

Unit 1 – Accessible and flexible educational contents

Module 3: NEW EDUCATIONAL OPPORTUNITIES CREATED BY DIGITAL TECHNOLOGIES AND BARRIERS TO GOING DIGITAL



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Unit 1: Accessible and flexible educational contents

Module 3: New Educational Opportunities Created by Digital Technologies and Barriers to Going Digital

The ESCALATE Module 3 is composed by 3 units, the first of which is delivered through this document.

1. **Accessible and flexible educational contents**
2. New software and apps to help learning providers to manage, plan, deliver and track the learning process
3. Barriers to going digital



The objectives of this Unit are:

- To understand how digital technologies are enabling new educational opportunities
- To interiorize how the roles of learners and teachers are changing
- To identify the new opportunities for learning



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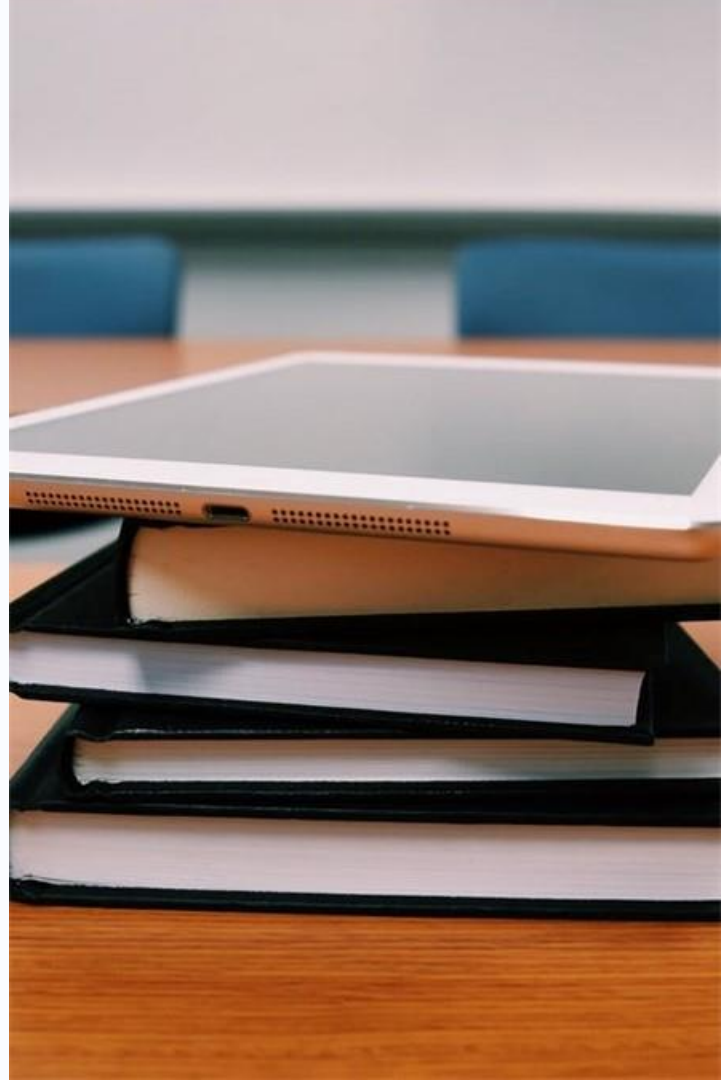
1.1. Massive amounts of information available

The textbook is no longer the main tool for teachers. Today, it is common to see how textbooks coexist or have been replaced by tablets and other electronic devices that teachers use as pedagogical tools.

This implies a change in the approach of class activity by the teachers, an improvement in the educator-learner interaction and a more adapted learning with tools for monitoring statistical data of the learning process.

As the years go by, the way we learn changes. From encyclopedia to Encarta to Wikipedia. Nowadays, there are massive amounts of information available and access to learning opportunities has never been so universal thanks to digitalization.

Different results are obtained from the use of the different formats by universities and other higher education institutions. For a search for information it may be easier to use tablets or computers, while for a more calm and concentrated reading the paper book could be more effective. The essential thing is that students are able to use any kind of tool and, hence, it is necessary to use each and every one of them.



1.1. Massive amounts of information available

It is not only about the new devices

The introduction of tablets or computers in classrooms must be accompanied by other elements, such as, for example, content adapted to these new tools, teacher training so that they can use them in an appropriate way and adequate connectivity to allow students access to the new tools.

The new digital media provide a considerably greater access to knowledge, greater ideological diversity, promoting creativity and open thinking in learners. In addition, it is possible to digitalize and store information in the same place, interaction through cloud storage platforms with which teacher and student share resources instantly, and simplification of school resources and supplies.



1.1. Massive amounts of information available

- Digitalization means that pedagogical contents can be made more accessible to students. Contents can be delivered through different means and lectures can be organized in a way that is more relevant for a faster-moving digital generation.
- Access to technology in classrooms helps bridge the digital divide and increases learning opportunities available to everyone.
- Digitalization allows students to personalize their learning and take it beyond the classroom. It can also help improve the academic performance of learners and their participation capacity.
- Multimedia and online resources (like YouTube) offer interesting and useful content that can easily be integrated into the classroom. More and more teachers are harnessing YouTube's full potential as an educational tool.
- The development of digitalization has increased the trend in gamification (the use of game mechanics and dynamics in non-playful areas), in order to enhance motivation and reinforce behavior to solve a problem.
- Virtual Reality opens a door to education to thousands of possible scenarios and experiences in which students take a leading role .

1.2. Change in expectations of learners

- The expectations of learners are rapidly changing.
- The previous generations' motivation to study was strongly based on sense of duty, however, younger generations are motivated by interest, emotions, and engagement. They are also less motivated by just monetary reasons, but by passion and purpose.
- In addition, young people are no longer satisfied with traditional lectures, they demand a more dynamic and engaged form of education, they need fast, flexible and affordable learning solutions.
- They are expecting more practical learning plans and experiences, as well as more experiential learning sessions.
- New learners are also demanding mentoring for personal and professional growth.
- Their objective is not only to obtain a degree but also to garner job-ready skills with the flexibility to study away from campus.



1.2. Change in expectations of learners

The millennial generation was born into a world of internet, social media and mobile technology. Many of these students have been all their lives using the latest devices, game consoles, high tech applications and even virtual and augmented reality. Students expect to have at University at least the same high-tech experience they get at home.

University leaders need to understand that it's the connection between digital engagement and student experience which leads to real change. It is not just about new technologies, learners must be engaged and involved.

Peer learning and collaboration, enabled by high-tech tools can help obtain the steady stream of information, insights and recommendations that the learners need to inform decisions and guide experiences.



1.3. Change in roles of teachers and learners

- Teachers used to be instructors but today, their role has evolved and they are becoming coordinators, facilitators, coaches, mediators and creators of learning opportunities.
- Educators are expected to know where to find the information, how to solve problems and what is important to learn.
- Teachers are asked to support students in their learning processes, they have to help them to be critical, to be open-minded, to check the quality of the sources.
- The educator is also required to improve teaching methods, to train him/herself and to acquire knowledge.
- Educators are increasingly collaborating with each other thanks to modern technology. They are sharing skills and learning from each other.
- The way teachers interact with students is changing as well.
- To carry out these new roles, a transformation is required.



Did you know...

That, according to the European Commission, greater efforts are needed to invest in the pedagogical training of academic staff, which is an area that has traditionally been less valued than research output. In particular, the status and quality of teaching in higher education needs to be improved. Teachers must also be well prepared and trained for being able to cater for students with diverse backgrounds, expectations and needs.

It is also necessary to improve the interaction between research and teaching ensuring that teaching is based on state-of-the art knowledge. Indeed, a public consultation by the Commission revealed concerns about the mismatch between what higher education institutions are currently delivering and the skills graduates need to succeed.

Responding to the demand for high-level skills society and in the economy remains a massive challenge for Europe's universities and colleges.



1.3. Change in roles of teachers and learners

New technologies

- Digitalization facilitates the creation of new teaching models as teachers can use more open means of communications and media to experiment and to disseminate their ideas.
- Educators no longer have to impart learning in a linear fashion, but can use new platforms as a guide, helping students access and consume information in a considered and meaningful manner.
- They can test the response to different content, so they can iterate to improve student outcomes.
- They can identify what individual learners want, leading to greater personalization.
- With the latest tech tools, they have new possibilities to explore, for example:
 - Video conferencing to bring students into classrooms.
 - Productivity applications to offer real-time feedback or set up collaborative sessions.
 - Multimedia and visual learning, or podcasts to bring topics alive.
 - Game-based learning to challenge students in a fun and competitive environment.
 - Virtual reality to create an immersive experience.

Good practice

Quality Pact for Teaching

Since 2011, the Bundesministerium für Bildung und Forschung (BMBF) has been supporting the improvement of study conditions and teaching quality at German universities with the program “Quality Pact for Teaching” (QPL) in cooperation with the Federal States.

The universities are supported in qualifying their staff for teaching, supervision and counselling. Further goals are to ensure and develop high-quality university teaching. A central field of action is the digitalization of teaching and the associated integration of electronic learning modules into the regular curriculum. In the period from 2011 to 2020, projects, measures and structures totalling 2 billion euro have been financed at the universities. From 2021 onwards the follow-up program "Innovation in higher education teaching" aims to create structures for permanent support for the further development of university teaching. The aim is to promote the exchange and networking of relevant actors as well as the transfer of knowledge for successful teaching and new results and findings. In order to provide continuous incentives to design teaching innovations, the development of innovative study and teaching formats is to be supported by appropriate funding.



1.3. Change in roles of teachers and learners

News skills

Digitalization is transforming the skills needed by Europe's working population to successfully engage in the world of work in a globalized modern economy. Jobs are changing and the young people entering the labour market need to be prepared for transitions in an uncertain future.

Educators today have the responsibility to guide the development of 21st century skills in their students. They have to help them develop skills such as critical thinking, problem solving and lateral thinking. Educators must channel innovation and creativity in the classroom. And they must encourage adaptability and resilience, to help students navigate disruption and change.



Reflection

Have the roles changed at your university?

- Think about your own university...
- What were the learners' expectations 10 years ago? And the role of the teachers?
- And what about now? Have the expectations and roles changed some how?
- Write down the differences.



1.4. Trends in education

- Education is being offered a wide new range of new possibilities and tools.
- Smart technology co-evolves rapidly with new learning approaches.
- Today, there are many technological tools and resources, which, if harnessed properly in the world of higher education, can have an enormous impact on the learning process of learners, making it more practical, appealing and efficient.
- It is crucial to integrate technology in the classroom and to improve the quality and effectiveness of educational process.
- Learning becomes increasingly blended or hybrid which means that Face-To-Face and Peer-To- Peer instruction is often combined with online learning environments.



1.4. Trends in education

Online learning or e-learning

- Online education or e-learning is a student-led model that allows the learner to follow his/her own pace and adequately grasp the material and succeed in the learning process.
- Accessibility, flexibility, ubiquity, quality and self-management are some of the advantages.
- Blended learning combines face-to-face classes with online learning.
- Online learning platforms can personalize the learning of the individuals. If the learner encounters a problem in the learning process, the system suggests lessons to help the learner get over it.

Mobile Learning or M-learning

- Mobile learning or M-learning, is a new way to access learning content using personal electronic devices such as smartphones.
- Contents in M-learning can include short videos, small documents, short lessons, etc.
- M-learning enables learners to take their learning materials with them.
- It's also possible to use mobile devices for a blended learning approach. Combining deeper training sessions with short lessons through M-learning makes the learning process more efficient.

1.4. Trends in education

Video-based Learning

- Video-based learning is gaining popularity because it suits learners with any learning style preferences and include audio material (listening), text (reading), images (watching), and even kinaesthetic elements (practical exercises and video pause/repeat).
- Video content is more engaging and people are more likely to remember videos, allowing for the learner to engage more wholly.
- Learners can process information faster and more effectively (the human brain processes videos 60,000 times faster than text) and they can access these resources anywhere, at any time.
- Video-based learning is quite likely to dominate online education (as well as many types of offline education).

Game-based learning

- Learning through game-based learning and games can significantly enhance good quality and effectiveness of education.
- Games are now being recognised as having great potential to have a positive impact on students' learning experience.
- Game-based learning is increasingly gaining momentum in higher education.
- Game-based learning helps to keep learners motivated by making the learning content more attractive and giving immediate satisfaction during each lesson.
- Games are increasingly being integrated at a curriculum level in addition to being used as stand-alone activities.
- Serious games can be designed to achieve a particular curriculum need.

1.4. Trends in education

Personalized Learning

- Each year, there are new and updated applications and platforms for learners to experience a more customizable learning process.
- Big data analytics and artificial intelligence (AI) can be used to personalize the learning experiences even further.
- An individual approach means more motivation, engagement, less drop-outs, and more efficiency.
- AI-based learning systems can give teachers useful information about their students' learning styles, abilities, and progress, and provide suggestions for how to customize their teaching methods to students' individual needs.
- Learners can reach their full potential personalizing their learning process by choosing topics, exercises, difficulty level, schedule, etc. in applications they use for their studies.

Virtual Reality (VR)- based Learning

- Virtual Reality (VR) seems to be the natural next step for the evolution of education.
- VR education works by creating a virtual world (real or imagined) and allows users to see it and interact with it.
- The learner is immersed in what he/ she is learning and requires less cognitive load to process the information.
- VR is a good solution for highly technical training fields. Virtual laboratories for example allow students to understand how things work based on practical experience.
- VR can also help put educators and students together in the same room with digital representations of themselves and the teacher can guide students through their experiences.

1.4. Trends in education



E-learning Trends 2021 by New Leaf Technologies

https://www.youtube.com/watch?v=L08_j_bydZo

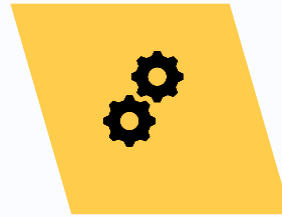
1.5. New learning methods

Examples of learning methods that can enhance the learning experience and help achieve better academic performance.



Flipped Classroom

Pedagogical approach in which the traditional elements of the lesson taught by the teacher are reversed – the primary educational materials are studied by the students at home and, then, worked on in the classroom.



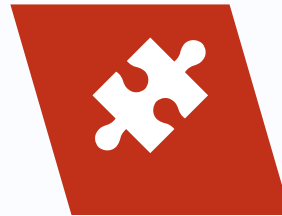
Design Thinking

Applies stems from industrial designers and their unique method to solve problems and satisfy the needs of their clients.



Cooperative Learning

The final goal is always group-oriented and will be achieved if each of the members successfully performs their tasks.



Project-Based Learning

Allows students to acquire key knowledge and skills through the development of projects that respond to real-life problems.

Good practice

EPALE - Electronic Platform for Adult Learning in Europe

We recommend you to register and regularly use EPALE, a European, multilingual, open membership community of adult learning professionals, including adult educators and trainers, guidance and support staff, researchers and academics, and policymakers.

It enables members to connect with and learn from colleagues across Europe, through its blog posts, forums, the Partner Search tool, complemented with physical gatherings.

EPALE provides a wealth of high-quality, accurate information relevant for adult learning practitioners. Over time, more and more of this content should be provided by members themselves.

<https://epale.ec.europa.eu/en>



Reflection

- Try to think about the last learning session you attended...
- Was it online or face-to-face?
- What kind of learning methods were there used?
- Did you find any of them innovative?
- Now think about how you would improve the training with the methods you have just learned about.



1.6. Access to Lifelong learning

- Education does not end at university.
- Digital techniques and technologies are constantly evolving and there is a concurrent need to up-skill people across their working lives.
- Lifelong learning is a new educational paradigm which consists of learning throughout our lives, and adapting our knowledge and skills to the market's needs at any time.
- Lifelong learning is one of the most important keys to the transformation process in order to sustainably secure individual work and employability - even beyond company boundaries.
- The Internet and other new technologies are often viewed as an important way to facilitate lifelong learning: the possibilities offered by lifelong learning in terms of training are multiple thanks to the breakthrough of educational innovations.
- Across the world, online learning is providing workers with an affordable and flexible model of lifelong learning.
- There is an increasing need to position universities as actors for lifelong learning against the background of the digital transformation.



Example

Advancement through Education: Open Universities

The program "Advancement through Education: Open Universities" funded by the German Federal Government and the Federal States promote the establishment and expansion of continuing education programs at universities in the context of lifelong scientific learning.

In particular, it should take into account the fact that there is a coexistence of higher education and vocational education and training. This is intended to improve the permeability between vocational and academic education and training and to create conditions under which new knowledge can be integrated into practice more quickly.



1.6. Access to Lifelong learning



Lifelong learning and the future of work: challenges and opportunities by ILO International Labour Organization

<https://www.youtube.com/watch?v=vm4b-50YkmU>

Good practice

Smart Qualified

The joint German funding program “Smart Qualified” of the Stifterverband and the Daimler Fund is part of the initiative Future Skills and therefore supports universities in the strategic (further) development of academic continuing education as an educational mission in the digital age.

In this way, higher education institutions (HEIs) are to push ahead with their cooperation with companies in the development of continuing education programs for the world of work 4.0 or develop new formats of qualification for the target group of working people.



Key takeaways

- Digitalization means that pedagogical contents can be made more accessible to students.
- Contents can be delivered through different means and lectures can be organized in a way that is more relevant for a faster-moving digital generation.
- Learners are expecting a more dynamic and engaged form of education, they need fast, flexible and affordable learning solutions.
- The teachers' role has evolved and they are becoming coordinators, facilitators, coaches, mediators and creators of learning opportunities.
- Educators today have the responsibility to guide the development of 21st century skills in their students.
- Online learning, mobile learning, video-based learning, game-based learning, personalized learning and virtual reality- based learning are examples of the new trends in education.
- Learning methods such as flipped classroom, design thinking, cooperative learning and project-based learning help in the learning process.
- There is an increasing need to position universities as actors for lifelong learning.



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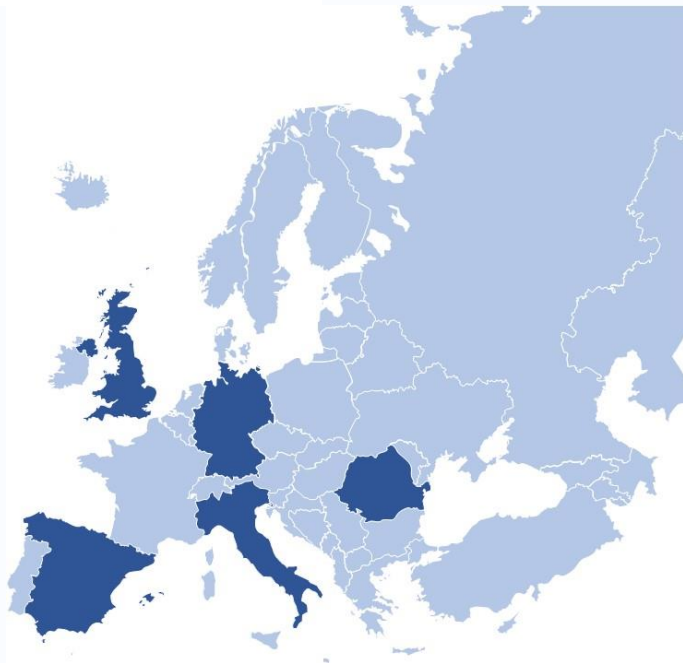
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