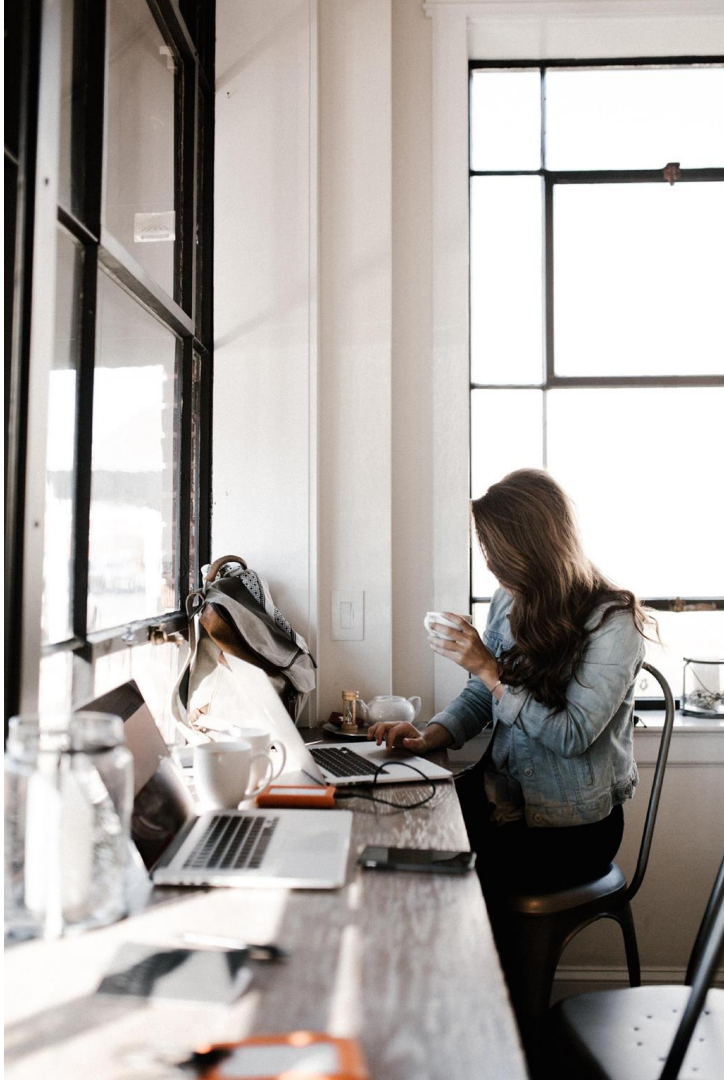
Module 4
Unit 3

Unit 3 – Policy Responses to Digitalisation

Module 4: LABOUR MARKET AND NEW SECTORAL RESPONSES TO DIGITALIZATION



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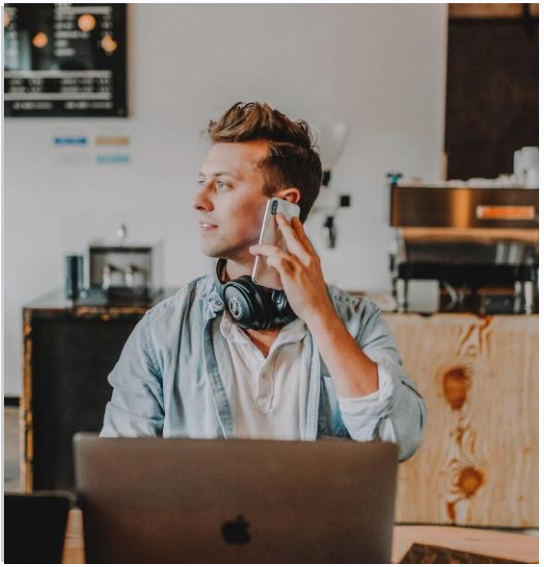
Unit 3: Policy Responses to Digitalisation

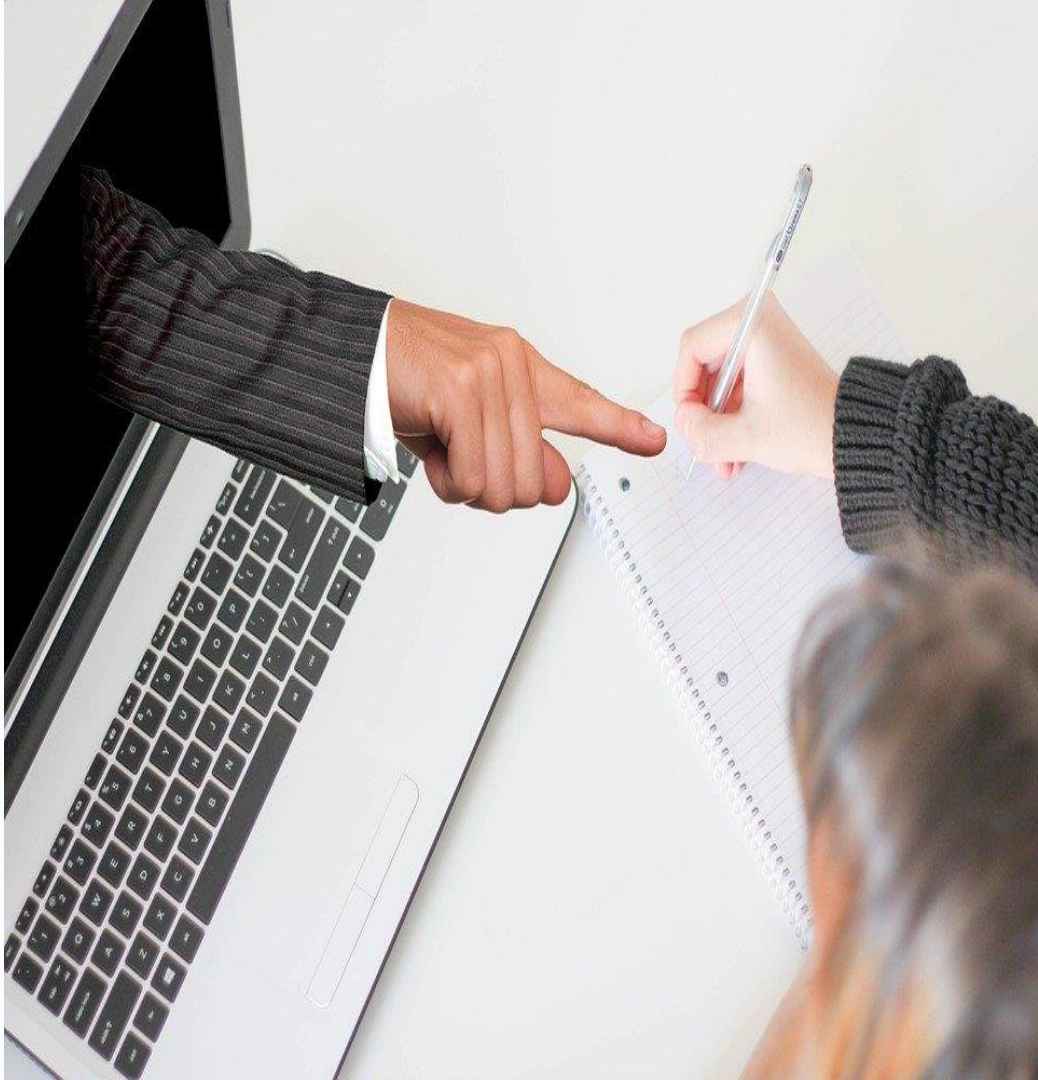
Module 4: LABOUR MARKET AND NEW SECTORAL RESPONSES TO DIGITALIZATION

1. The impacts of digitalization on the labour market and key sectors
2. Labour market monitoring and available tools
3. **Policy responses to digitalisation**



The objectives of this Unit are:

- This UNIT looks in detail at responses to digitalisation at European and National levels.
- It also explores potential University responses to the impacts of digitalisation.
- Finally it makes Recommendations for both universities and Higher education policymakers - to better utilise LMI and LMI Tools to help build on new opportunities.



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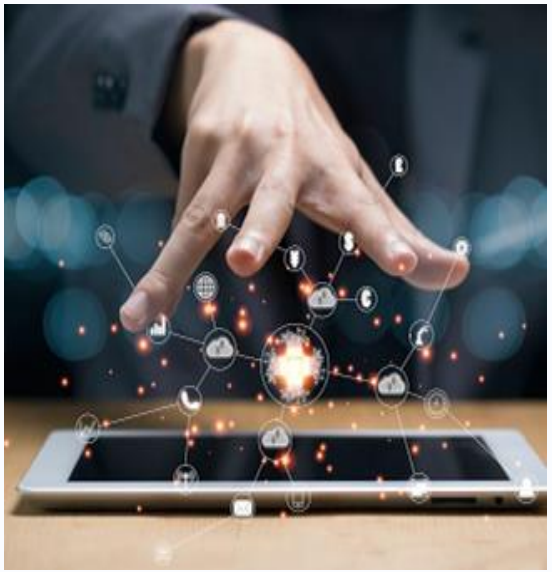
- If European policymakers want to close the gap with the United States in terms of adopting AI and digitalisation, they will need to address structural barriers to investment in digitalisation.
- Therefore they are seeking to remove disincentives to grow and reduce market fragmentation, particularly in the service sector where the EU is still far from a single market.
- Ultimately, inter-related trends such as e-commerce, big data, machine learning and artificial intelligence (AI), and the Internet of Things (IoT) could lead to large productivity gains.
- The European Commission's Digital Education Action Plan (2021-2027) outlines the European Commission's vision for high-quality, inclusive and accessible digital education in Europe. It is a call to action for stronger cooperation at European level to:
  - learn from the COVID-19 crisis, during which technology is being used at an unprecedented scale in education and training
  - make education and training systems fit for the digital age
- On a policy level, the EU is leading coordination among its member states for investment and data sharing.
- The EU's "Coordinated Plan on Artificial Intelligence" encourages the use of AI to solve some of the world's most pressing challenges, including disease, climate change, and cross-border crime.

Source: https://ec.europa.eu/education/education-in-the-eu/digital-education-action-plan_en

3.1. The European level response to the impact of digitalisation

Digital Transformation Policies

- In the policy landscape of European countries, digital transformation policies take different shapes. EU Member States have also set up strategies for the development of information society and innovation programmes that are closely intertwined with their national digital growth strategy.
- The development of national initiatives for digitising industry is an important element of the European Platform of National Initiatives on Digitising Industry which is at the core of the Digitising European Industry strategy. This provides a forum to identify, share experiences and practices, trigger collaboration, boost co-investments and explore common approaches.
- The platform comprises fifteen national initiatives for digitising industry, with further initiatives under preparation.
- Countries must also implement an effective lifelong learning system; one that quickly responds to labour market needs and offers opportunities to the low-skilled whose jobs are at high risk from automation

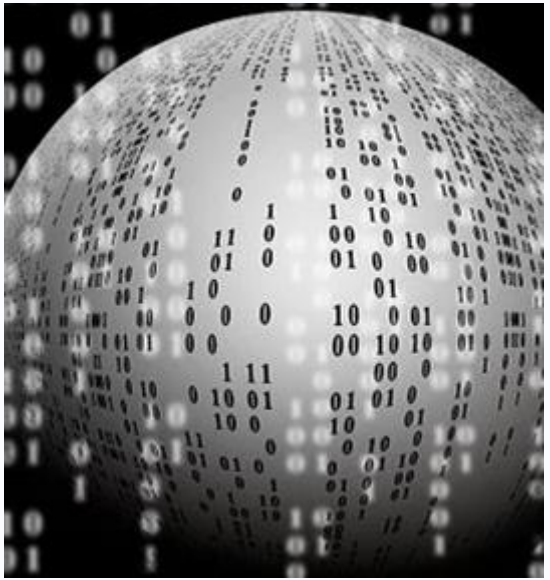


Source: https://ec.europa.eu/digital-single-market/en; https://linpra.lt/wp-content/uploads/2018/02/Digital_Transformation_Scoreboard_201802.pdf

3.1. The European level response to the impact of digitalisation

The need for Digitalisation Plans

- Policymakers also need to develop digitisation plans across sectors that take into consideration the varying potential impact and capacity to respond.
- Policymakers must ensure the capabilities and enablers for sectoral digitization are in place to foster an ecosystem in which the uptake and usage of digital applications grow.
- Policymakers can harness these varying effects of digitization through three main measures, which go beyond their current roles of setting policy.
    - o First, they should create digitization plans for targeted sectors in which they wish to maximize the impact of digitization.
    - o Second, they should encourage the development of the necessary capabilities and enablers to achieve these digitization plans.
    - o Finally, policymakers should work in concert with industry, consumers, and government agencies to establish an inclusive ICT ecosystem that encourages greater uptake and usage of digital services.

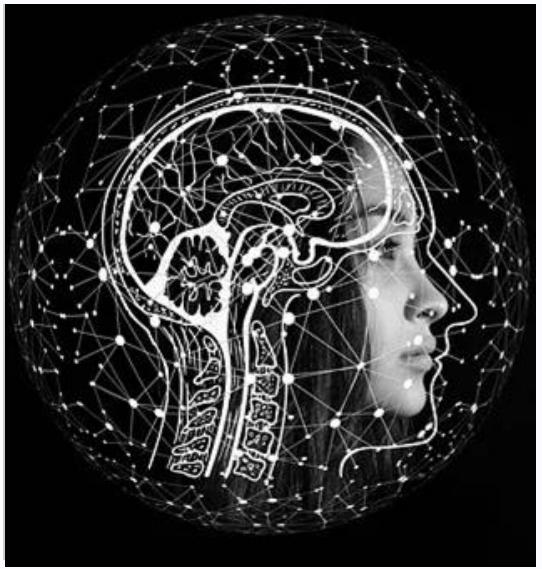


Source: https://www.strategyand.pwc.com/m1/en/reports/digitization-economic-growth-job-creation.html]

3.1. The European level response to the impact of digitalisation

Policy relies on good data

- Policy intervention to address skills imbalances relies on having good information on current and future skill needs
- Countries take different approaches to develop qualitative and quantitative information on skill needs.
- Successful skill needs anticipation systems share a number of common features.
    - o They are clear about their principal objectives - whether they are to support policy formulation and contribute to strategic planning, or to provide data for better-informed career choices, or both.
    - o They are user-oriented, stakeholder -and well-coordinated.25
- Stakeholder engagement, notably through social dialogue, is key to ensuring that skills assessment and anticipation exercises provide information in a format and at a level that is consistent with policy objectives and which feeds into policy action.

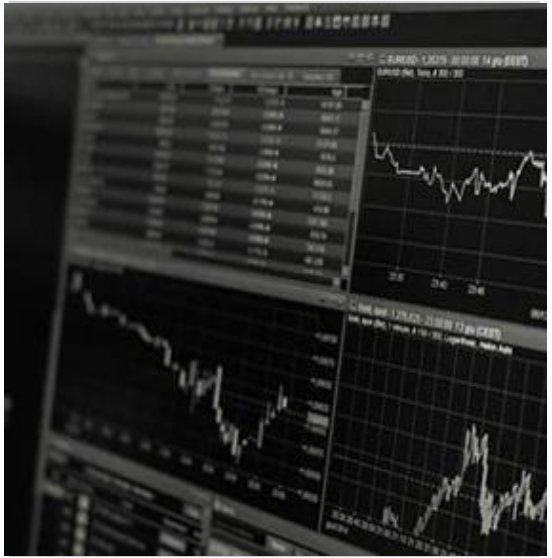


Source: https://www.ilo.org/wcmsp5/groups/public/---dgreports/---inst/documents/publication/wcms_646143.pdf

3.1. The European level response to the impact of digitalisation

Turning data into policy action

- The results of skills assessment and anticipation exercises need to be widely disseminated in a useful and accessible form to maximise policy impact.
- Skill challenges are relevant to several policy domains:
  - o In employment policy used to update occupational standards and to design apprenticeships, re-training courses and on-the-job training.
  - o In education policy used to inform curriculum development and set the number of student places at all levels of education.
  - o In migration policy used to update shortage lists and to identify fast track candidates for migration with skills that are in high demand.
- Mechanisms to reach consensus, range from informal consultations, national skills advisory groups, and formal mandates to foster dialogue among stakeholders.
- Sectoral bodies provide the most favourable opportunities for employer and trade union involvement in skills policy formulation and implementation.



Source: https://www.ilo.org/wcmsp5/groups/public/---dgreports/---inst/documents/publication/wcms_646143.pdf

3.2. What national responses are we seeing that impact on Universities

National governments are also tackling the impact of digitalisation. In this section we look at a number of responses. Through forecasting and fore-sighting, governments are well aware of the potential labour market impacts

- In this section we look at responses in:
  - England
  - Scotland
  - Germany
  - Italy
  - Romania
  - Spain

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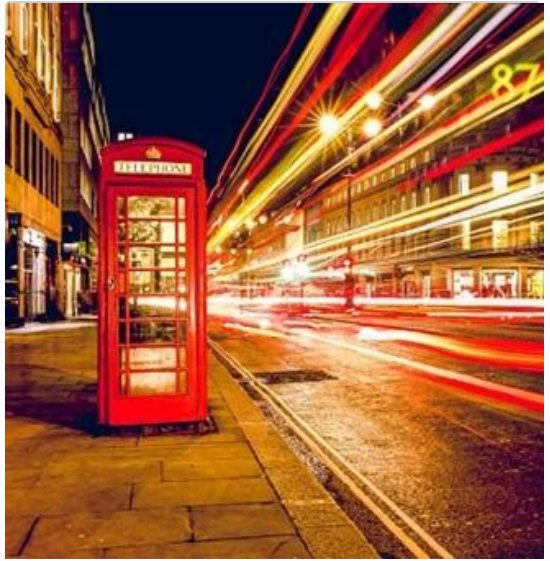
3.2. What national responses are we seeing that impact on Universities

England

More than six million people in the UK are currently employed in occupations that are likely to change radically or disappear entirely by 2030. The UK Government's Digital strategy promises a reform of the technical education system including the creation of a specialist digital route, with employers setting standards and specifying the skills individuals will need. Further:

- Increasing the capability of those who are digitally excluded, as well as those who are online but lacking the confidence and knowledge to needed.
- Introducing digital degree apprenticeships, designed by groups of employers to give apprentices full occupational competence and which provide industry with the skills they need.
- In 2017 the UK government launched local Digital Skills Partnerships (DSPs) together with businesses, charities and voluntary organisations to help increase the digital capability across the whole skills spectrum of individuals and organisations in England.



Source:
https://media.nesta.org.uk/documents/Precarious_to_prepared._A_manifesto_for_supporting_the_six_million_most_at_risk_of_losing_their_jobs_in_the_next_decade_v5.pdf
https://www.gov.uk/government/publications/uk-digital-strategy/2-digital-skills-and-inclusion-giving-everyone-access-to-the-digital-skills-they-need

3.2. What national responses are we seeing that impact on Universities

Scotland

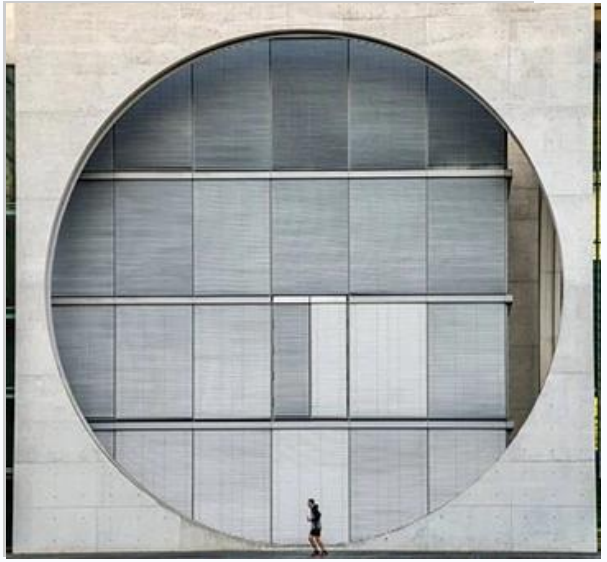
- In Scotland, the key policy-driven initiatives and programmes driving digitalisation in HEI are aligned with the vision for Scotland as a productive, innovative and digital nation with an educated and skilled workforce able to successfully engage in the world of work in a globalised modern economy (QAA 2020).
- Skills Development Scotland continues to drive digital skills training and employment agenda, promoting, organising and evaluating all skills-driven interventions across schools, colleges, HEIs and work-based sites.
- The activities focused on the improvement of strategy, policy and practice are led, supported and monitored by the sector's body, the Scottish Higher Education Enhancement Committee managed by Quality Assurance Agency for Higher Education.

Source: https://www.skillsdevelopmentscotland.co.uk/ https://www.qaa.ac.uk/scotland/about-us

3.2. What national responses are we seeing that impact on Universities

Germany

- A wide variety of strategies, programs and funding measures exist at state and federal level to support the digitisation of universities.
- The Federal Government's Digital Agenda sets out the guidelines for digital policy and bundles measures in central fields of action to help shape digital change
- The strategy consists of five fields of action: Digital literacy; Infrastructure and equipment; Innovation and digital transformation; Society in digital change; and Modern state.
- The field of action Digital literacy focuses on the main points School education, Education, training and further education and Competent society.
- The intended objective is, that “all people become able to take advantage of the opportunities offered by digitization. They should be able to shape digital change in a self-determined way and deal responsibly with the risks."
- There is a stated desire to support universities, companies and training institutions to teach digital literacy, especially in vocational training.

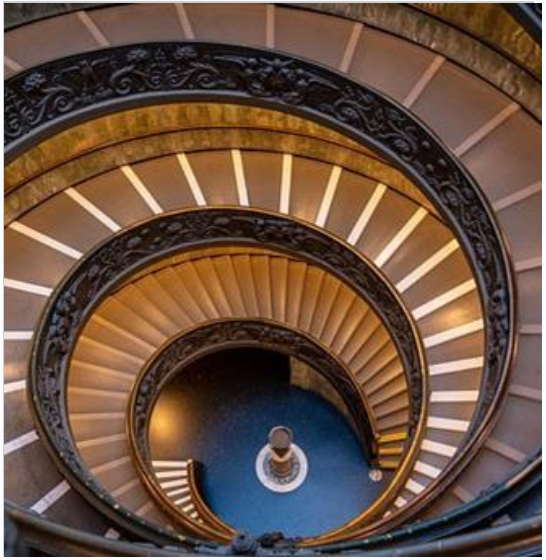


3.2. What national responses are we seeing that impact on Universities

Italy

Italy adopted a National Strategy for Digital Skills in July 2020. The basic principles are:

- Digital Education: computer culture and digital skills are essential requirements for full citizenship. The public and private sectors must invest to foster skills development as they are determining factors for growth, competitiveness, creation of public value, and the well-being of the country.
- Digital Citizenship: digital technology can foster the development of a new form of citizenship based on quality information, participation in deliberations, civic engagement, and a more effective relationship between citizens and public administration.
- Ethical, human and non-discriminatory digital: digital can become an opportunity for equality and the growth of communities and individuals.



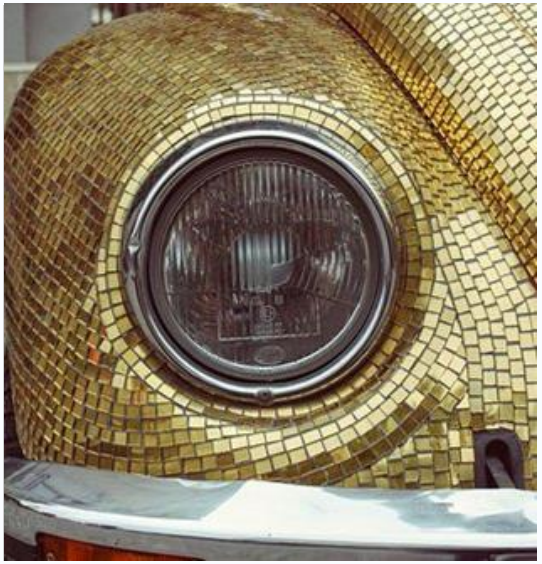
Source: https://repubblicadigitale.innovazione.gov.it/assets/docs/national-strategy-for-digital-skills.pdf

3.2. What national responses are we seeing that impact on Universities

Romania

In October 2020, the Ministry of Education launched a process of public consultation to develop a national strategy on the digitalization of education Ministry of Education, 2020). The main aims of the SMART-Edu are to:

- develop and enhance digital skills at every level of education
- support initial and continuous (lifelong) digital training for educators
- improve the digital infrastructure in order to lower the connectivity gaps
- support education institutions through incentives for educational offers
- design digital education instruments and to encompass innovation
- create attractive open access educational resources
- develop and multiply public-private partnerships
- perform best-practices exchanges via local educational platforms
- encourage and support initiatives for online security, cybernetic and data protection, IT ethics
- develop a framework of strategic forecasting for a green economy and to adapt to the professions of the future



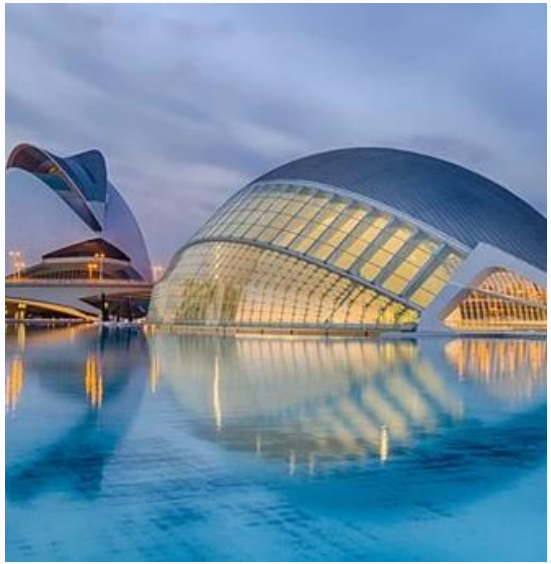
Source: https://www.smart.edu.ro/

3.2. What national responses are we seeing that impact on Universities

Spain

The Spanish Inter-Ministry Artificial Intelligence Working Group, coordinated by the Ministry of Science and Innovation, is also actively working on the elaboration of the National Artificial Intelligence Strategy:

- This strategy aims to align national policies aimed at promoting the development and use of AI in Spain, increasing investment, reinforcing excellence in AI technologies and applications, and strengthening collaboration between the public sector and private, so that there is a significant impact on society and the Spanish economy.
- The government announced in 2019 the implementation of a Digitalization Strategy in Education and Vocational Education and Training (VET) which includes actions aimed at developing the digital competences of teachers, students and the educational centres and boosting women in the field.
- The Plan also includes 80 new VET offers associated with smart manufacturing, digital maintenance, Artificial Intelligence, Big Data, virtual reality, cloud computing, autonomous vehicles, drones and machine learning.



Source: https://www.ciencia.gob.es/stfls/MICINN/Ciencia/Ficheros/Estrategia_Inteligencia_Artificial_EN.PDF

3.3. Potential University responses to these impacts

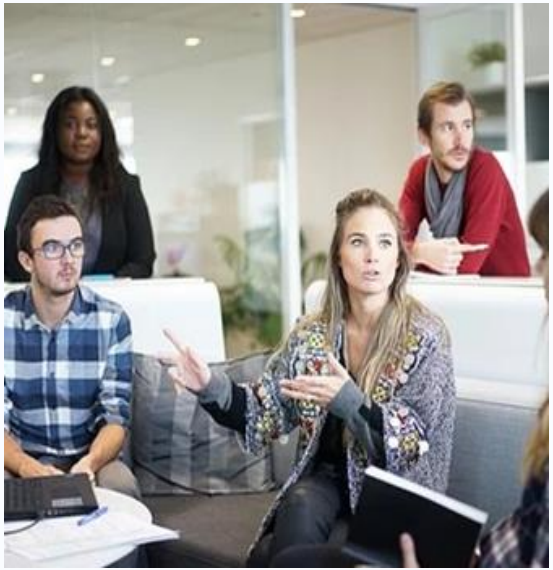
- Digitalisation offers the potential to re-envisage educational delivery and to change the model of delivery from face-to-face to blended or even entirely online courses. COVID has led to widespread university adoption of online classes with pre-recorded virtual classes and virtual discussion groups becoming the norm for many students in 2020 and 2021.
- Delivering in a different way also offers the potential to break up the learning offer into smaller modules that can easily be incorporated in other courses and even made available as CPD or other external provision.
- We have seen earlier that graduate skillsets are still not keeping up with the pace of change and that gaps are accentuated by the pace of technological change.
- Although skill gaps have improved marginally across the different regions of the world firms continue to be concerned that the relevance of the skillsets of graduates is not keeping up with the pace of evolving market requirements.
- The widening gap between labour market demand for skills and skills availability is an important challenge for policy makers.

3.3. Potential University responses to these impacts

Students' views of digital literacy

Students are clear that digital literacy is very important for academic success and future plans. However, a 2021 UK survey by Wonkhe reveals:

- On arrival at university, students report that it is assumed their levels of digital literacy can be higher than they actually are.
- There is a perception that STEM subjects offered comparatively better training in digital tools.
- Students would welcome more support with adopting appropriate online etiquette and social codes and good practice for online communications
- The digital divide presents issues such as costs, accessibility, connectivity, porting software across devices, and learning across time zones
- Digital fatigue is also a concern

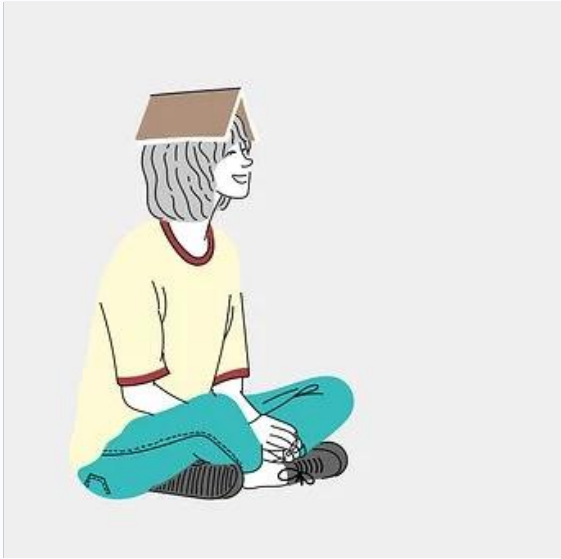


https://wonkhe.com/wp-content/wonkhe-uploads/2021/06/Wonkhe-Adobe-curriculum-for-a-complex-world-student-research-June-21.pdf

3.3. Potential University responses to these impacts

Digital literacy in the curriculum

- Students are keen on diverse and creative forms of assessment – such as video assessment or digital poster presentations.
- Students value activities that have a “real-life” application
- Students see digital literacy as enabled through the embedding of digital into other activities such as research, group work, project planning, conducting surveys and undertaking data analysis.
- Digital literacy is also perceived to enable the co-curriculum in which students can apply their learning.
- Students feel their experience of developing digital literacy depends heavily on the digital literacy of their lecturers.
- Students welcome opportunities to learn digital skills from peers, and to learn by doing.



https://wonkhe.com/wp-content/wonkhe-uploads/2021/06/Wonkhe-Adobe-curriculum-for-a-complex-world-student-research-June-21.pdf

3.3. Potential University responses to these impacts

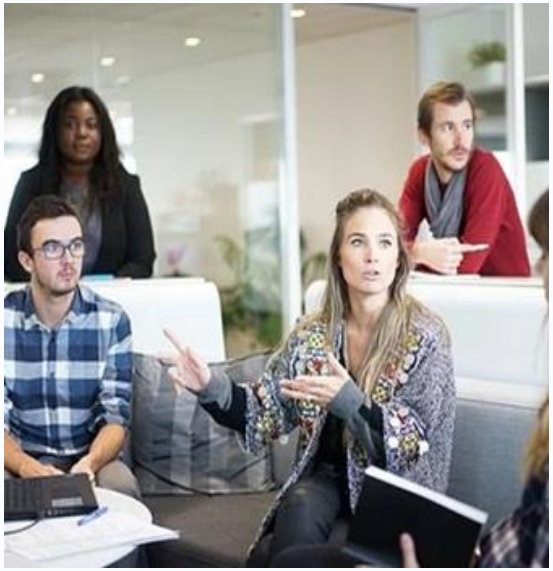
Adult learning and External CPD

- Effective adult learning can help prevent skills depreciation and facilitate transitions from declining jobs and sectors to those that are expanding.
- The great majority of people who will be working in 2030 are already in the labour market. Universities have a potential role in extending their traditional offer of taught accredited qualifications into CPD modules.
- Utilising the LMI monitoring recommended in this course module will enable universities to better understand the requirements of the world of work and therefore to identify where they have existing courses and modules with the potential to be used for external CPD.
- Training needs to be of good quality and aligned to labour market needs in order to be effective.
- This may require an internal shift new processes and systems less based around accreditation and monitoring of students and more towards short courses and digital badging (for example).

3.3. Potential University responses to these impacts

Extend the University offer outside of the curriculum

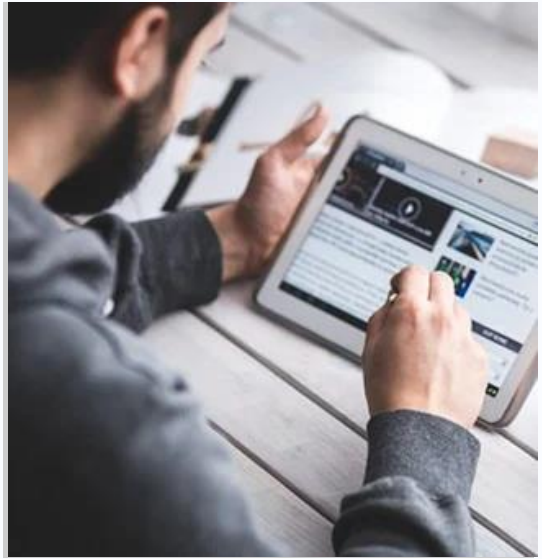
- Most universities now offer additional training and support to students to help them to successfully make the transition to the world of work. Logically these should be extended where practical to offer:
  - Guaranteed internships and placements;
  - training in topics needed by enterprises but outside of their curriculum (digital skills, green skills, etc.);
  - Entrepreneurship training; Support to develop their own spin-out businesses and links to entrepreneurs
- Students often have particular skill sets that employers, particularly smaller employers, are lacking. An obvious example concerns digital skills and social media (an area most students take for granted but can be missing from the skillset of many SMEs). Others can be language skills and a detailed knowledge of accounting and legal practice.
- Students can also be quickly trained to provide useful internal services as part of a short term internship or placement. One example is that of green skills / environmental auditing, where university students can be placed in an SME to carry out an internal environmental assessment.



3.3. Potential University responses to these impacts

Technology for learning

- There is a need to make the most of technology for learning. This means using new technologies more – and better – for learning & adapting curricula.
- The potential of open education and MOOCs to support learning and skills development can be leveraged further. We need to broaden awareness of and participation in these learning platforms.
- This requires consistent strategic investment in higher-order ICT skills and their integration within education curricula as a key competence, since they are likely to become the norm in a wide(r) set of future jobs.
- Reinforcing the attractiveness of ICT-related subjects, and of STEM fields in general, remains a critical concern, given low levels of participation by young people in some such subjects. This could be achieved by exploiting new modes of online ICT education delivery, which can support further private industry involvement in e-learning and the award of new high-quality e-certificates and qualifications.



3.3. Potential University responses to these impacts

Build new relationships

- Bringing employers into the university to help shape and even deliver curricula increasingly common. Clear benefits for student employability can be achieved through embedding real-life problems into subject delivery and seeking appropriate solutions.
- Technology and skills needs changes so rapidly that in order to produce work-ready graduates, universities engage in intimate collaboration with employers - including internships and placements.
- Preparing graduates for a digital workplace has become essential, yet many feel that their courses do not adequately prepare them for the digital workplace, and others underestimate the importance of digital skills for their career.
- There is currently a gap in the number of employers who want graduates with work experience, and those willing to offer them. This is something that could be addressed both by universities reaching out to their regional employers and by policymakers introducing funded internships and placement schemes as part of plans to retain skilled graduates in their region.
- Boosting engagement with SMEs (which far outnumber larger organisations) could be key to providing more opportunities for graduates.
- Placements or internships are proven in enhancing employability. Focusing internships on the most disadvantaged groups has the knock-on benefit of tackling social inclusion.
- Universities need to start thinking differently and more bravely about how to deliver and how to diversify and deliver more tailored and more nuanced programmes.

3.4. Recommendations for universities and Higher Education policymakers to better utilise LMI and Tools to build on new opportunities

- Skill gaps have improved marginally around the world but graduate skillsets are still not keeping up with the pace of change.

- The widening gap between labour market demand for skills and skills availability is an important challenge for policy makers and firms to address. These gaps are accentuated by the pace of technological change.

- Although skill gaps have improved marginally across the different regions of the world, firms continue to be concerned that the relevance of the skillsets of graduates is not keeping up with the pace of evolving market requirements.

- The United States appears to be the only country that has registered significant improvement in closing skills gaps over the last 3 years .

Source: World Economic Forum Executive Opinion Survey, 2018

3.4. Recommendations for universities and Higher Education policymakers to better utilise LMI and Tools to build on new opportunities

Recommendations for Universities

1. Universities need to fully utilise existing LMI within their policymaking, curriculum design and extra curriculum planning:
 - Use the Skills Panorama and Skills Ovate to find information on your region.
 - Use sectoral information to find information on sectors of interest to your region.
2. Universities need to explore which LMI is most suitable for each type of internal use (our Module will help with this)
3. Universities need to provide quality LMI to their students to enable them to understand the importance of digital skills to their chosen carers
4. Universities need to embed digital skills into the taught curriculum wherever practical
5. Universities need to provide additional opportunities for student not utilising these within their curriculum (such as some humanities students) to obtain them in Summer Schools and extra-curricular courses
6. Universities need to support their own staff with digital skills. Both support with new systems and software and using industry standard analytical approaches such as R and Python

Source: [4]

3.4. Recommendations for universities and Higher Education policymakers to better utilise LMI and Tools to build on new opportunities

Recommendations for Higher Education Policymakers

1. Policymakers need to link emerging digitization plans to the delivery of conventional HEI programmes.
 - Individuals need to be helped to develop the right skills to thrive in a digital workplace and in an increasingly digitalised society.
 - Teachers need to be supported to reap the benefits of new teaching and learning possibilities.
2. Policymaker need to recognise the potential role universities can have in tackling digital skills in the labour market:
 - directly through the content of their taught curriculum
 - through internships and placements
 - through extracurricular student support
 - through research and analysis of their regional labour markets
3. Policymakers can link digital skills to inclusion through prioritising funding of internships and similar activities to low (HE) participation groups
4. Policymakers must make quality LMI available to workers – to empower them to navigate their way to the jobs of the future

Source: [4]

3.4. Recommendations for universities and Higher Education policymakers to better utilise LMI and Tools to build on new opportunities

Post-COVID 19 Considerations (i)

Covid-19 led governments across the world to advise employees to work from home. New digital skills have become essential skills to enable homeworking. Covid-19 is driving a movement towards more remote work

- Employers and employees are keen to retain the benefits they have encountered during lockdown.
- Remote working is likely to be accompanied by an acceleration of 'flexible' work arrangements.
- Remote working can support healthy working practices and wellbeing but should not be conflated with 'good' or 'future' by default.

Remote work may catalyse transformation of the wider work landscape in positive ways

- Technology has enabled a range of tasks to be conducted remotely. The restrictions of lockdown have acted as a catalyst: more tasks are now undertaken without face-to-face contact.
- Enabling technology works best when supported by human management and training.
- Temporal and geographical flexibility can come with remote working, which has the potential to change geographies of access to work.

Source: [4]

3.4. Recommendations for universities and Higher Education policymakers to better utilise LMI and Tools to build on new opportunities

Post-COVID 19 Considerations (ii)

Covid-19 increasingly 'necessitates' some tasks being mediated through data-driven technologies and is:

- Changing rationales for investment in technology
- Rapidly impacting the supply of labour
- Changing public attitudes towards the uptake of new technologies.80

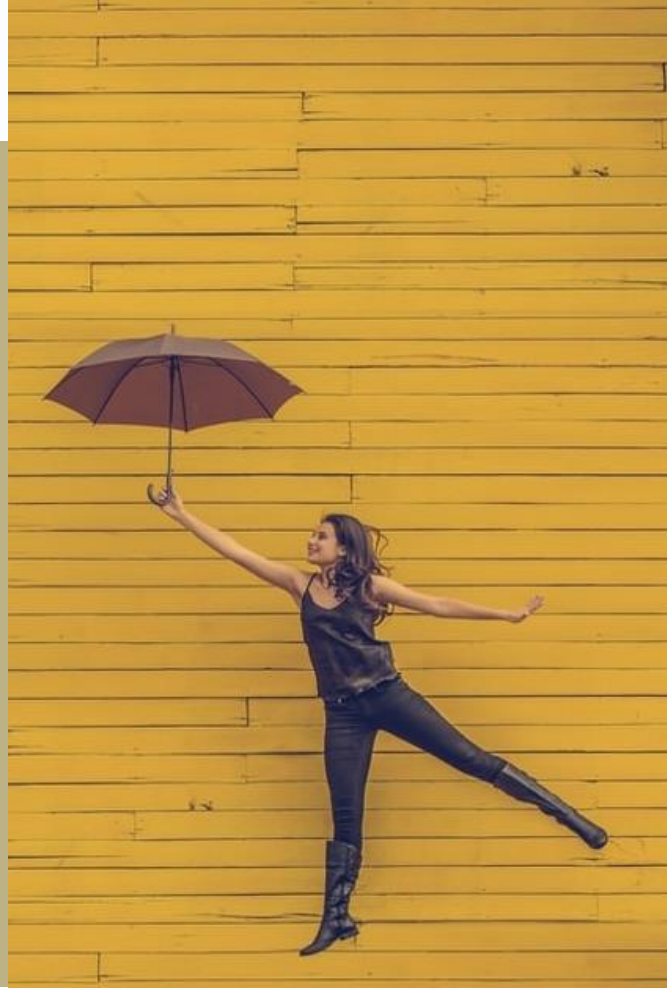
Data from the online learning provider Coursera has been able to identify a bifurcation in skills demand

- Those in work are looking for personal development courses
- Those not in work have placed greater emphasis on learning digital skills such as data analysis, computer science and information technology

Source: WEF The Future of Jobs Report 2020. http://www3.weforum.org/docs/WEF_Future_of_Jobs_2020.pdf

Key takeaways

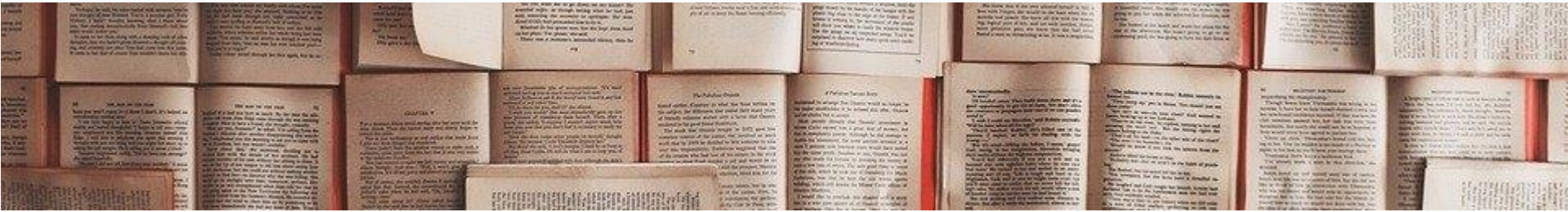
- The European Union is responding to the potential and threats of digitalisation and artificial intelligence through a variety of mechanisms designed to ensure it does not fall behind and that all citizens can take advantage of the new opportunities.
- COVID has been a particular driver for certain types of digital working at all levels.
- Nation states are pursuing very similar policies through slightly different routes and at different speeds.
- Universities need to work with policymakers to adapt the way they deliver both their curriculum AND their extra-curricular activities.
- Universities are a tremendous resource in terms of skills and know-how that can be used to help transform the digital approach taken by businesses



Reflection

- Think about the context of your own university.
- Where are the policymakers responsible for University policy and regional economic growth situated? Are they in a position to utilize Universities to help drive successful and inclusive growth in the region?
- Does your institution have a digital policy? How is it pursuing change in a structured way and is this related at all o the world outside of the University? If not why not?
- What lessons from COVID are there that could assist your University in its embracing of digitalisation?

References



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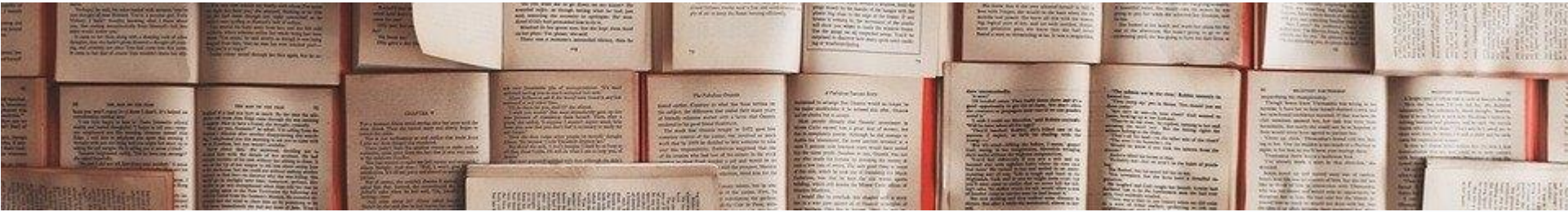

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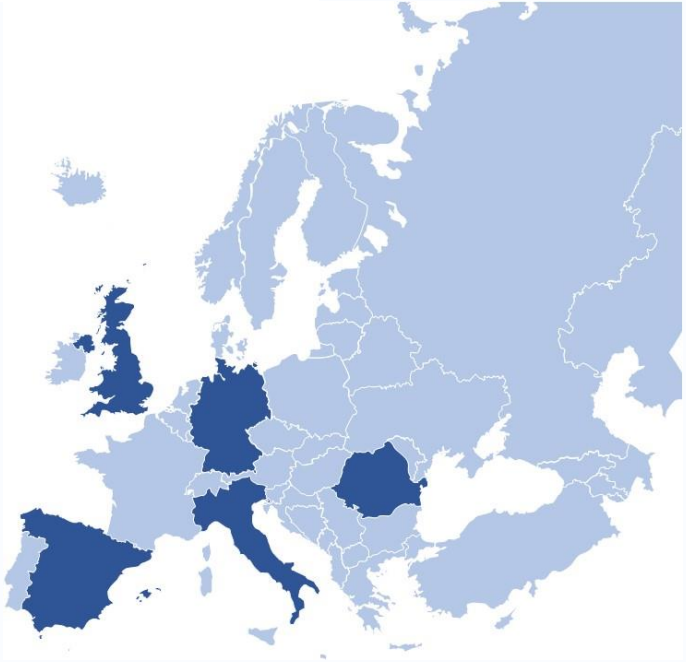

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