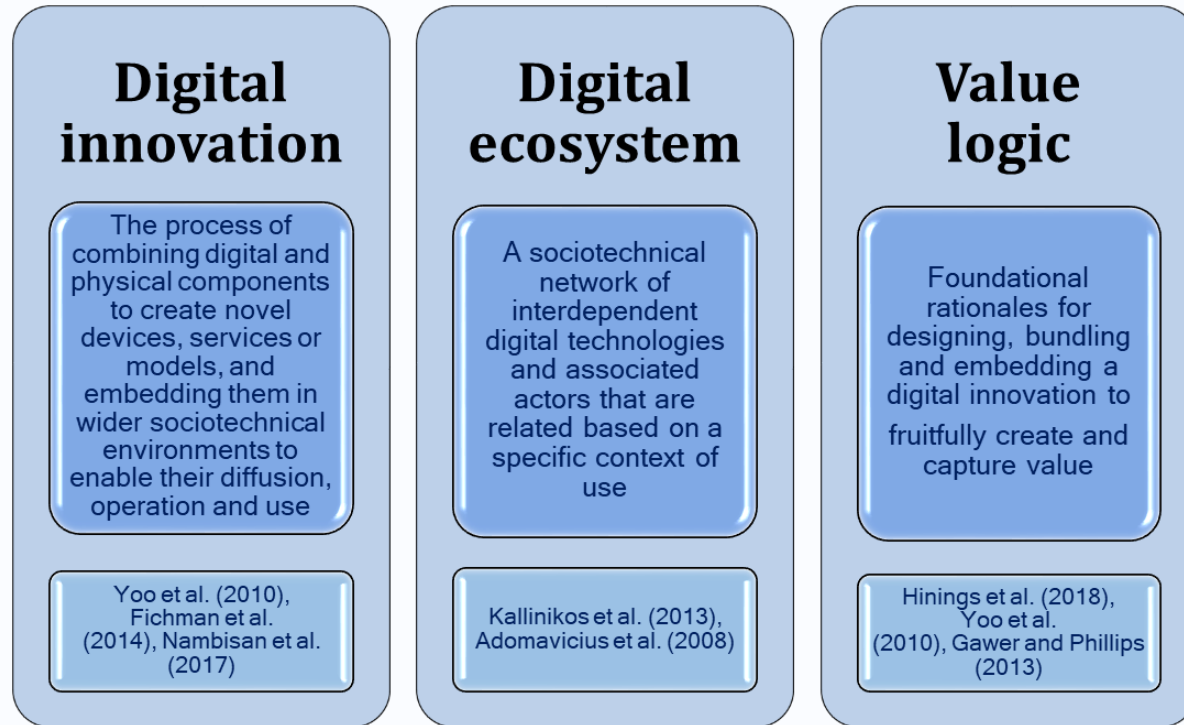
Administrative Simplification

Applying user-centered design, process improvement, and system reengineering to reduce redundant or unnecessary efforts and improve end-user experiences

Information Security Strategy

Developing a strategy aiming to cover for security threats and challenges

1.4. Key characteristics of disruptive innovations



1.5. Enabler of disruptive innovations

Disruptive technological innovations in education

- Google as a platform model (Classroom, Hangouts Meet, Jamboard, Forms, Ads, Music, YouTube, Search, Chromebooks, Chrome OS, etc.)
- Ease of publishing (e.g., blogs, social media, podcasting) to promote conversation and thinking around what's possible in education
- Video Streaming/Flipped Classroom/eLearning Trends
- Zoom, Skype, Webinars, live streaming - one of the most visible and common form of technological innovation in higher education
- Open curriculum (e.g. MIT's [OpenCourseWare](#) – MOOCs)
- Digital textbooks
- 3D Printing
- Use of data analytics



Key takeaways

- Digital disruption in higher education brings major transformations of the teaching and learning processes in universities through the use of modern technologies and innovations
- These allow HEIs to create new models with huge advantages for both educators and learners from taking the knowledge and expertise harbored in universities under the unique umbrella of digitalization and digital transformations.
- Higher education's prevailing digital educational models should be configured in line with the current educational needs of the population and the labor market
- Disruptive innovations reduce costs dramatically by providing simpler, less expensive teaching and learning solutions
- Despite the explosive growth of online learning, higher education has trapped many disruption-enabling technologies in complex settings, while disruptive technologies make higher education more affordable, accessible and effective



Reflection

How does your university manage digital education disruption?

Think about your own university

- What strategies are developed and implemented in order to cope with digital education disruption?
- How does your university embed technology within all aspects of its activities?
- How does your university enhance student's digital skills linked to various professions and tailored to the labour market needs?

Write down and share several best practices





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