Module 3
Unit 3

Unit 3 – Barriers to going digital

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

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Unit 3: Barriers to going digital

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

The ESCALATE Module 3 is composed by 3 units, the third 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 recognise the different types of inequalities related to digitalization
- To understand that there are gaps in the digital skills of both educators and learners
- To detect the barriers you may find when going digital
- To find ways to overcome these barriers

Contents

3.1. Inequalities on access to technology and to digital devices

The existence of a digital gap in different groups related to education such as among teachers and students should be considered as a matter of concern.

Colleges and universities need to prepare their teachers and students for a world unlike ever before by bridging the digital divide in higher education.

Any attempts to examine inequalities in higher education need to focus on the issue of the digital divide in relation to internet and ICT use, as it constitutes a critical parameter which impacts on academic knowledge, students' performance and their transition to the labour market.

Source: [1], [2], [3]

3.1. Inequalities on access to technology and to digital devices

COVID-19 CRISIS

The move online in response to COVID-19, while enabling students to finish classes remotely, may have aggravated existing inequalities, and, in some cases, even increased them.

As students found themselves out of the campus, many lost the support from staff but also access to sufficient technology and infrastructure. Despite the ever-pervasive dominance of technology in our day-to-day lives, still not all students have equal and sufficient access to hardware and internet connection. Supporting students when they are unable to access those crucial services has been reported as the most difficult and often frustrating aspect of the period during which universities were expected to operate as normal.

Source: [4], [5]

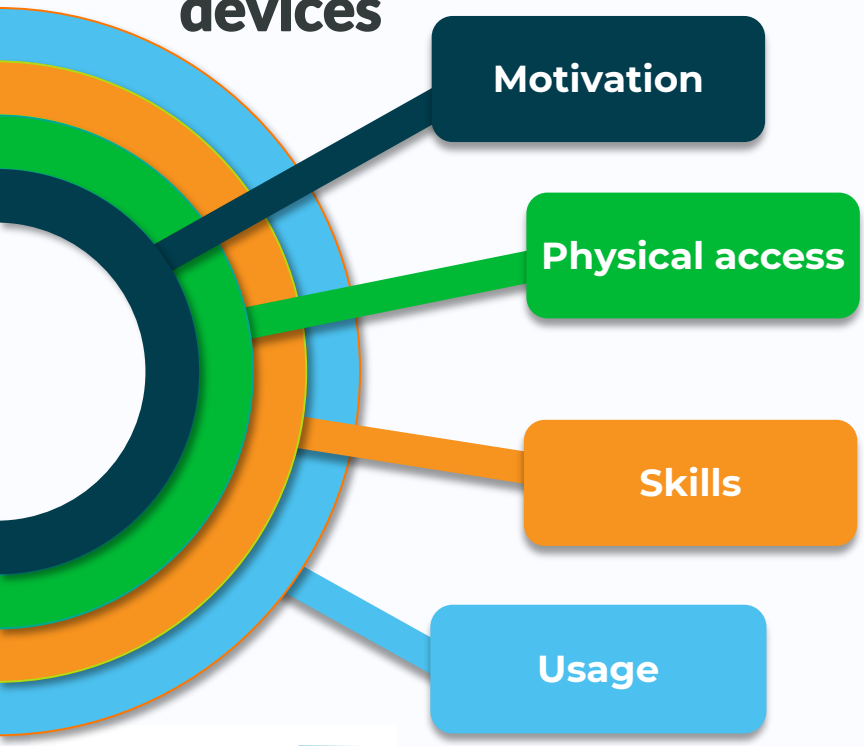
3.1. Inequalities on access to technology and to digital devices

- While digital technologies have been a solution to the disruption caused by the pandemic and may improve higher education teaching in the long term, they can also be responsible for increasing the digital divide.
- Some students have access to the latest technology, computers and gadgets, while other students struggle to afford a smartphone with an stable Wi-Fi connection.
- In the same way, some countries are much further ahead in their willingness to welcome technologies in education than others. Also, those who live in rural areas are more vulnerable to digital exclusion than residents of urban areas.

- On the contrary, another line of thought believes that online learning contributes to bridging the digital divide. The digital era could be universalizing education. Students can now access online learning that provide instruction on a wide variety of topics at various skill levels, and participate in real-time video conferences with teachers or tutors are located anywhere in the world.

Source: [6], [7]

3.1. Inequalities on access to technology and to digital devices



Source: [8]

Access to digital technology has various dimensions, it is not just a matter of having physical access to the technology and the devices. Four levels must be considered:

Motivation: the willingness to welcome ICT and be connected. It is influenced by social, cultural and mental or psychological factors.

Physical access: ICT affordability and/ or ownership, authority or the right to use a device or service (e.g., the Internet and sufficient bandwidth). Ensuring adequate physical access by teachers and students is the first and foremost prerequisite for the exploitation of ICT in education.

Skills: the ICT literacy; the knowledge and experience in the use of technologies. There are operational, information and strategic skills

Usage: the actual use of ICT. Usage is largely linked to demographic characteristics of users (e.g., social class, education, age, gender and ethnicity).

Reflection

Staff and students' access to ICT

- What are the staff and students' access to digital technologies at four levels (motivational, physical, skills, and usage level)?
- Are there significant differences among their access to digital technologies at these four levels?
- How does the staff's ICT-access differ with respect to their age, gender, and the type of university?
- How does the students' ICT-access differ with respect to their social background?

Source: [2]

3.2. Digital skills of educators and learners

Digital skills, your future by European Commission

https://www.youtube.com/watch?v=DzeUcsxitZ8

Source: [13]

3.2. Digital skills of educators and learners

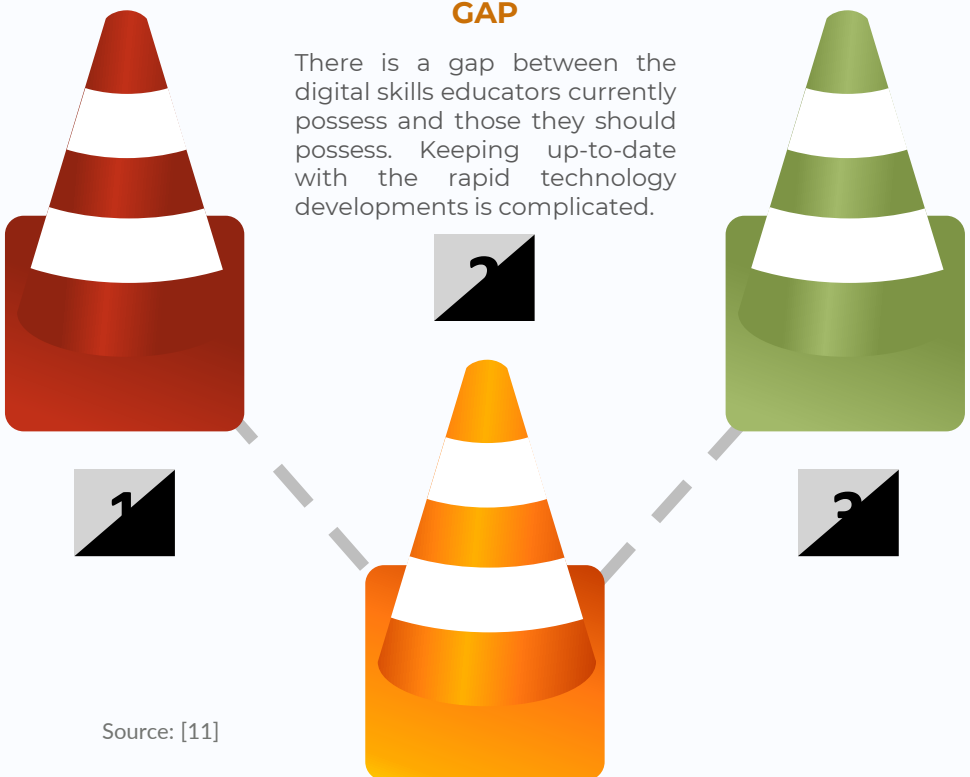
- The capacity of technology is very much conditioned by the level of digital skills of the educators and learners.
- According to the European Commission, digital competence is the confident and critical use of digital technology and covers the knowledge, skills and attitudes that all citizens need in a rapidly evolving digital society.
- Higher education institutions are awakening to an urgent and widening issue: multiple digital skills gaps affecting their faculty and students with consequences reaching far beyond campuses.
- Gaps in the digital skills of both educators and learners have driven a wedge between expectations and reality. Higher education and governments must address these challenges or technology may do more harm than good.

Source: [9], [10]

3.2. Digital skills of educators and learners

TECHNOLOGICAL SKILLS GAP

There is a gap between the digital skills educators currently possess and those they should possess. Keeping up-to-date with the rapid technology developments is complicated.



GENERATIONAL SKILLS GAP

There is a strong gap between the digital skills of students and those of faculty. Students are digital natives, while their teachers, typically, are not.

INEQUALITY SKILLS GAP

Not all students have the same level of digital skills. The majority of university students possess some digital skills, but to varying degrees.

Source: [11]

3.2. Digital skills of educators and learners

Teachers are often not as digitally experienced as their students (with the exception of some enthusiastic educators). Therefore, teachers are not at ease using new technology and digital solutions in the classroom. University faculty must first possess the essential digital skills necessary to teach to their students.

If the degree of digital skills among students was harmonised, there would be less inequalities and the educators could better incorporate learning that all students can benefit from, instead of having to adjust to the weakest skillset.

Even if higher education students own digital devices and seem to be all the time connected, they still need to learn how and when to use the available technology and need recommendations on how to navigate the digital world, especially in a professional context.

Source: [11]

Reflection

Gaps in the digital skills

- Picture your university or college. Do you think there is a generational skills gap between educators and learners? Explain the difference in their attitudes towards the new technologies, gadgets and software.
- Now think about the teachers. Are they struggling to keep-up-to-date with the latest technological developments? How do they keep-up-to-date?
- Finally, picture the students. Do you perceive different levels of digital skills among them? Or is the level more or less harmonised?
- Have you noticed an uptake in digital skills after the COVID-19?

Good practice

Digital Champions

Initiatives, such as “Digital Champions” (DC) schemes are currently rolled out across Scottish HEI to enable academics with greater knowledge and experience of using digital tools in learning to support colleagues in their departments and schools. These champions tend to be trained and supported by Academic Development (AD) teams and institutional learning technologists. At the Scottish University, ‘Faculty Digital Champions’ initiative appointed two 'Champions' (i.e. academic members of staff with online teaching experience) from each of the five Faculties.

The overall objective of the scheme is to create self-supporting communities of practice confidently and meaningfully embedding the technology in teaching. The knowledge and innovative solutions these communities can offer will be important in the post-Covid times, when campus-bound learning might become a thing of the past and more flexible ways of learning will be expected form geographically dispersed student populations.

Source: [5]

Good practice

Developing Digital Skills of Staff – courses in online and blended learning

In the last five years, Scottish Universities have been expanding their teams of learning technologists who support, develop and run ranges of courses focused on the online/blended learning for university educators. The objective is to develop digital skills of academics teaching students. Even before the Covid-19 global epidemic, the uptake of VLE has been increasing and blended ways of learning has been championed by institutions as way of engaging students in more innovative, collaborative and inclusive learning developing higher order skills and reappraising the value of independent learning and critical thinking. Some institutions also encourage and support staff to think about digital accessibility and therefore place a lot of effort on promoting a wider and varied use of digital resources in teaching, and particularly the engagement with/use of the open-source resources. At the Scottish University staff is encouraged to attend various CPD opportunities, such as the Blended and On-line Learning and Teaching course, HEA fellowship development opportunities, and a wide range of Teaching Bites sessions focused on digital delivery and tools to deliver pedagogically sound student learning experiences. The most recent emphasis on upskilling academic staff in online delivery has been accelerated by the 2020 Covid-19 pandemic.

Source: [5]

3.3. Recommendations to overcome barriers

- Inequalities on access to technology and gaps in the digital skills of both teachers and students are clearly standing in the way of the digital transformation of higher education.
- Other barriers according to the OECD include:

difficulties in locating high-quality digital learning resources and software

a lack of clarity over learning goals

insufficient pedagogical preparation on how to blend technology meaningfully into teaching

Source: [9]

3.3. Recommendations to overcome barriers

Going digital in education requires knowhow and involves adaptation and change. Here are ten recommendations included in the European Digital Education Action Plan:

To bring innovation and technology to the classroom, educators need **the right environment, infrastructure, devices and leadership support**

Need for an **approach that combines teacher training, curricula and educational materials** that are fit for digitally-supported teaching models

Need to provide a **framework** for issuing digitally-certified qualifications and validating digitally-acquired skills that can be stored in professional profiles such as Europass

Acquiring digital skills needs to start at **early age** and carry on throughout life

Closing the **gender gap** through digital and entrepreneurship education is vital if Europe is to fully embrace the benefits of the digital revolution

Build **evidence on the uptake** of ICT and digital skills in education institutions through publications and dissemination

Launch **artificial intelligence and learning analytics pilots** in education to improve implementation and monitoring of education policy

Initiate **strategic foresight** on key trends arising from digital transformation for the future of education systems, and making use EU-wide cooperation channels on education and training

Scale up innovative policies and practices, such as the **pockets of innovation** in digital education

To use the **European Digital Competence Framework for Educators** to offer teachers guidance in developing digital competence models

Source: [10]

Example

Initiatives to support digitalization in higher education institutions in Scotland

Currently, additional initiatives to support students and their learning are being developed in the Scottish HEI sector, to include:

- Greater access to digital resources (incl. e-textbooks)
- Adjustment to assessment, more asynchronous and self-guided delivery of courses
- Supportive skills development workshops offered by the library
- Information centres and the student support services (to include videos on how to use VLE)

Source: [5]

3.3. Recommendations to overcome barriers

- One of the priorities should be the training in digital skills of all the staff in university including the research and teaching staff, the administration staff and the management bodies. We must pay special attention to the training of the IT unit or service, which will be one of the fundamental actors.

- It is essential that teachers are trained in the use of new technologies applied to the classroom and education, knowing in-depth tools that allow managing the teaching/ learning processes. Teachers should also be trained in new innovative teaching practices and ways to facilitate learning. And finally, the new technological disciplines (programming, robotics, etc.), awakening STEM vocations (Science, Technology, Engineering and Mathematics) bringing to the reality of the classroom the axiom: “learning by doing”.

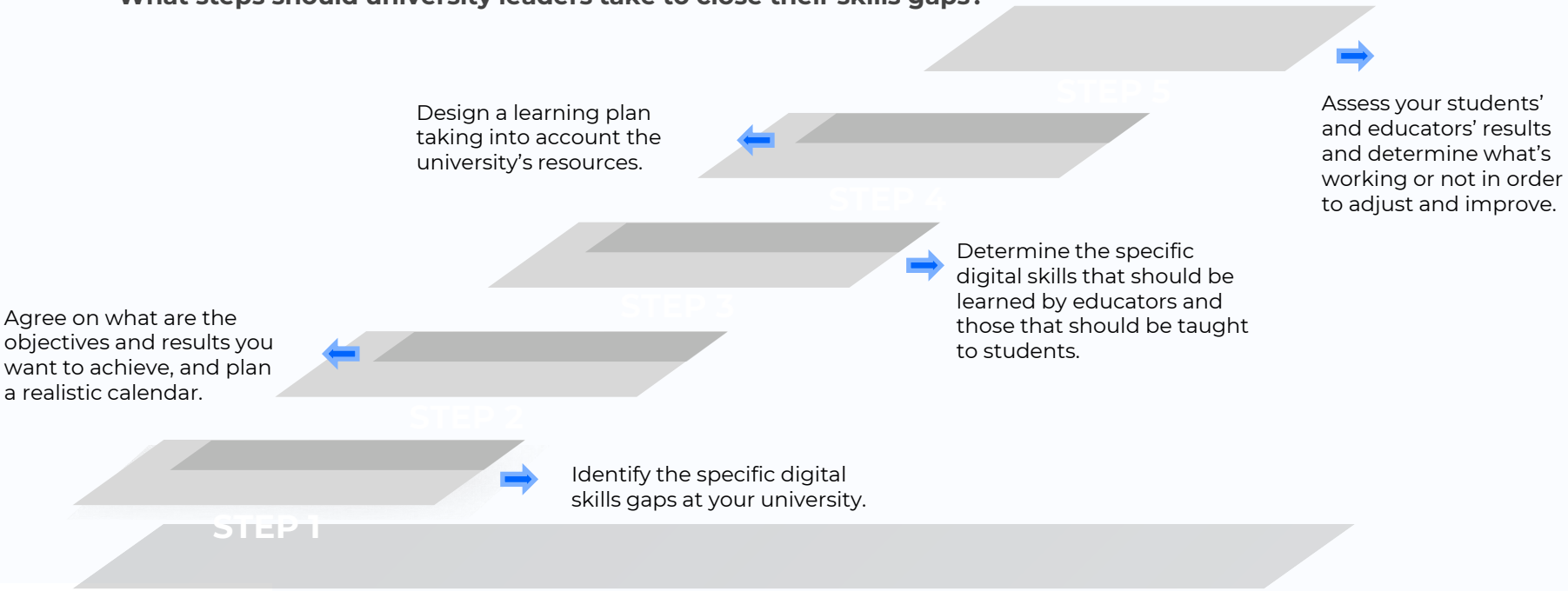
- Students want to learn differently, they consume information differently. There will be an impact on the training contents and the way in which they must be presented; we have to offer interactive content, made possible by the application of technology such as virtual reality or artificial intelligence. We must equip ourselves with the tools that allow us to collect and make the correlation of these interactions, not only of the information systems and / or own physical points, but also of the interactions of the students in external services or systems, such as social networks.

- The adoption of a Digitalization strategy is much more than the incorporation and regular use of the Internet and digital media. Digital transformation requires an institutional plan to face it, so universities must design, arrange, and execute a digitalization plan that will allow the organisation to evolve to the so-called digital transformation. This plan should be specific to each university, establishing a set of actions that will lead it, either to an evolved model of the current one, or to a totally disruptive model.

Source: [12]

3.3. Recommendations to overcome barriers

- **What steps should university leaders take to close their skills gaps?**



Source: [11]

Key takeaways

- Any attempts to examine inequalities in higher education need to focus on the issue of the digital divide in relation to internet and ICT use.
- While digital technologies have been a solution to the disruption caused by the pandemic and may improve higher education teaching in the long term, they can also be responsible for increasing the digital divide.
- Access to digital technology has 4 dimensions: motivation, physical access, skills and usage.
- The capacity of technology is very much conditioned by the level of digital skills of the educators and learners.
- Higher education institutions are identifying multiple digital skills gaps affecting their faculty and students: generational skills gap, technological skills gap and inequality skills gap.
- The European Digital Education Action Plan proposes some recommendations to overcome the barriers to going digital. These include the need for an adequate environment, infrastructure, devices and leadership support.
- The training of faculty in digital skills is essential.
- University leaders should adopt a Digitalisation Strategy that starts by identifying the skills gaps and closing them with a learning plan.

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This Unit is part of the Training Materials developed by the ESCALATE Erasmus+ Strategic Partnership. More information about the project, results and contacts, available at:

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