

Learning the Digital Lifelong

Positions and reflections from the perspective of Education for Democratic Citizenship/Human Rights Education.

DIGIT-AL – Digital Transformation in Adult Learning for Active Citizenship

Published: 01/09/2021

DARE Democracy and Human Rights Education in Europe. Learning the Digital Lifelong. Positions and reflections from the perspective of Education for Democratic Citizenship/Human Rights Education. DIGIT-AL – Digital Transformation in Adult Learning for Active Citizenship. Brussels 01/09/2021.

This paper has been developed by Daniela Kolarova, Georg Pirker, Ramon Martinez in the frame of the Partnership digit-AL. With contributions of Nils-Eyk Zimmermann and the partners in the DIGIT-AL project: Arbeitskreis deutscher Bildungsstätten AdB e.V. (DE, coordinator), Democracy and Human Rights Education in Europe (BE), Partners Bulgaria Foundation (BG), Centro per la Cooperazione Internazionale (IT), Rede Inducar, CRL (PT), Education Development Center (LV), Jaan Tõnissoni Instituut (EE). Thank you, Katja Greeson, for copy-editing the manuscript.



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Co-funded by the
Erasmus+ Programme
of the European Union

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Leading the digital transformation

1

The European Union has defined its goal of upholding safety, privacy, inclusion and democracy in digital transformation (DT). Several regulations, such as the Digital Services Act and Digital Markets Act (EC DSAP, 2021) encompass a single set of new rules applicable across the EU to create a safer and more open digital space. The impact of the current policy developments in the field of digital transformation on the European level cannot be underestimated. The Digital Services Act and Digital Markets Act will determine what platforms are (still) allowed to do and how the rules of the game of digital capitalism will work. The Circular Economy Action Plan (EC CEAP) suggests a right to repair. As a result of the way rules for Artificial Intelligence (EC New rules for AI) are developed and implemented, a market for data-sensitive and democratic innovation is emerging - a European way of dealing with AI or, at least, a European-dressed American way. How Europe defines and enforces the Next Generation Internet (Next Generation Internet Initiative, 2020) influences how free, decentralized, competitive, and accessible the Internet and digital single market inside and beyond Europe will be. The General Data Protection Regulation (GDPR, 2016) is another significant landmark that has positioned the EU globally as a region where digital transformation aims at asserting democratic principles and human rights.

Digital transformation affects all fields of human life, including political participation and decision-making. In the worldwide competition to advance and defend economic positions, digitalisation is expected to play a decisive role. Moreover, the economic transformation toward digitalisation is expected to make a key contribution to sustainable development. There is growing hope that science and technology can help solve global problems, but also fear that the digital economy can perpetuate — and even exacerbate — long-standing and recent environmental challenges.

In 2020, the developments around the COVID-19 pandemic cast a spotlight on the ongoing processes of digital transformation, which have advanced to a stage at which the platform economy, Artificial Intelligence (AI) and Big Data form foundations of everyday interactions; they are broadly applied and required and have become central pillars of a new digital economy. National governments and companies across Europe naturally have ambitious expectations regarding this development, partly since there is hope that an economic recovery will follow a greener and more digitalised path.

The EU aims to become a global leader in an ethical AI and Big Data approach, as expressed in the EU Commission's communication, the Coordinated Plan on Artificial Intelligence 2021 Review (EC COM(2021) 205 final ANNEX), and the 2020 White paper on artificial intelligence (EC White Paper AI, 2020), in continuation of the earlier Digital Agenda for Europe.

The European Strategy for Data (EC COM(2020) 66 final) is led by the vision of a balanced “European way”: “In order to release Europe’s potential we have to find our European way, balancing the flow and wide use of data, while preserving high privacy, security, safety and ethical standards”. In particular, this vision builds on a “single European data space”.

In the context of these progressive developments in the EU, our **DIGIT-AL** project has found that key topics are being negotiated at the European level often independently of national regulation and of technical discourses, which too often remain in isolated boxes such as regulating digital platforms, the circular economy, and data protection. Discussions often stay in the professional sphere of those affected, while a connection to the larger societal implications is missing. The four key policy objectives set in the 2021 Coordinated Plan on Artificial Intelligence (EC COM(2021) 205 final ANNEX, p. 6) have proven to be suitable for European development towards ethical and secure AI. However, they require a strong focus on implementation of the joint actions and removal of fragmentation of various initiatives in this direction: on the one hand, creating enabling conditions for AI development and making the EU a place for AI driven innovation and leadership, and on the other hand binding AI to individuals’ social good and social purpose. These developments need awareness of people and the critical and constructive reflection and proactive involvement of civil society and citizens in the implementation of these strategies. What the EU defines as social good in relation to health, crime, asylum and migration may not necessarily be in favour of human rights issues, civil society goals, etc.

Digital transformation is a development affecting multiple aspects of our everyday lives. Given the gradual, revolutionary nature of this transformation, it is not commonly evident how deeply this transformation affects everyday life. Individuals are generally not conscious of the enormous financial and economic efforts being undertaken by single companies, and there seems to be almost no linking of the momentous political shift taking place to maintain economic market positions. The large companies that are visible to the user on interfaces such as Google and Facebook, which dominate the discourse on digitalisation are only the tip of the iceberg working on a global scale in the fields of infrastructure, hardware, and software data extraction. In order to achieve a more complete picture of the Internet and the different paths toward digitalisation, we need education facilitating knowledge and an understanding of the diversity of centralised, platformised, free, open, not-for-profit and proprietary actors in the Internet. Since these developments transcend the national level, a sound political reaction is absent. A strong civil society response is also missing, since the topics are often overwhelmingly complicated, follow a complex narration and are reduced to technological aspects. Regulation happens, if at all, without public awareness, differently across European countries and often via transnational legal initiatives (e.g., the EU GDPR regulation). As digitalisation business models rely on the sound use of data (datafication), algorithmic processing of many data (Big Data) and the opportunity to monetise personal data for companies, the need for return on investment is a driving force. In particular, venture capital driven start-ups tend to follow this model decisively and, when in doubt, perceive violations of ethical principles or user rights as collateral effects and unavoidable complications. A lack of understanding of the data business models of the digital economy, of how states would like to make use of digitalisation and absence of public discussions and learning opportunities about the socio-political impact of digitalisation leads many adults to the impression that

digitalisation takes place behind a curtain of complexity. It cannot be the aim of democratic governance to get sound information about developments only in response to data breaches and scandals. Instead, we must invest in education that prepares the public broadly and, more specifically, civil society, to respond to these complex topics and to strongly advocate for the democratic and human rights dimension as part of the digital transformation.

Role of education

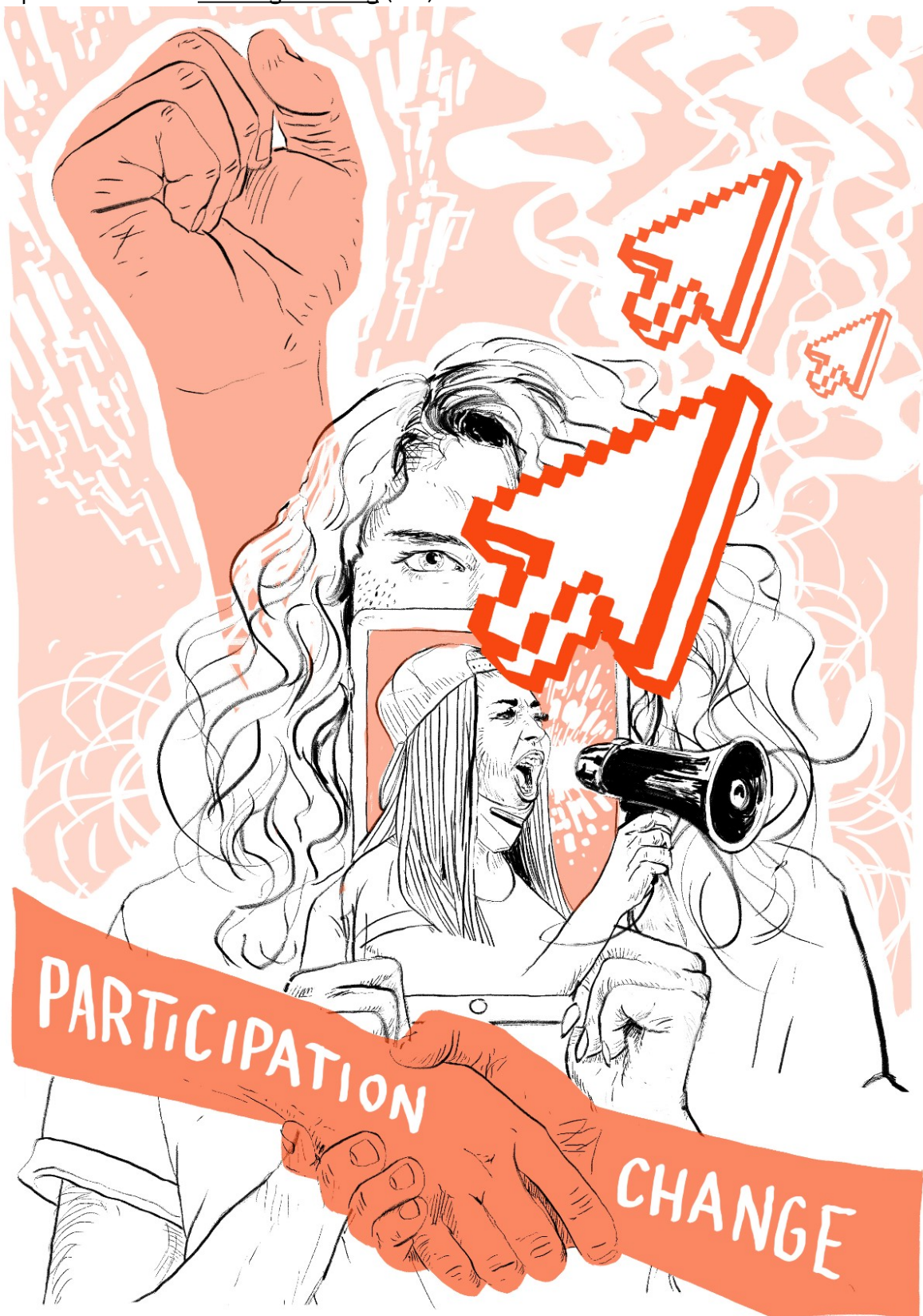
If most of the transformation that takes place is invisible, how can the curtain be lifted for the average individual? The purpose of Education for Democratic Citizenship and Human Rights (EDC/HRE) (CoE CM/Rec (2010)7) is to initiate and develop critical thinking and to be able to recognise opportunities for digitalisation in line with peoples' needs in democratic contexts. Various questions need to be discussed, since there are complex implications for equal rights, social rights and fundamental rights, the distribution of wealth, health and social benefits. There is arguable hope that digitalisation could be instrumental in achieving a more just and equal society.

EDC/HRE has the aim to strengthen the understanding of digitalisation's social impact, and accompany the discussions about different directions of digitalisation by emphasis on impact orientation. Digitalisation has shown that it might overcome social problems and injustice, however, there is also evidence of digitalisation reproducing and perpetuating the exploitation of labour and of the environment, and of structurally maintaining an unjust and discriminatory situation in the world.

One could certainly state that “in such a mess education plays a role”. Along with educational institutions at the national level, the Council of Europe and the European Union have already started to develop guidance to meet this challenge. Such initiatives include the digital competence frameworks (DigComp and DigCompEdu) (Carretero et al., 2017; Punie et al., 2017), the Digital Education Action Plan (EC EC SWD(2020) 209 final), the initiatives on digital youth work (EC Digital Youth Work 2018) and the various Council of Europe initiatives on education and youth work in digitalised worlds (Şerban et al., 2020; CoE DCE). All these provide political orientation for action. Vast initiatives in the entire field of lifelong learning are testimonials for the ongoing efforts being undertaken in various fields of education, training and youth to pave the way for holistic processes of lifelong learning.

There are several questions that emerge in relation to education and learning. These relate to the governance of digitalisation, the tools used, the complex horizons tackled by education—technically, literally and socially—and the entry of Artificial Intelligence into the field. These challenges raise questions that pertain not only to human rights and democracy but also require the specific expertise of democracy and human rights education to formulate and ask questions, to define challenges, and to provide means for learning and actively shaping this ongoing transformation.

Once again, everyday cultural realms of the digital can be linked to questions that are surprisingly similar to those outside the digital realm. Where do citizens meet the digital? What represents a digital public space? What are new spaces for education, dialogue and citizenship that respect and foster diversity and collaboration? If digital space provides new opportunities to exercise citizenship, to learn, to form and express personality and to interact and collaborate, digital transformation and digitalisation should become vitally important fields of Lifelong Learning (LLL).



Felix Kumpfe/Atelier Hurra

Human rights and democracy in the digital world

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Recommendations

- Exercising active citizenship and expressing democracy in digital environments must be guided by the same principles as in non-digital environments: inclusion, diversity, tolerance and human rights. Digital transformation, particularly, should not widen inequality by leaving behind those already disadvantaged in some way through new factors of exclusion. The focus of civil society should shift from attention to specific digital platforms or services (and a mere user perspective) to the digital ecosystem and the impact of democracy and human rights in digitalisation – toward a systemic perspective.
- Supporting Civil Society Organisations (CSOs) should play an important role in the enactment of an open data and open source policy. CSOs are an honest broker and an important connector of citizens and policy, in holding the technical development accountable to human rights principles and as advocates of fundamental democracy-related principles like openness, freedom, free and unconditional accessibility and human-centred Internet services and structures. CSOs are also intermediate between citizens and established educational institutions and as partner of education they are a *new space* for new non-formal or informal learning offerings and experiences.
- The focus of civil society should shift from attention to specific digital platforms or services (and a mere user perspective) to the digital ecosystem and the impact of democracy and human rights in digitalisation. In order to provide support, UNESCO-defined ROAM-X indicators (UNESCO ROAM-X) provide a helpful tool for creating a digital transformation following human rights standards and enabling democratic governance. It is important that CSOs become active actors in providing assessment of internet universality indicators in European countries.
- It is imperative that governments provide wide internet coverage, equipment and IT maintenance services at affordable costs, but at the same time ensure that no compromises are made on civil rights and human rights.

- When government services and corporate networks operate through Internet platforms, citizens' use of these platforms need to be ensured and made accessible by the governments and employers. It is a task for EDC to ask for these provisions.
- Architectures and designs of ICT and platforms in line with the European strategy should be expanded: FAIR principles, interoperability, rights-sensitivity and non-centralisation (**Go Fair**) should apply. Additionally, the digital transformation to accelerate research and to engage the power of machine analysis at scale should be taken advantage of, while ensuring transparency, reproducibility and societal utility. Data and other digital objects created by and used for research and practice need to be findable, accessible, interoperable and reusable (FAIR) – a demand for all activities and programs supported from European funds activities.

Is it all digital? Digitalisation is a global process and it affects all spheres of human rights. It is not something happening in a sphere outside our shared experiences but it is deeply embedded in and influencing our lived realities.

Inclusion and diversity

Digitalisation is more than a technical process. It affects all spheres of private and social life. Digital transformation affects core questions of democratic living together, preventing digital exclusion and marginalisation, embracing diversity and asserting human rights. The human rights principles should become core standards in assessing digitalisation.

Openness, availability and free choice

The dominance of large companies often partitions users into insular and incompatible software, services and devices –where interoperability is only a wishful desire. Even worse: whole societies are accessing the digital spheres only behind fenced networks in various regions of the world, which poses a global danger to free and unconditional access and usage of the Internet. Lacking net neutrality (limiting Internet traffic or blocking content), affordability (access to Internet and hardware), and interoperability (closing in of citizens in proprietary sub-ecosystems) are critical aspects already identified by relevant stakeholders. The EU and the states as regulators have a crucial role to play in keeping the Internet open by respecting the aforementioned principles through balancing forces between non-central and central, interoperable openness and proprietary closure, and commercial and non-commercial interests. Further, digitalisation often treats big companies preferentially and under-emphasizes the crucial role of small businesses for a competitive and vivid digital economy. Innovation, broad access to infrastructure and human-centred solutions emerge from this balanced digital market.

Network neutrality: the principle that Internet service providers (ISPs) must treat all Internet communications equally, and not discriminate or charge differently based on user, content, website, platform, application, type of equipment, source address, destination address, or method of communication, also: net neutrality. **S:** [Wikipedia](#)

Interoperability: Ability of a system to exchange with another system and use data provided by the other system on the basis of a shared standard and in absence of central control.

Affordability: The ability of individuals to factually access and use hardware, software and the Internet and to participate in the digital sphere on an everyday basis.

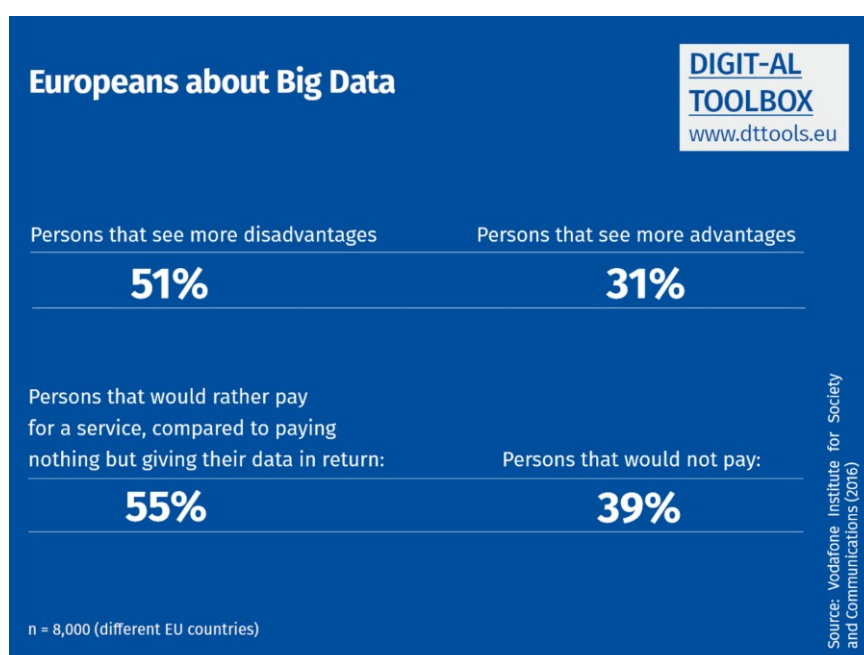
Platformisation and datafication

The currently predominant economic model of digitalisation has developed a new governance principle which has impacted the classical social contract and employment relations as foundations of the social model of democratic societies. Platformisation (the reorganisation of cultural and economic practices) does not necessarily presume a shared interest and is challenging the idea of social partnership. It instigates new forms of employment and of collaboration between individuals and between individuals and companies and needs commonly shared regulatory responses.

Datafication: Extracting personal data from user interaction, processing it digitally and turning it into (added) value.

Platformisation: Penetration of the infrastructures, economic processes, and governmental frameworks of platforms in different spheres of life. Reorganisation of cultural practices and imaginations around platforms (Poell et. al, 2019, p.6).

Datafication of labour and the workspace is another aspect that needs attention of the social partners. It also affects citizens in their role as users of digital services in other social roles. The term “surveillance capitalism” coined by S. Zuboff describes the economic model to acquire behavioural data, transform it into behavioural models and to extract unilateral economic value out of these data. As such, it is in its pure form, responsible for many of the problems that citizens connect with the digital transformation.



A European way of digitalisation needs to re-define the rules of data capitalism. However, it needs also to acknowledge that never before have such large volumes of data been generated, collected and networked and that this data can also be used for the common good, as intended by some European data initiatives, which would make it easier to analyse and work on social problems and address their underlying causes. To do so, however, NGOs and their partners will need the necessary tools and institutions in the field of education and to develop a thorough understanding of datafication.

Open and free data and software

From the perspective of human rights and democracy, legitimate interest of the public towards a model of open data governance in Europe can be derived. It is important to have non-commercialized public spaces on the Internet. The for-profit design of popular, privately-owned digital spaces is corrosive to the social fabric and poses a danger to people's ability to collectively identify and solve social problems. In order to apply the UNESCO defined ROAM-X indicators, it is important to invest in public open source digital spaces. It is also vital to support free open for-profit and also non-profit technology projects that are freely accessible and build open-source code. Such projects need to be supported to reach sustainability and access public funding and other support. Similar to other public-benefit investments, these projects have the ability to engage a wider pool of individuals who can use the tools to meet their information needs and to participate and engage in an accountable and transparent manner. Open data should benefit every individual. This data should be findable (easily retrievable as a whole, e.g., constantly available online), freely accessible, interoperable and reusable (FAIR principles), and, in order to benefit as many citizens as possible, also open and machine-readable – making digitalisation the European way work, regulation is needed.

FAIR Data

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The FAIR principles are playing an important role in the regulatory discussions on European level.

Findable (i. e. identifiable, including metadata, searchable)

Accessible (i. e. retrievable metadata, open and free protocols)

Interoperable (i. e. possible data exchange and re-use, open and established standards)

Re-usable (i. e. clear and enabling licences)

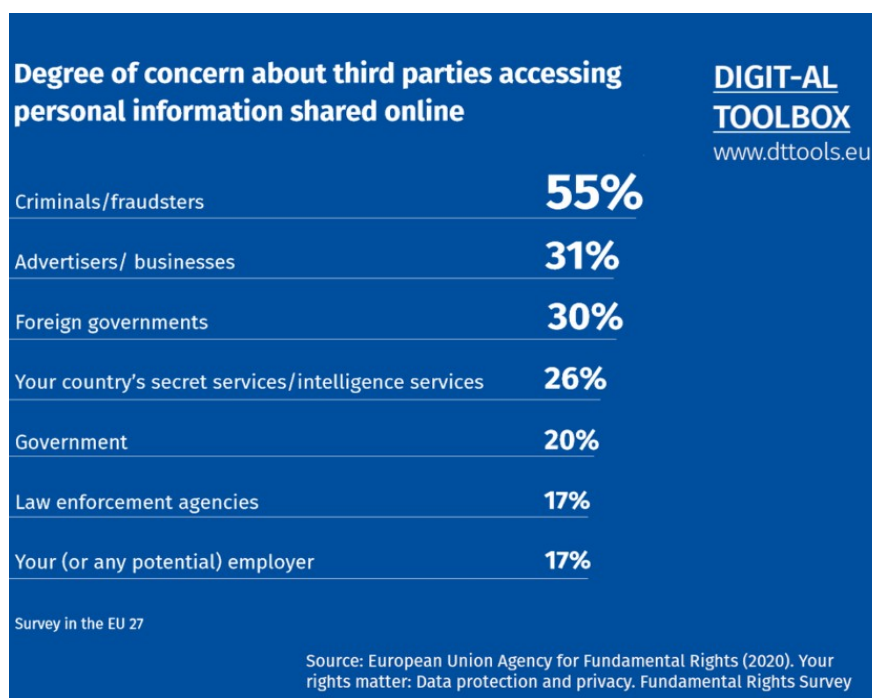
Source: Wilkinson, M., Dumontier, M., Aalbersberg, I. et al. (2016). The FAIR Guiding Principles for scientific data management and stewardship.

Safety and privacy

As increasing amounts of data are generated and networked, it is critical, from a human rights and democratic perspective, that citizens/users can effectively control and protect their data themselves (exercising the right to informational self-determination). This applies not only to European NGOs and their local partners, but also to companies and governments. NGOs and their partners increasingly need to take this into account in their operational processes in order to find common solutions to data protection issues within their own organizations.

Accountability

The design of technology is often biased, and does not follow democratic, egalitarian or environmental values. There is a need for regulation that defines limitations and provide criteria that the technological establishment should follow. Approaches like human-centred design need to be implemented consistently and accompanied by social actors. Service providers need to be held accountable and to support their customers' users in order to gain an overview, exert control and claim their rights in an efficient way, from the perspective of the user.



Sustainable and affordable hardware

The ability to repair, reuse and afford hardware are pillars of a digitalisation compatible with the idea of a circular economy, including fair and environmentally friendly production. Affordability is a matter of course. Full participation is full access to fully functional devices.

Ecological footprint

Energy hunger and raw material depletion are accompanying digitalisation and boosted by streaming and platform models of collaboration. Citizens and platforms need to reflect

on their usage of Internet traffic, develop low-traffic strategies and should consider setting incentives for low-traffic usage of the Internet. The current developments in net politics point to a different direction: more and more intensified ubiquitous computing.

Video Streaming

Video streaming is a tremendous driver of data demand, with 63% of global internet traffic in 2015, and is projected to reach

80% of global internet traffic by 2020.

It is necessary to spend

5h writing and sending emails without stopping

(i.e. 100 short emails and an attached document of 1 Megabytes) to generate an electricity consumption analogous to that generated by watching a

10-minute video.

Source: The Shift Project (2019). Lean ICT: Towards digital sobriety.

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Practice

Bellingcat: based in Amsterdam, presents itself as the home of online citizen investigation. They apply innovative approaches to using publicly available data and citizen journalist analysis. They have been particularly significant for advancing narratives of crime and human rights abuses. They have produced investigations on these issues in coordination with partners and allies and expanded their training so that a growing corps of citizen journalists is poised to pursue these stories.

<https://www.bellingcat.com/>

Initiative freie Messenger: Free messenger service initiative, which intends to provide a neutral introduction and overview of the topic of 'free messengers' - not only for interested beginners, but also for advanced users and technology experts. By providing background information on why free messengers are useful, the aim is to improve 'communication competence'. This means that 'digital' self-responsibility, freedom and independence are to be promoted. <https://www.freie-messenger.de>

Mozilla Internet Health Report: The Internet Health Report combines research and stories in publications that explore what it means for the internet to be healthy. In collaboration with inspiring thinkers around the world, they identify research and solutions across five key issues: decentralisation, privacy and security, openness, web literacy, and digital inclusion. <https://foundation.mozilla.org/de/insights/internet-health-report/>

Aims of learning the digital

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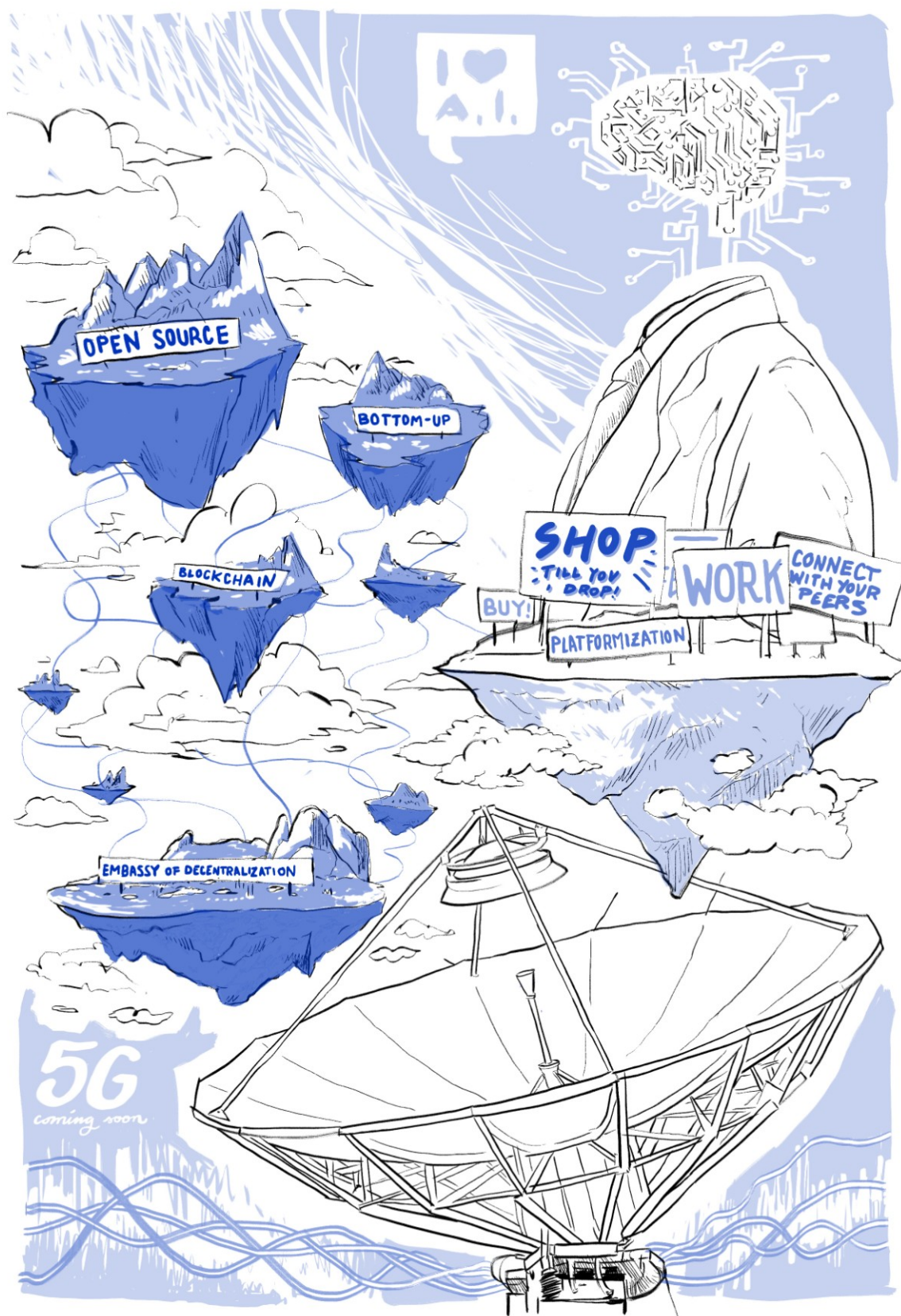
Recommendations

- Providing education and learning about digitalisation and digital transformation should aim at raising consciousness – theoretically and practically – about the conditions of a healthy, thriving economy and ecosystem. Education about digitalisation should focus on increasing environmental and social sensitivity both at the local and global level.
- Teaching technological knowledge and skills in the sense of educating about the digital should serve as a tool to support the local and social development of communities and citizens in sustainable ways (sustainable and social innovation), and should not be driven only by the needs of the commercial sector. Becoming technologically educated should represent a complex of skills, knowledge and attitudes, the core of which should be related to ethics, sustainable living and human rights values.
- Similarly, the ethical debates in education and learning should not ignore the profound aspects of the technological transformation and its effects on society, including the use of ICT in country commitments to deliver on the EU climate objectives and achieve sustainability.

Following the model the doughnut economy¹, digitalisation should be embedded in larger policies for sustainable living and wellbeing and function as a safe and just space for humanity, rooting progress in social foundations and preventing development from overshooting the ecological ceiling.

It is important for education in digital transformations to support understanding about how digital processes and infrastructures impact the environment and social foundations. Manufacturing and the use and disposal of digital equipment, for instance, create an increased demand for energy, produce toxic waste and contribute to air pollution.

1 In her book, Doughnut Economics, Kate Raworth argues why it is time to revise our economic thinking for the 21st century. She sets out seven key ways to fundamentally reframe our understanding of what economics is and does. Along the way, she points out how we can break our addiction to growth; redesign money, finance, and business to be in service to people; and create economies that are regenerative and distributive by design.



A digital smart economy does not necessary produce no waste, nor is the footprint less exploitative in nature. The question of digital sustainability includes value-sensitive design of ICT, an inclusion of the environmental and social costs of ICT, consideration of the way individuals and societies produce and use technology, and how they manage energy and (digital) waste.

Digital sustainability as a guiding principle: socially, economically and ecologically.

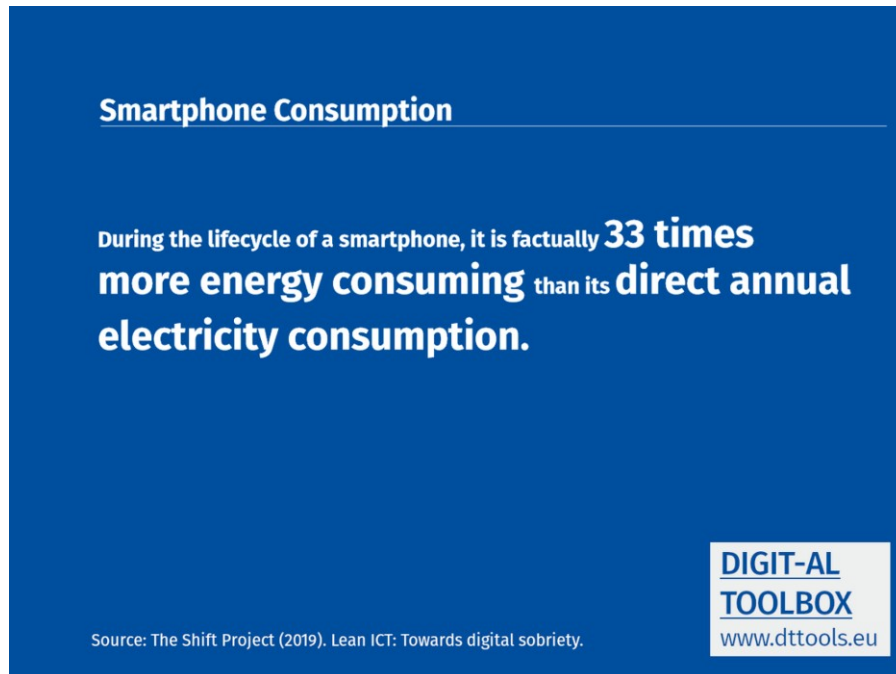
Digital sustainability relates to questions of accessibility and of universal provision of equal fundamental rights, of digital goods and services, of societal benefits ensured via open sources, open codes and transparent algorithms. As such, it provides a vantage point from which you can take a good look at various aspects of digitalisation. . In terms of global solidarity and fairness, there is a growing understanding that a healthy economy does not signify endless growth but rather an economy that ensures an environmentally safe and socially just space, which includes internationally agreed upon minimum social standards for all, as identified by the world's governments in the Sustainable Development Goals in 2015. There are social and planetary boundaries, which people can neglect by exerting pressure on the Earth's life-supporting systems on which they depend, such as a stable climate, fertile soils, and a protective ozone layer. Also, the digital economy exerts such pressure for materials and usage of equipment.

When it comes to datafication, people in different regions of the world not only lack opportunities to access new technology in a FAIR way, but they may become unintended subjects of datafication, fuelling the data industry in Europe, North America and the technological frontrunners in Asia with personal data. These aforementioned key principles of fair, rights-sensitive and just digitalisation need also to guide EU external affairs with other regions of the world.



The EU economic approach toward sustainability is the ideal of a circular economy, “where the value of products and materials is maintained for as long as possible”. Waste and resource use are minimised, and when a product reaches the end of its life, it is reused to create further value (**EC GROW Sustainability**). In the Circular Economy Action plan, the EU identifies digitalisation as a positive factor, which “can increase efficiency, minimise the amount of materials being wasted, and track the recycling of materials and equipment better.” (**EC-DG Environment, 2020, p. 11**). However, we need to be aware that many of the

resources exploited, used and even wasted in a non-sustainable way, are directly and indirectly linked to digitalisation, i.e., energy consumption, and ways to process and store data, production and usage of hardware. EDC/HRE can help to raise awareness and instigate a systemic and critical thinking about processes, production and consumption and how these can contribute to the idea of a circular economy, or even help the idea of a circular economy to break through.



Smartphone Consumption

During the lifecycle of a smartphone, it is factually **33 times more energy consuming** than its **direct annual electricity consumption.**

Source: The Shift Project (2019). Lean ICT: Towards digital sobriety.

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Under the condition of ever shorter product cycles, sometimes artificially evoked by lacking software support and fuelled by inefficient software and intensive marketing for new products, the material value and the value of grey energy in IT products even seems to decrease. Education can support counter-strategies: Particularly repair(ability) and the popularisation of the future EU right to repair, refurbish, reuse and resource efficiently are principles which can be further promoted, need to be learned and applied in everyday life and consequently ask for fair and sustainable conditions in production. Legal and political incentives need to be created to give these sustainable principles more relevance, in addition to the idea of recycling “old” hardware.

While we in Europe discuss global dependencies more from the perspective of technological sovereignty, a European aimed for human-centred way of digitalisation should also consider human conditions in the global chains of collaboration.

The new Conflict Minerals Regulation (EC Conflict Minerals) and the activities in the European Parliament and European Commission – Towards a mandatory EU system of due diligence for supply chains (EPRS, 2020) – are especially relevant for education about digitalisation and aim, at their core, to improve living and working conditions. However, a global perspective on digital inequalities should also take the software industry into focus, the asymmetry in ownership of worldwide internet infrastructures and global discrepancies in internet access and affordability.

Governance

The perspectives of digitalisation benefitting democratic governance processes, of enabling the individual to learn about global interconnectedness, and of contributing to ecological and economical sustainability enable the generation of local impact with global dimensions. A democratic governance of digitalisation has an inherent need to enforce local, non-centralised strategies as a path to smart and sustainable growth. Governance in this regard applies specifically to 'local' solutions, enabling learning and enforcing subsidiarity of democratic practices.

Internet governance and a democratic governance of digital transformation from a democratic perspective requires citizens' control, political debate, authorisation, mandate and acceptance of regulation as a basis, but also as an expression of meaningful democratic participation. Since democratic participation cannot be taken for granted, neither in our analogue nor in digitally co-determined societies, it needs to be actively sought, learned and trained. A democratic process of digital transformation is most dependent on active democratic actors. In a complex societal-technical environment such that digitalisation provides, there is a need to invest in equipping core protagonists of education and training on all levels to develop advanced capacities to shape this learning.

Practice

The Human Power Plant: investigates the possibilities of human energy production in a modern society. In a first case study, the plan is to convert a 22-floor vacant building on the campus of Utrecht University into an entirely human powered student house. This project was developed by the University of Utrecht in collaboration with lowtechmagazine, https://www.humanpowerplant.be/human_power_plant/about.html

Initiative Digital Sustainability: certification of initiatives, processes and organisations, according to the principles of digital sustainability, <https://digitale-nachhaltigkeit.net/>

Internet of Waste: Stupple-Harris, L. (2020). Internet of Waste. The Case for a Green Digital Economy. Next Generation Internet initiative by the Digital Single Market of the European Commission (NGI), Nesta, 2020, <https://www.nesta.org.uk/report/internet-waste-how-europe-can-make-internet-green/>

The Green Digital Charter: A declaration committing cities to working together to deliver on the EU climate objectives through the use of Information and Communication Technologies (ICT). It therefore promotes progress in tackling climate change through the innovative use of digital technologies in cities.- <http://www.greendigitalcharter.eu/greendigitalcharter-2>

Education with a human rights-based approach and democratic values in digital societies

Recommendations

- Human rights considerations should be core in policies related to the digital economy, education about the digital, and digitally facilitated social development. It is important to recognise human rights as a feature of the digital transformation, in the same way that rights are a key feature of our everyday existence: safety and security, health and welfare, being treated with respect and as an equal, exercising basic freedoms to speak, associate, practice and learn as people choose. Human rights are the core ingredients of life. Following Human Rights principles means following clear standards to hold decision-makers and governance accountable.
- Supporting people in developing capacities to navigate digital transformation has to be done through such a human rights-based lens. Efforts should be made to empower citizens to exert social and political influence through digital means, control their own data, become aware of their rights as digital citizens, and to participate in civic life and democratic processes.

In a situation of worldwide competition with regard to the digital transformation of economy, public and private services, goods and cultural practices, the recognition for human rights and democratic principles is evident. However, it still needs to be fought for, increased and actively sought. The market alone cannot regulate, and the state alone should not, as can be seen in the excessive use of using digital technologies to manipulate parts of the world societies by state parties and private actors. This is why supporting the EU proposal of a European way of the digital transformation recognises the need for accountable development, in which informed and active citizens, as well as adequately equipped civil society have an important role to play.

The UNESCO defined Belem Framework of Action, (UNESCO, 2011) gives adult education worldwide a crucial role in supporting adult learners in developing basic competences to enable them to participate, navigate and benefit meaningfully from digitalisation. Adult education institutions including NGOs working in the non-formal sector can have a specific advocacy role beyond education itself: They can facilitate the spread of new ICT among marginalised groups and promote decentralisation such as location-independent digital services. NGOs can act as critical observers holding public authorities accountable for regulation of private service providers so as to protect the public interest. Also, it is a CSOs role to develop counter-strategies to negative developments, e.g., manipulation, intimidation, and false information, which restrict digital citizenship.

Artificial intelligence

Artificial intelligence (AI), a wide-ranging branch of computer science concerned with building smart machines that perform tasks, has become increasingly involved in services that affect the everyday lives of people. Since the tasks that AI is being built to perform

have typically required human intelligence, it is creating a paradigm shift in virtually every sector of the industry. For citizenship educators, AI has appeared as a new player shaping the field of civic interaction and education. Although not necessarily designed and trained to be harmful to people, it is the potential for biased decision-making that may have negative consequences for individuals and broader society. Again, it is intersectional discrimination which may harm those already in vulnerable positions. Human rights education and democratic accountability provide a core frame to prevent misuse of AI and demand proper, adequate standard setting and regulation. Ethics guidelines for trustworthy AI (EC-AI-HLG, 2019) should be discussed and developed not only among experts but also among those who are objects of the process. Given that AI is a whole ecosystem, that brings the benefits of technology to citizens, businesses and public services, it is important to build trust by providing evidence that democratic values and fundamental rights such as human dignity and privacy protection are grounded in the ethical design and cautious management of AI. As such, it is increasingly important to human rights educational praxis to develop awareness for the rights and ethical standards of using AI, but also to prepare for education and learning about where AI itself might become part of educational provision.

Criteria for Trustworthy AI

Trustworthy AI has three components: (1) it should be lawful, ensuring compliance with all applicable laws and regulations; (2) it should be ethical, demonstrating respect for, and ensuring adherence to ethical principles and values and; (3) it should be robust, both from a technical and social perspective, since, even with good intentions, AI systems can cause unintentional harm. Trustworthy AI concerns not only the trustworthiness of the AI system itself but also comprises the trustworthiness of all processes and actors that are part of the system's life cycle.

The seven key requirements are:

- 1 Human agency and oversight** Including fundamental rights, human agency and human oversight
- 2 Technical robustness and safety** Including resilience to attack and security, fall back plan and general safety, accuracy, reliability and reproducibility
- 3 Privacy and data governance** Including respect for privacy, quality and integrity of data, and access to data
- 4 Transparency** Including traceability, explainability and communication
- 5 Diversity, non-discrimination and fairness** Including the avoidance of unfair bias, accessibility and universal design, and stakeholder participation
- 6 Societal and environmental wellbeing** Including sustainability and environmental friendliness, social impact, society and democracy
- 7 Accountability** Including auditability, minimisation and reporting of negative impact, trade-offs and redress

Source: Independent High-Level Expert Group on Artificial Intelligence (IHLEG, 2019)

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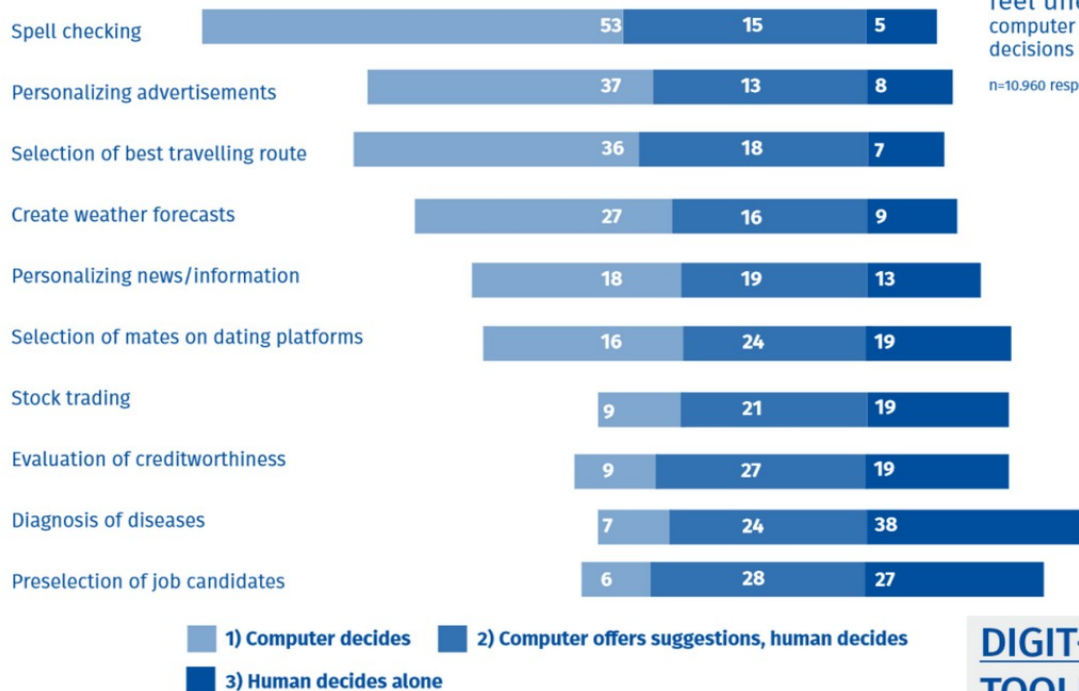
AI is used very differently across sector and by country e.g., in border control, migration, security or social welfare systems (health data, automated assistance in social service delivery and legal advice). It is often intended to improve public services (assistance in public administration, police tasks, local space surveillance, managing local infrastructures and environment). It is evident, that a constructive and balanced discussion is lacking. Since these examples are all under public control, it is the responsibility of public authorities to instigate a fair and rights-sensitive dialogue, implementation, and control of such measures. The same goes for private enterprises and their application of big data and AI-

driven predictive models, such as large platforms, insurance companies, and private applied research. Lastly, one path to fair and human-centred use of AI in Europe may be to support activities for Open AI and Open Data.

Acceptance of Algorithms in the EU

For which of the following tasks....

- 1)... would you find it acceptable for a computer to make decisions on its own?
- 2) ... would you find it acceptable for a computer to make suggestions, but only if a human makes the final decision?
- 3) ... do you think a human should decide alone without any suggestion from a computer?



64%

feel uneasy if a computer would make decisions about them.

n=10.960 respondents (2018)

Source: Bertelsmann Foundation, Gütersloh 2019. What Europe Knows and Thinks About Algorithms. Results of a Representative Survey.

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The OECD- Working Paper Hello, World! Artificial Intelligence and its Use in the Public Sector (Berryhill et al., 2019) identified risky technologies, in particular workplace tracking and biometry. The identification of these technologies as risky must be accompanied by increased efforts to raise awareness of individuals who are particularly affected. Further, opportunities for independent learning that are not connected to an individual's employer must be guaranteed for all qualification profiles and in all EU countries. While the development of guidelines for the ethical use of AI are underway, the educational aspects are not yet reflected in the European training and education sector. We cannot, however, encourage employees and learners to expose themselves to technology, whose impact and consequences they may neither understand nor influence.

Practice

Seminar “Fellow Robot? How Artificial Intelligence will change the world of work”: The spectre of artificial intelligence (AI) is haunting us and is expected to make 25 percent of jobs redundant in the next few years. Or: AI will ensure that certain jobs no longer need to be done by humans and we will have more time for other things and/or more skilled activities. Both assumptions narrow down the challenges that will be possible with AI. This educational seminar will provide insights into the world of AI and, together with experts, work out the radical changes in companies, businesses and authorities and try to measure the future role of people in the work process. The seminar will also explore the question of what artificial intelligences actually have to learn in order to be able to cope with the complex communication and interaction processes that are an important part of work processes alongside the actual specialist knowledge. Deep Learning as a central principle of AI will be subjected to a critical examination.

<https://www.mariaspring.de/event/kollege-roboter-wie-kuenstliche-intelligenz-die-arbeitswelt-veraendern-wird-2/>

Panelfit: Participatory Approaches to a New Ethical and Legal Framework for ICT: Technical evolution in the ICT field and its impacts on the protection of human rights lead to changes in the EU regulation opening a new scenario. Stakeholders, policy makers, and end users must adapt to them as soon as possible. This, however, might be hard. Panelfit, a European Commission research project, is firmly committed to facilitating this adaptation process. <https://www.panelfit.eu/>.

How Normal am I is a web-based exploration of surveillance algorithms supported by the European Union through the project Sherpa (Shaping the Ethical Dimension of smart information systems). <https://www.hownormalami.eu/>

Participation in society – living the digital

Recommendations

- Digitalisation, in Europe needs to be governed democratically, ethically, participatory and consciously on all levels – in Europe, in the member states and on local level. Europe with its digitalisation approaches shares a specific responsibility to advocate and uphold these principles.
- Digital technology can hold great value for human rights and democratic development when democracy and human rights aspects in digitally co-shaped societies are constantly parts of public discourse and also renegotiated with and among citizens. This process of renegotiation is a fundamental task for citizenship education.
- Literacy to acquire, interpret and publish information, and to subsequently use information for civic action, is becoming increasingly relevant for citizens. Especially data literacy and data-driven investigation/exploration should not be treated as a priority for IT specialists but rather, be included in education broadly, so that more citizens might benefit from digitally available information.
- Education about online collaboration should aim to reach learners as civically engaged persons, as producers of digital content and parts of social groups. It should include approaches such as digital self-organization, e-petitions, participation in digitally-facilitated (public) planning processes and digital activism, rather than being limited to overly-narrow workplace-related learning.

The democratic quality of digitalisation can also be measured by its impact on social and cultural participation of individuals and groups, in particular vulnerable groups.

Democratic and digital

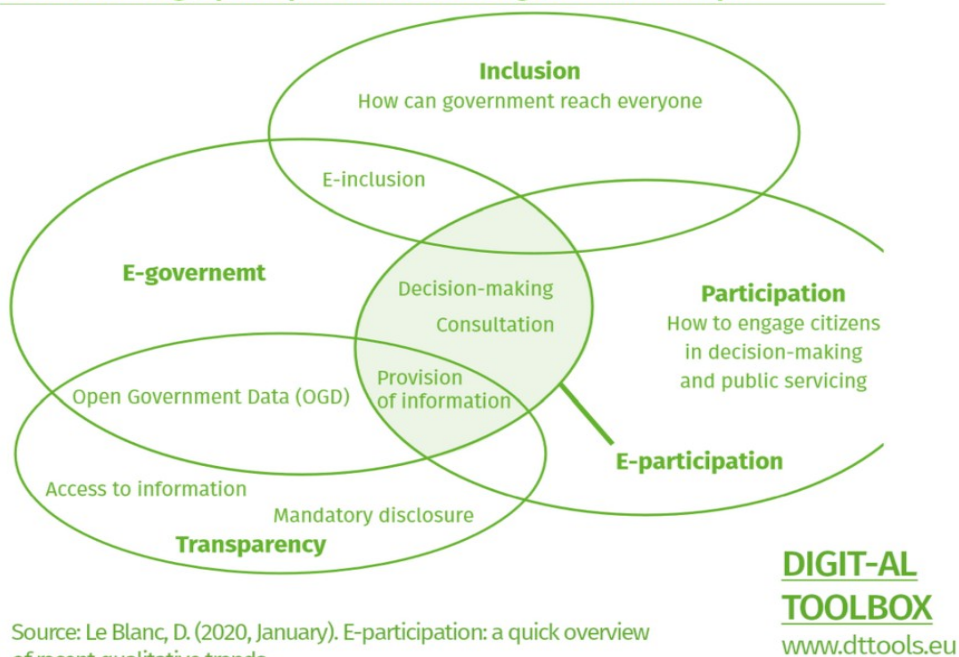
Through digital technology, citizens might gain new opportunities for association, for empowering, informing and investigating, and for defining and pursuing their democratic goals, creating content, connections and platforms. They can use secure communications to defend and promote their opinions and to assert their rights and they are enabled to ask for proper use and collection of data serving the citizens' and communities' best interests and purposes. But there are also examples of the opposite: Digitalisation used as an instrument for predicting and limiting human behaviour, creativity and social collaboration, or even to steer it in a certain direction through applied psychological behaviourism, by alienating citizens from their personal data, or limiting access to socially relevant statistics and information. Furthermore, digitalisation plays a crucial role in oppressing individuals and groups and regulating/limiting their basic human rights in more and more countries.

Digital technology can support the transition towards a more just and equal society by predicting and preventing human rights violations. Particularly, digitalisation has made information more accessible in democratic societies – from availability of public data to access to research information and to a plurality of sources, opinions and social groups.

Beyond data, digitalisation also provides infrastructure for civic self-organisation and communication. The learning about these tools and instruments can and should include a reflection about appropriate technology and how they enable informed decision making.

In its communication on the European Democracy Action Plan, the EU expresses a broadly negative picture of digitalisation related to democracy. However, it also addresses the member states “support and reinforce civil society capacities at both national and local level and involve civil society organisations in the partnership with the different levels of public administration, including by building a deliberative democracy infrastructure” (EC COM(2020) 790 final).

Relations among e-participation and selected governance concepts



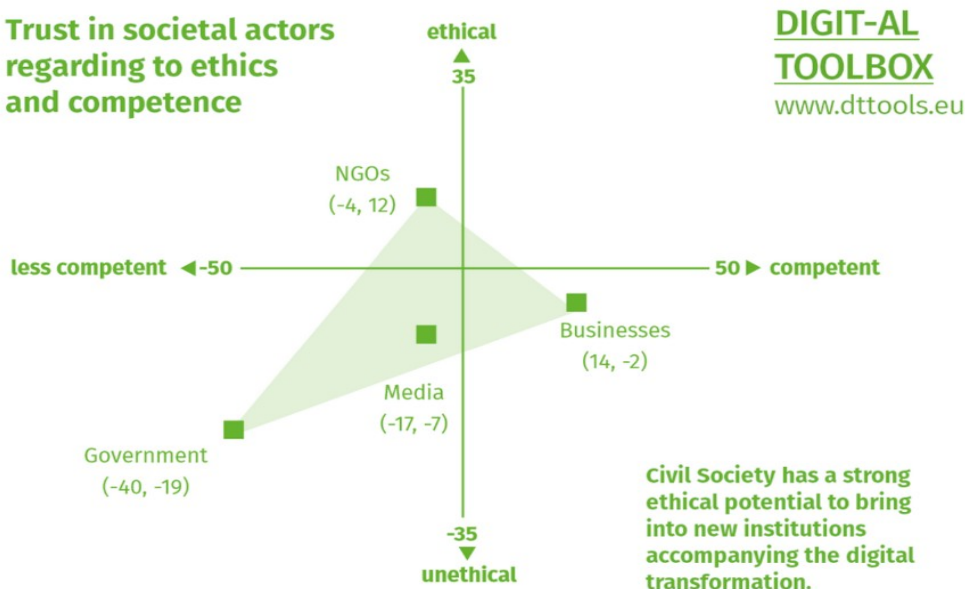
Also, beyond their direct relation to the political system, NGOs need more attention as actors in digitalisation policies. There is particularly a need to develop models for NGOs on how to operationalize digitalisation for their organisations’ outreach and purposes. New fields of activity are emerging, including digital citizenship, use and access of digitised services of information and communication technologies, but also, increasingly, to evaluate and work with data. There is a great and widely unknown potential for making use of key technologies like Big Data, additive manufacturing, blockchain, cloud services, and the Internet of Things (strategically, not just for basic office processes) (Edinger-Schons et al., 2020).

Therefore, NGOs need to more strongly address collaboration with the science sector but also with companies, such as communication providers, start-ups or social media platforms, since they have access to data, infrastructure and knowledge that are becoming increasingly a feature of work for NGOs. In forging new links between NGOs, businesses and academia, we might also contribute to democratic embeddedness of digitalisation processes and social innovation and help civil society gain the necessary competence to position themselves in the discourses on digitalisation and within its competing positions.

One approach is that of ‘citizen science’, providing manifold examples for digitally enhanced collaboration between citizens and science.

Digitalisation fosters complex interactions and transactions across various arenas of work, life, private, social and public life. In a seemingly overcomplex and increasingly dense information and datafied environment, characterised by lots of different intentional and unintentional transactions and a galloping increase of efficiency, it is foundational that individuals gain and maintain oversight in order to participate. As such, there need to be efforts made to focus on systematic education of the digital.

Trust in societal actors regarding to ethics and competence



No institution is seen as both competent and ethical.

Source: Edelman Trust Barometer 2020

Digitalisation requires lasting and continuous investment in vocational education and training, since continuous reskilling becomes a more complex and non-linear task related to investment of time and selection of content. According to UNESCO’s Recommendations on Adult Education and Learning (RALE), it is specifically the third pillar of adult education and learning that emphasizes learners need to develop capacities related to health, culture, personal growth and politics – dimensions, increasingly important for mastering complex challenges in the transforming digital world.

Practice

Decidim: An example of technology becoming instrumental for increased citizen participation are platforms like Decidim which helps citizens, organizations and public institutions self-organize democratically at all scales. Such platforms facilitate citizens' initiatives and consultations and stimulate deliberation, collaboration and decisions with thousands of people participating in real time. Such technology is offered free and safely with democratic guarantees. <https://decidim.org/>

Citizen science: An 'umbrella' term that describes a variety of ways in which the public participate in science. The main characteristics are that: (1) citizens are actively involved in research, in partnership or collaboration with scientists or professionals; and (2) there is a genuine outcome, such as new scientific knowledge, conservation action or policy change. Citizen science takes place in diverse fields, including ecology, astronomy, medicine, computer science, history – and many more. And citizen science can happen at a range of different scales – from local projects to continental and global scales, and from short projects to those that occur over decades, <https://ecsa.citizen-science.net/>

Activism & Participation Handbook: Social movements transform (digitally) the idea and ways of active participation. The Handbook underlines the relevance of both online and offline forms of participation in a world where (hack)tivists and movements play an increasingly major role in local communities and in global processes. From the tech universe to social feminist organizations, movements are highlighted, which have mapped out an important path in empowering citizens and brought citizens' voices into the public. The brochure concludes with some reflection about how participation will change in the future and about the necessary competences for participation of citizens under the conditions of the (digital) transformation age. <http://dttools.eu/pdf/digit-al-io1-activism.pdf>

Adhocracy+: A project from the NGO Liquid Democracy which makes digital democracy more accessible. adhocracy+ is simple, free of charge and its code is under Open Source License (APGLv3). With adhocracy+ one can easily set up a participation process for NGOs, communities, citizens council or political work. adhocracy+ offers a wide range of participation modules. In total, all 9 current modules of Adhocracy are used. The modules include: Brainstorming, brainstorming with map, idea competition, idea competition with map, text discussion, survey, participatory budgeting, prioritisation and even interactive event. <https://adhocracy.plus/>

Digital transformation through lifelong learning

4

Guiding thoughts and recommendations

Since digital transformation affects all people at all ages and across economic, political, social and environmental contexts, it requires a holistic and lifelong learning approach to assist learners in developing capacities to acquire digital competences. As such, Europe's educational institutions should facilitate the development of creative integrated approaches of learning digital transformation—approaches accessible and applicable for people from various backgrounds and in various contexts, which apply a democratic citizenship and human rights perspective.

These processes should go beyond the spatial context of a seminar room, a MOOC or other digital-only space. Holistic learning requires a design of learning that connects the elements of digital and presence learning and experiences collected across different social roles, and promotes collaboration between different fields and sectors of learning.

It is important to assist learners in exploring relevant skills, including technical and vocational skills for employment, decent jobs and entrepreneurship. Such education and learning in digital transformation is a core aspect for reaching SDG 4: “Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all”, in Europe and worldwide.

Education through digitalisation in the form of digital education has to support learners in developing a human rights perspective when applying, understanding and using digital technologies. Digital technologies have a huge influence on citizens' lives, with consequences for freedom, safety, and their role in society. Technology impacts human rights, such as freedom of speech and association, and freedom from harassment, exploitation, intrusion of privacy, violence, and human dignity, which is protected by the European Charter of Fundamental rights as inviolable and must be respected and protected at all times and in all learning processes.

Education and learning in the digital transformation need to inherently reflect the values of democratic society and principles of human rights. The ongoing development of the competences frameworks such as Digicomp, Lifecomp and Entrecomp for the EU context, which are closely interrelated with the EU initiatives on digitalisation, are particularly important for incorporating democratic governance, fundamental rights provision and citizen-driven digitalisation as core dimensions.

Digital divide – addressing and challenging exclusion

Recommendations

- Accessibility to digital learning for all is a core demand and should be provided as a public good. The full range of instruments should be enforced at all levels and from all those responsible for enabling vulnerable groups to gain from quality education in regard to the wider sphere of digitalisation, but especially for the sphere of digital learning.
- Digitally marginalised individuals and groups (in result often with lower digital literacy) need specific attention. It is especially important to provide such opportunities for those who need support during and in the aftermath of the COVID-19 pandemic.
- Ensure inclusion by working to reduce the digital divide, and by providing infrastructure, equipment and internet, as well as appropriate methodologies to ensure that educators have the necessary digital skills and are able to transfer them to learners.
- Equip both women and men equally with the newest technology and training. Invest specifically in mentoring of women and girls upgrading their skills and pay a specific attention to female teachers and educators.
- Both formal and non-formal education, including adult learning, should make a special effort to avoid widening the digital gap, lowering barriers to digital access and participation and enabling every citizen to be involved in all spheres of societal life.

As UNESCO's ROAM- X principles confirm, the digital transformation likely perpetuates the discrimination of groups affected by exclusion already in the analogue sphere. Individuals and societal groups again risk being left behind if there is no proper political mechanism or other measures to demand and ensure equal access and opportunities. Companies that own or provide access to internet and digital platforms need to respond to certain regulations since digital advancement is perpetuating existing forms of inequality and discrimination on a societal level as well as on a global scale. Education has a clear task in not only supporting those at risk of being left behind, but also providing adequate answers for a rights-sensitive learning that enables people to make conscious decisions and take action.

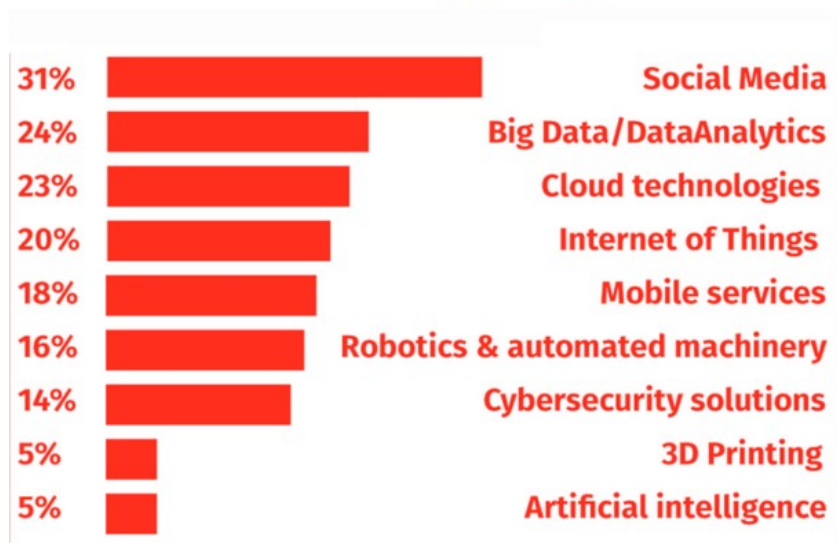
Work and job-related training

The European Commission is demanding that employers ensure adequate technical qualification of their employees in order to meet the demands of the digital transformation. The European Commission underscores the importance of more qualification close to the working space, because at present “only 1 in 10 adults currently participates in organised learning, most often those with higher skill levels and employees of large companies” (Cedefop, 2017).

There is growing, systemic job polarisation, which underscores an increased need for job-related training. It is important to acknowledge that closing skill gaps requires more time

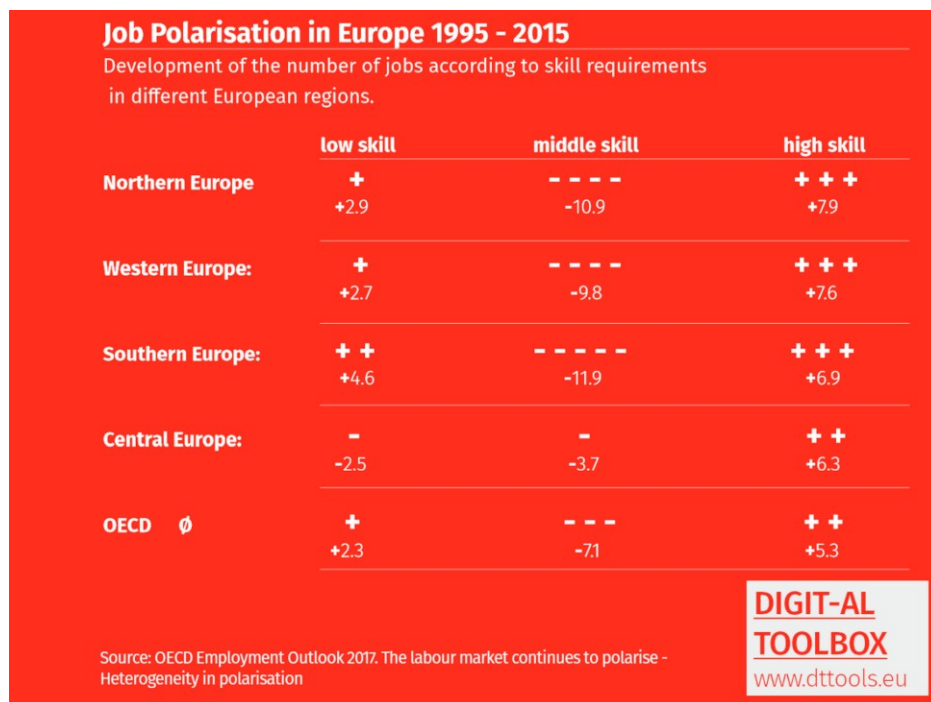
for learning, VET and commitment on the part of companies to train their employees. On the other hand, it is clear that robotization and artificial intelligence are replacing routine jobs, not only in factories, but also in the office.

Level of technology adoption



Level of technology adoption among all survey participants (construction and food sectors)
Digital Transformation Scoreboard 2018 (EU EASME2018, p.19)

If AI, Big Data, datafication and cooperative automatization are becoming increasingly distributed, the concerns of employees need to be taken seriously. Employees need support to understand the technology and co-determine its usage.



As with every complex innovation that functions at large scale, digital technology creates a risk of technological unemployment, which leads to anxiety and fear of exclusion in many, as well as an inability to deal with everyday tasks. Fear and ignorance may lead to avoiding the topic. At present, there are insufficient studies about the impact and risk of

technologies, datafication, information and data illiteracy – specifically for the field of education and training. A lack of consciousness about the producer's role, as user and producer of digital content and data, as well as of digital rights relevant to people in their working, social, and human rights contexts might lead to insecurity and fatalism, which do not create ideal conditions for meaningful learning.

Providing the full picture

Raising awareness about the environmental and social costs of technology is essential. The lifelong learning process provides a frame for discovering and debating about the hidden and untold stories of technological progress. Digitalisation and robotics in all their dimensions have yet to provide a path for a clean, smart and environmental model of economic growth. This is because questions related to healthy and dignified work, democratic economy, protections for a clean environment, an end to neo-colonialism, a reduction in the gender gap, and harms, which are disproportionately experienced by certain groups within society remain on the agenda and need to be answered. These questions necessarily touch on issues regarding fairness, equal access, democratic governance, affordability, equal opportunities and the global fight against economic privilege.

Gender equality

Women and diverse groups in particular often lack equal access to new technology and to adequate learning and training opportunities. UNESCO's Global Report on Adult Learning and Education (GRALE) 4 (UNESCO, 2019) is about the existing gap between the participation of women and men in the entire spectrum of adult education and training, beginning with basic qualifications and extending to more advanced education. The report identifies situational, structural and dispositive barriers faced by women as main reasons for not participating in learning. There is a real threat that digitalisation will result in a considerable increase in gender inequality since the barriers identified might be reinforced through digital leap innovations. Various European communication confirm the GRALE 4 report, and call for urgent action on all related levels (EC_ENEE, 2020; TalentsVenture; EC-She figures, 2018; EIGE, 2019; EIGE, 2018).

Populist and nationalist political movements, parties and governments across Europe pursue anti-liberal and anti-diversity agendas and actively seek to install a "traditional" model of gender roles. As such, the topic of gender equality and the gender gap enforced by digitalisation should be an issue of highest political concern, since there is a critical risk that actively pursuing digital strategies might unintentionally collide with political strategies to maintain gender-inequality.

Ensure no one is left behind

Various assessments of the effects of digitalisation indicate that groups marginalised due to their socio-economic background, are suffering from perpetuated marginalisation in the digitalised world. Specific efforts to guarantee an inclusive and pluralistic participation need to be made during the process of digital transformation and benefits need to be provided to all groups in society, specifically those that have been historically oppressed.

The COVID-19 crisis is enforcing existing gender inequalities as well as other types of inequalities. During the pandemic, vulnerable groups, such as the elderly, those with lower education and lower levels of literacy (including digital literacy), and individuals with physical disabilities are experiencing higher risks of isolation, unemployment, school dropout, and other misfortunes. They have become more dependent on social welfare systems and on family care than those who are already advanced in digital technology and able to use information, communication and learning opportunities provided via the Internet to their benefit.

Practice

Mobile Age: E+ project that focuses on open government data, mobile technology, and the provision of public services in relation to Europe's elderly population. Europe's population of senior citizens is growing steadily and is predicted to comprise 28% of Europe's population by 2020. However, senior citizens do not normally share the same level of connectivity to the Internet as younger generations, and while government agencies are increasingly providing their services through digital platforms, this risks excluding senior citizens from the design and use of such services. Mobile Age provides the basis for the development of mobile-based open government services focused on senior citizens. A co-creation methodological approach is followed that allows substantive participation of senior citizens and helps them benefit from the production and use of open data for cities. <https://mobile-age.eu/>

Rethinkpartners: A practice connecting people, services and technology: This is an example of how health and care services connect people, services and technology to make things better – diagnostic, insight, strategy, delivery, evaluation. The service, based in the UK, acts as a bridge between the technology sector and local authorities, the NHS, enabling them to provide innovative health and care solutions to their communities. Elderly people and people with disabilities benefit from this service by receiving training on how to use technology which helps them remain independent in their home. The training program includes local people who are happy to share their own digital skills with others. Such a service makes a real impact on the lives of vulnerable people, as well as those supporting them. <https://www.rethinkpartners.co.uk>

Literacy

Recommendations

- Facilitate the implementation and further development of digital literacy through formal and non-formal education.
- Digital literacy is emerging as a complex set of knowledge, skills and attitudes. Accordingly, educational frameworks should include and go beyond technical skills and aim to include ethical, social and transformative aspects related to democracy and human rights, such as dimensions of power, equality, justice, freedom, inclusion and fundamental rights. The ongoing development of the competences frameworks such as Digicomp, Lifecomp and Entrecomp for the EU context are particularly important for incorporating democratic governance, fundamental rights provision and citizen-driven digitalisation as core dimensions.

A conceptual framework related to learning

Digitalisation is more than coding, and from an educational perspective, it goes far beyond media literacy. **Digitalisation** is the use of digital technologies to change a business (economy) or impact model (non-profit sector) and provide new revenue and value-producing opportunities. It is the process of moving to a digital business, which has impact on the social and cultural realms, and on all other aspects of the life of individuals and societies. It is **digital transformation** that represents the gradual transition of existing economic and social and political systems into the digital age.

The European Framework for the Digital Competence of Educators (DigCompEdu) (Punie et al., 2017) conceptually supports educators for their future jobs and work. It is still too often underlined, that education should focus mainly on practical **digital skills**, including coding or knowledge about the software being used in order to take full advantage of the technology available.

Competence Forecast of the World Economic Forum

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Today, 2018	Trending, 2022	Declining, 2022
Analytical thinking and innovation; Complex problem-solving; Critical thinking and analysis; Active learning and learning strategies ; Creativity, originality and initiative; Attention to detail, trustworthiness; Emotional intelligence; Reasoning, problem-solving and ideation; Leadership and social influence; Coordination and time management;	Analytical thinking and innovation; Active learning and learning strategies; Creativity, originality and initiative; Technology design and programming; Critical thinking and analysis; Complex problem-solving; Leadership and social influence; Emotional intelligence; Reasoning, problem-solving and ideation; Systems analysis and evaluation;	Manual dexterity, endurance precision; Memory, verbal, auditory & spatial abilities; Management of financial, material resources; Technology installation & maintenance; Reading, writing, math & active listening; Management of personnel quality control and safety awareness; Coordination and time management; Visual, auditory and speech abilities; Technology use, monitoring & control;

Source: Future of Jobs Survey 2018, World Economic Forum.

Evidence shows that to keep up with digital developments, simply improving digital literacy is not enough. European Skills and Jobs survey data show that adults in jobs requiring at least moderate-level ICT skills also need a strong level of complementary skills such as foundation skills (literacy and numeracy), soft skills (planning and organisation) and behavioural skills (communication and teamwork). Jobs requiring advanced ICT skills depend heavily on people able to solve problems, learn, adapt, and apply new methods and technologies as well as in-depth technical knowledge (Cedefop, 2017).

For many learners, numerous initiatives related to digital education remain vague and distant. There is the general problem that the IT education's perspective deals with empowering users from a technical perspective, which relegates the human rights-related dimensions (individual, networked, state and platform) and needs in other social roles to a secondary position.

In initiatives involving youth, tremendous efforts have been undertaken in the field of digital youth work. These include the development of instruments, tools and spaces generating a digital environment for young people, an environment where they can learn, share, connect and discuss. Aligned with the CoE No Hate Speech campaign, there are various concepts and good practices, which tackle the field of disinformation and hate speech (as has been shown, for instance, in DARE's STEPS project). However, the focus often remains on the media pedagogical perspective, which seldom explores the deeper logic of underlying economic, social, environmental and political structures and their mostly overseen consequences for social, cultural and democratic life. It is deeply challenging for users to understand that in the platform-based, datafied systems, spheres of individual, group, social, environmental and economic rights are deeply questioned, wherein efficiency and rationalisation aspects also apply.

Thus the concept of gaining digital skills expands to developing **digital competences**, which aim for a "literacy of the digital". Learning the digital builds on peoples' digital practices, reflects the importance of asking questions and examining how technologies impact rights, cultures, communication, creativity and social interactions and asks for actively taking and advocating for applying human rights and democratic standards to our digitally co-governed realities. A literacy of the digital supports learners to evaluate critically how technology impacts their world, to apply adequate technologies and take a stand towards these, considering the dilemmas of democratic participation, governance, and rights, such as, e.g., the dimension of gender inequality in access to ICT and STEM education and professions. Specific initiatives are required to open up the transformation towards education from a perspective focused solely on technology to a position that changes dilemmas of unquestioned active use and consumerism of digitalised instruments to a reflected, informed and active position of decision-making.

Thus, a literacy of the digital from a perspective of lifelong learning transforms into a holistic concept integrating the dimensions of

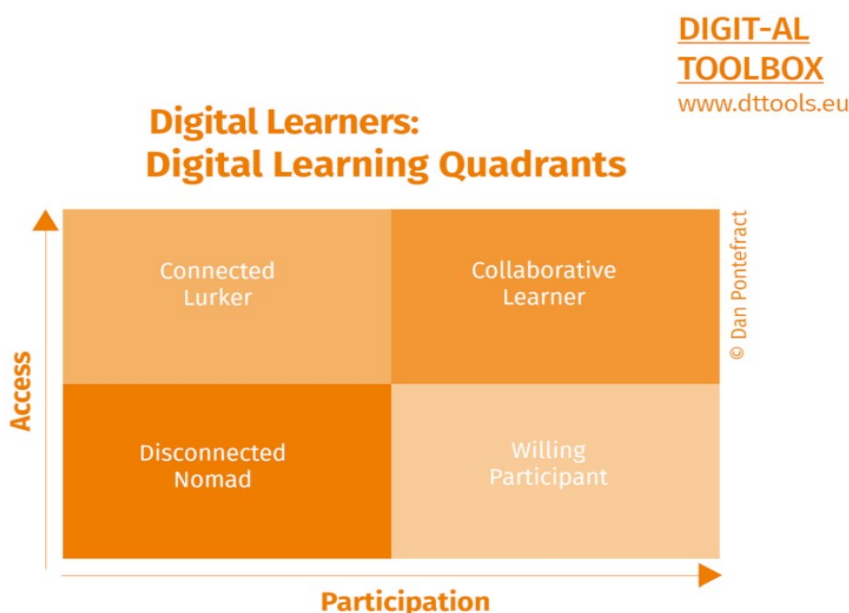
Learning for digitalisation – developing capacities for co-determining the digital transformation in society.

Learning about digitalisation – asking for social, cultural, economic impact of digitalisation on society.

Learning through digitalisation – digital learning as critically taking up the digital everyday practices of people.

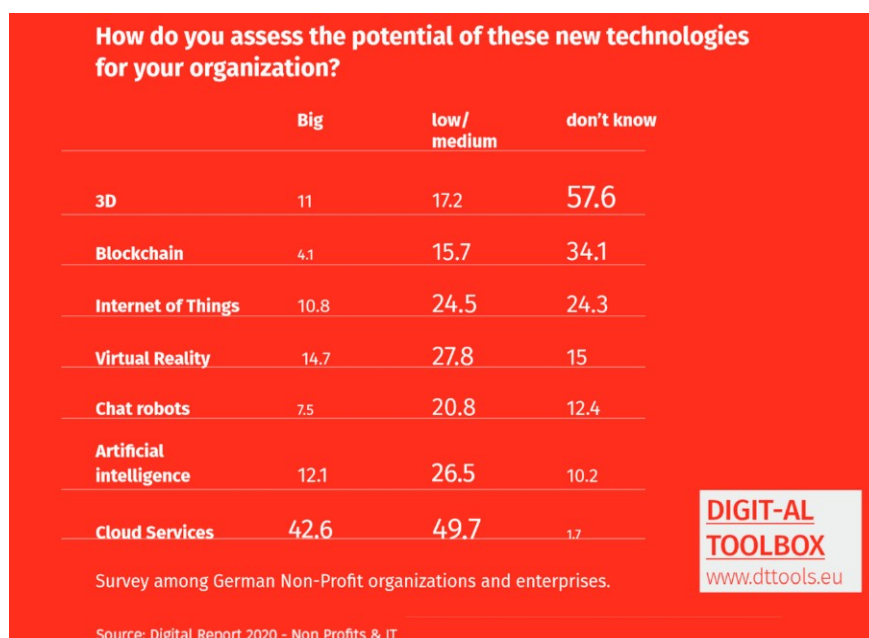
Digital literacy components include functional skills, creativity, critical thinking and evaluation, e-safety, cultural and social understanding, effective communication, the ability to find and select information, and collaboration (Punie et al., 2017). Although some of these aspects are well covered with methodological materials, guidance is needed for areas such as collaborative learning via digital means, cultural and social understanding, emotional competence, critical thinking and evaluation and other components that are part of the domain of Education for Democratic Citizenship and Human Rights.

To provide access to digital learning signifies the removal of institutional barriers and the support of educators in order to create adequate learning settings. Access is also related to the application of an approach, which treats digital transformation in all its aspects – technical, political, and social. An approach that aims at supporting personal growth and the ability of people to participate consciously in political decision-making through digital means, to take action and raise awareness for the potential harmful effects of digital technology on individuals, groups and societal systems.



Educational institutions

Educational institutions need to develop a digital literacy of their own. This is related to raising awareness about the multiple changes digitalisation brings in their own field of work, about defining instruments and rights-based approaches and responsibilities for their organisation. And, it relates to learning, since digitalisation changes the learning paths and perspectives of learners, issues such as acknowledgement of learning, credentialing and qualifications become more important. The pedagogy drawn upon undergoes a change since information, skills and opportunities for meaningful learning are multiplied, and it can be consciously decided when to apply digital, analogue, hybrid or blended learning processes. This in turn alters the logic of pedagogical instruments, whether workshops, seminars, group learning, or experiential learning. Datafication for the whole field of education plays an important role since it affects the working field and structure of the institutions. In the long run, what can be datafied will be datafied, and there needs to be sound preparation to evaluate and determine which particular processes and structures will undergo justifiable changes.



Practice

Digital Youth Work: An E+ supported transnational cooperation project in the field of youth, led by the conviction that quality youth work that meets young people's needs must, in this modern era, include digital considerations. This does not mean that every youth worker should be a technical expert, but that a recognition that young people are growing up in a digital era and that they need support to navigate the online aspects of their lives and critically analyse online information/ interaction is becoming increasingly central to youth work. <https://www.digitalyouthwork.eu/> .

Digital Transformation Toolbox: The DIGIT-AL Transformation toolbox as developed within the E+ supported digit-AL project provides exhaustive material to igniting ideas and reasoning processes for a pedagogy of digitalisation and democracy, as well as materials to work on themes of learning the digital. <https://dtttools.eu>

Access

Recommendations

- Assist learners in exploring relevant skills, including technical and vocational skills for employment, decent jobs and entrepreneurship. Such education and learning in digital transformation is a core aspect of Education for Sustainable Development in all its domains, especially for reaching SDG 4: “Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all”, in Europe and worldwide.
- Support educational providers and NGOs to reach special groups such as elderly, people with disabilities, those living in areas less connected and others in need of support to acquire basic digital skills necessary for life, work and communication.
- Develop a broad understanding of divides and access in relation to social, political, technical and environmental dimensions in order to develop consistent provisions for access.
- Barriers need to be identified from the perspective of those which are confronted with barriers. Priority should be given to creating inclusive barrier-free spaces with the help of digital technology.

Access relates to participation in and use of digital technologies, but also increased access to the political, by virtue of digital tools and the development of new and better opportunities for co-governing and participating in democratic processes. Both are of the main hopes of digital transformation. Similarly, on a global scale, digitalisation can provide benefits for people in regard to their economic, social, and environmental situations. Access to lifelong learning is thus one of the crucial aspects in attaining SDG Goal 4. Digitalisation here brings in new dynamics, which are, at once, potentially helpful and harmful.

Following the UNESCO Belem Framework of Action (Unesco, 2011), it is adult learning in non-formal contexts and through companies and policies, which plays a crucial role in achieving the digital transformation worldwide. This transformation aims at establishing a fair and just share of political, economic, societal and financial benefits and maintaining a balance between economic and environmental interests. Following the UNESCO Recommendations on Adult Learning and Action (RALE), it is the three fields of, (1) literacy and basic skills, (2) continuing education and professional development (vocational skills), and (3) liberal, popular and community education, involving active citizenship skills (UNESCO, 2015). As a triad, they have a crucial role of supporting participation, equity and inclusion through education worldwide, in an effort to fulfil Sustainable Development Goal (SDG) 4.

Digitalisation introduces new opportunities, but also threats, to the fulfilment of and the realisation of these goals, since digitalisation is one of the main fields of competition over future political and economic leadership among different regions of the world. In Europe, the issue of developing and providing integrated and holistic learning perspectives that take into consideration the needs and aims arising from basic literacy, vocational training, and liberal and popular community education, seems to be of key importance when developing within the continent a citizen-driven, fair and democratic governance of

digitalisation. Specifically for the dimensions of digital competence development, (skills, knowledge, attitudes and behaviour) there need to be efforts made to ground them in fundamental human rights as enshrined in the EU Charter of Fundamental Rights and to anchor them in standards for democratic participation across the continent. A lifelong and life-wide application of digitalisation as a means of following and actively developing higher democratic standards becomes, then, a crucial task for European policymaking.

After: citizenlab.co

Inclusive Digital Participation

Set-up & communication:
Use inclusive language and visual material that shows as many groups of the population as possible.

Bring the digital to your citizens:
Place your own computers and create an online-offline mixed system.

Customize the software:
Make sure you use clarity over creativity. You can add videos, GIFs or colours on your platform but if no one finds your "Vote" button, you will never reach your objectives.

Measure your results:
Measure how inclusive your participation process actually is..

Digital technology provides new paths for accessing content and different forms of learning. Here, digital support measures for the recognition of key competences and learning experiences, such as micro-credentialing, individual learning accounts or digital portfolio tools may support the recognition of learning (awareness and appreciation of competences) as such, be it self-recognition, formal recognition or social recognition. Digital instruments have the potential to connect recognition of competences gained in other contexts (in particular for informal and non-formal learning) with validation measures. From a participation and co-governance perspective, learners might gain more power in governing provisions of learning, since the digital supports measures that provide them more responsibility and opportunities for defining the learning process. This is a shift of conceptual paradigms for learning structures, which should be taken into account seriously and be supported with necessary practice by all learning institutions.

Practice

MAKEitREAL. A mobile makerspace for female youth from diverse backgrounds aged between 10 and 16 in the German city, Heilbronn. A cooperation of the university, municipality and the regional network of STEM youth education na-tec.
<https://mint-cluster.de/>

Women in the Digital Age: Tarín Quiros, C.; Guerra Morales, E.; Rivera Pastor, R.; Sáinz Ibáñez; Madinaveitia Herrera, U (2018). Iclaves, SL and Universitat Oberta de Catalunya (UOC), European Commission, Directorate-General of Communications Networks, Content & Technology. <https://doi.org/10.2759/526938> Summary: <https://doi.org/10.2759/517222>

The Big Hack: A website with the mission to make sure websites, apps and online services are accessible to everyone. With hands-on guides, material and advice, provided by the organisation Scope, United Kingdom <https://bighack.org>

Processes, methodologies, structures and quality 5

Non-formal learning about, for and through digitalisation

Recommendations

- Recognize the significance of Education for Democratic Citizenship/Human Rights Education, which has experience in translating the meaning and relevance of human rights and democratic principles to learners, and create learning provisions accordingly. It involves developing critical thinking and breaking down socio-political complexity to support people in developing competences to study and access these topics and, as a result, build their positions around political issues. Furthermore, active citizenship education is empowering citizens in their everyday lives to become involved in policy discussions and public discourses. Especially rights-related and participation-related approaches are gaining relevance for an innovative pedagogy of the digital. Its aims and goals should be reflected also in calls and priorities.
- Realise and harness the full potential of the Belem framework of action, dimension 3 (civic education) for adult learning in an LLL context, and ensure a more substantial role of NGOs and civil society in this process.
- Providers of lifelong learning, specifically centres of lifelong learning could offer accessible, affordable and high-quality content in order to prepare people to develop digital literacy and to acquire relevant skills via digital technology.
- The development of a literacy of the digital as such is a precondition for the education and learning field – related to policies, digital infrastructures, governance, capacities of educators, AI supported learning, and instruments.
- Non-formal education, with its specific ability to operate in open processes, can provide a solution to address the low digital preparedness of young people and adults: this may apply to the labour market in the context of digital transformation, but ever more for developing the consciousness about the related individual, societal and political dimensions, in order to successfully navigate digitalisation. Non-formal training providers have to play a key role in offering a range of alternative and flexible learning paths to acquire the relevant digital competences.

- Provide mentoring of learners and guidance in the process of acquiring digital competences, also by making best use of the new digital forms of learner-centred certificates such as micro-credentials or individual learning accounts.

Competence-based approaches and holistic learning are important as an approach to providing tools and a stimulating environment for learners to acquire necessary knowledge, experiences and abilities. A holistic and systemic approach can encourage competence development in this way. Several related competence frameworks might be useful to explore for education.

Holistic learning

Holistic learning, as practised in non-formal learning, encompasses the three dimensions of learning for digitalisation, about digitalisation and through digitalisation. It supports and enables learners to develop digital competence that goes beyond mere technical aspects and encompasses all affected societal processes from a perspective of gaining and developing democratic capacities.

Participation, co-governance, and democratic and digital self-efficacy should be key orientation points for providing adequate and tailor-made learning, which combines analogue, digital and blended approaches as well as integrates adequate digital tools.

In a socio-economic environment in which digitalisation is vitally influencing all areas of life, engaging in self-directed learning and attending adequate educational opportunities becomes crucial. Thus, the learner becomes a protagonist in selecting adequate tools and provisions for their lifelong learning and training. Confidentiality and integrity of supportive tools and educational platforms are of utmost importance. Learning approaches should uphold human rights standards and be hold accountable for human rights provisions; enforce learner's control over and knowledge of privacy; explore and use data, and intermediate architectures related to the design and implementation of tools, data and knowledge used.

Digital learning should enhance learning

Digital learning needs to be designed to provide added value in education, not simply to continue it via digital means. Digital technology can represent a means for cultivating more dedicated learning opportunities for all. Its use, application, design however is not justified by its mere existence, and must therefore be used thoughtfully, transparently and creatively, so as to provide opportunities that facilitate the learning process.

Accordingly, digital pedagogy – the organisation of the teaching/learning process, the provision of feedback, and potentially the evaluation of academic achievement with the help of ICT, from the perspective of EDC/HRE, should aim at developing digital competence in a way that supports citizens to participate safely, effectively, critically and responsibly in a digital world. Improving the effectiveness of such education in both formal and non-formal settings means to organize it in a manner that is relevant to their lives, accessible, sustainable, accountable, participatory and of high quality. It encompasses, among others:

- Digital resource management – the selection, use and creation of digital learning and methodological resources from the perspective of individual, social and economic human rights and from a perspective of providing access and ensuring diverse participation and accountability, for instance, through open source and open codes.
- Digital competence for communication and cooperation – communication via e-platforms, sharing resources, joint online work with all participants of an educational process, for instance, colleagues, pupils, parents, experts, and authorities.
- Digital identity management and digital safety – responsible online behaviour, data protection and privacy, the use of adequate ICT for creating a professional image, and an environmentally and health-friendly use of digital tools.
- Digital competence for active citizenship – the use of digital services, gadgets and applications for influencing social processes and an awareness of equality and inclusion issues in the context of technologies.

Recognition

Digitalisation can offer an entry point to discuss and develop learner-centred competence approaches in non-formal education with adequate information and tools (for instance, self-assessment or recognition tools). With its unique learning mobility programmes structure, the European Union could support the development of sound concepts to meaningfully integrate this learning of the digital, into Individual Learning Accounts (ILA).

The high-level expert group of the EU commission on the impact of digitalisation on the labour market promotes a European instrument, namely, the Digital Skills Personal Learning Account (DSPLA), which gives “a personal right to the owner to attain training in digital skills”. The DSPLA will be complemented with an electronic passport where the track record of the individual’s digital skills should be kept and accessed everywhere by all stakeholders (EC COM 2019-04). Similar ideas were mentioned in the European Skills Agenda (EC COM(2020) 274 final), aiming to assess the potential of ILAs (also: OECD, 2019).

A rights-based dimension of learning, technology evaluation

Regarding digital rights, knowledge and clarity are essential for creating rights-sensitive routines and environments for collaboration and data exploration and data exchange. Rights-sensitive practical training is also required.

The concept of digital citizenship (CM/Rec(2019)10; CoE Digital Citizenship Education) views education as a continuous process of lifelong learning, taking into account the context in which learning takes place. Learners have to be supported to engage positively, critically and competently in a digital environment through the responsible use of technology. Teaching EDC/HRE to digital learners in a digital environment should be an open, creative and interactive process that relies on the use of various forms of media, tools and platforms. Given the global dimension of digitalisation, EDC/HRE learning itself should not be restrained by GDPR conform tools, but provide a global opportunity and expand its entry points to the global facets of digitalisation.

Focus on experiential learning and everyday experience

Non-formal education in lifelong learning concretely applies experiential learning related to digitalisation. This requires taking up the reality of digitalisation on our societies. In a world where reality is co-shaped by the digital, this needs to be reflected also in grounding and engaging learners in their digitalised realities into educational design and application through participatory methodologies. Creating learning spaces for democratic and digital self-efficacy, which reflect upon the socio-cultural implications of learners' digital practices and reflect upon their personality and identity, as well as the citizenship and democratic development.

The field of EDC/HRE has to navigate digitalisation, while accepting a certain degree of ambivalence. On one hand, criticism of platforms must be guiding and legitimate, since people need to be supported to deconstruct and democratically challenge the existing platform provisions on all levels. On the other hand, the platforms criticised must be used to reach target groups that are active there and cannot be reached through other channels. For EDC/HRE, addressing many target groups whose socio-cultural milieus have become more hybrid – online and offline – is difficult. Therefore, NFE needs to actively seek immersive formats and approaches (e.g., influencers, streaming formats, social media, etc.) to open up or keep open new educational spaces. At the same time, EDC/HRE must maintain an appropriate distance from such platforms for reasons of data protection and due to potential conflict with the economic models and/or political purposes behind them. If, for example, a tech company like Facebook uses data of its users for advertising purposes or when platforms like Instagram, WhatsApp and Facebook are merged, the field must view this critically for fundamental rights reasons. Also, it is necessary to actively seek, define and develop technical standards and tools that follow fundamental rights principles and can be democratically accessed.

Non-formal learning highlights the learners' perspective first (as users but also as producers of content). It builds on capacities, and experiences the learners bring in. As such, learning the digital should start from a perspective of democracy and of upholding the rights of users (and non-users) and all people affected. Furthermore, the understanding of the relation between online and offline as interdepending processes needs to be strengthened. Digital inclusion or exclusion will lead to analogue inclusion or exclusion. Alternatively, improved digital participation certainly has an effect on participation in face-to-face life. In this sense, a pedagogy of participation and inclusion cannot be a digital one nor an analogue one alone. Non-formal EDC/HRE should facilitate learner engagement in collaborative learning. Collaborative learning must be a key element in any education, because immersion in a digital space can easily create a generation of learners who are less sensitive to the needs and interests of others.

Digital and analogue

Digital and analogue are not enemies. Both are, today, an integral part of our cultural practice. The discussion in education and learning needs to focus on the synergies and overlapping aspects between both, rather than the (often constructed) differences between the two forms. Digital and analogue together open a wide range of new possibilities, such as simplifying things organisationally, being able to respond to special needs, bringing

the world into the learning space, stimulating communication and cooperation, or designing learning processes across individual educational offerings that are closed in format. Concepts like immersion or experiments with augmented reality illustrate the huge potential of technology for a new way of cultural expression and perception.

Real life experience

For decades many Europeans have had experience with digital transformation. They use smartphones, stationary computers and smart digital devices. However, educational providers and policy seem too often to give adult learners the impression that digitalisation is something new. A resource-oriented approach to digital learning must include these existing experiences and especially the strategies which adult learners have developed to cope with technology. The concrete individual abilities and habits but also developmental goals of learning should consequently shift the focus of adult digital competence learning.

Practice

Digitale Spielräume: Digital Playing Spaces is a project by Waldritter e.V. dedicated to exploring the possibilities of interactive performance and storytelling with the means of the "new normal". To this end, theatre makers, live role-play organisers, authors and other play-loving people of all ages will meet in a participatory (online) workshop format to examine the limits and opportunities of Zoom, Discord, etc. to see if they can be used to tell stories. There we take time for the creative use of the media tools and experiment with space, sound, video and look for digital allegories for our analogue world. The results of these workshop encounters will be collected in the form of short "nuggets" (collections of ideas, games, impulses, short videos) to form a common pool of knowledge that the participants can take with them into their digital everyday life and their own work. <http://www.waldritter.de/digitale-spielraeume/>

Digital Youth Work: As conducted by the Finnish expert youth centre, VERKE, is based on the idea that new technology must be utilised in youth work to make services and activities intended for young people better, more accessible and more meaningful. Digital youth work can be used to create opportunities and spaces for young people to develop their critical, ethical and creative thinking related to technological development and the digital future. Digital youth work is focused on digitalising the youth work sector and the practices within. Digital youth work is not a separate discipline or method within youth work, but rather something intertwined with all areas of youth work. Digital youth work can, for example, be implemented in the context of cultural youth work, youth participation, youth information and counselling, open youth work or outreach work – in other words, any and all forms of youth work. <https://www.verke.org/en/verke/digital-youth-work/>

Educators, pedagogues and their training

Recommendations

- Teach digitalisation as a complex concept! This means to move from media education and digital learning towards the three dimensions: Learning for digitalisation: co-determining the digital transformation in society. Learning about digitalisation: social, cultural, economic impact of digitalisation in society. Learning through digitalisation: digital learning, digital tools and services in learning.
- Learning covers, beyond the from the user-perspective relevant technical skills, also deeper and more systemic understanding of datafication, digital monetisation, Big Data and AI, and the socio-cultural aspects of participation and digitalisation. Also a deeper understanding of technologies and software, and of tools and platforms which are in line with human rights and democracy standards needs to be integrated, respectively learning how human rights are affected by and through usage and participation of certain platforms and in the Internet.
- It is transformative learning. Facilitate with a competence-centred focus, treating key competences as transformative competences. In particular address transversal aspects as they are described in EntreComp (proactivity, creativity, innovation) and Lifecomp (learning-to-learn or self-competence). This needs to take place in and beyond the workplace in VET and other non-formal education settings, specifically in EDC/HRE, but also in other fields of adult and youth learning.
- Train educators and pedagogical staff systematically, in line with the EU digital competency framework for educators DigCompEdu and enrich with core aspects of digital citizenship education, including fundamental rights and democratic principles, equity and also a focus on the social and environmental impact of technology inline with the intentions of the approach of Digital Citizenship Education (CM/Rec(2019)10; CoE Digital Citizenship Education).
- Train educators on understanding the dimension of datafication in education and of datafied educational processes and how to apply and integrate data in education in a rights-sensitive way (e.g. learning analytics, personal data processing), but also the use of data in education (in particular Open data, Open Educational Resources/ Creative Commons). Support educators in familiarizing themselves with other digital measures and their potential for education: micro-credentialing (i.e. Open Badges), digital learning accounts (ILA), digital portfolios, ...

Education and training in digital transformation requires new and lasting investment in the professional capacities of educators since there are a variety of dimensions to tackle, to include:

- Impact of democracy and human rights on digitalisation;
- Learning about core concepts of digitalisation: the Internet, platforms, Big Data, AI for non-tech educators;

- Shaping digital learning spaces and using digital technology and data for education and learning (in line with human rights principles).
- Educators should actively seek collaboration with research, educational institutions, practitioners and activists in the field of digital transformation in order to develop adequate concepts.

With respect to data literacy and information literacy, particularly in the non-profit sector, there is considerable potential but minimal competence. There is a deficit of skills in using platforms with open data, in applying tools of data analysts in broader areas such as data compilation from public sources, and in taking the best out of decentralised software and platforms). Efforts should be made to invest in staff and CSO's ability to use digital technology.

Digital competence of educators

Thus far, there are barely any schemes and support to apply the needed training and further education for educational practitioners on a large scale, whether in the formal system or in islands of non-formal educational practice. Competency concepts for professionals need to include digitalisation-related aspects and therefore contribute to a rights-sensitive and differentiated understanding of the digital professional skills of educators.

Educators must develop competences to understand, navigate and raise consciousness about the digital transformation in its various social, economic, technical and environmental aspects. Digitalisation is ubiquitous and affects simultaneously all areas of life in a global dimension. Developing the capacities of educators to understand and co-shape the inherent logic of the digital, specifically in relation to citizen participation, citizen involvement and a democratic governance of digitalisation is a crucial task and will be a future asset for the profession of those active in education and training.

The task of civic educational professionals is to explore with learners that each of their (everyday) decisions - to use a certain app, to create a social media profile, to make digital purchases - is always a political decision, because it strengthens corporations, uses distribution channels at the expense of others, passes on data, etc. Making these deeply rights-related and political aspects of the participants' concerns clear takes on an additional dimension here.

A human rights perspective for educators should focus on aspects of equality, diversity, access, and on social, political and economic power structures affected by transformation in the various subsystems of society at the global scale. It should integrate an inter-sectional perspective, taking in to account the various aspects of discrimination unveiled in a digitally co-determined society. EDC/HRE should focus more on issues which have, until now, not been a key focus: digital warfare, AI-supported border regimes, policing, e-justice, or digital market politics.

Educators should develop a holistic view of the interplay of the various actors in our societies who have a role to play in supporting adults to assume adequate starting and participation positions during the process of digital transformation.

EDC/HRE educators have to be supported by governmental and European programs to acquire knowledge and understanding of digital learners in order to support them and to make effective use of technology, including applying insights from experiences related to blended and virtual learning. Being part of and understanding the everyday digital culture puts educators in a position to design learning processes and guide students to acquire a range of competences, attributes and behaviours that utilise opportunities offered by the digital world while building resilience to potential harms.

The educator needs to accompany and guide learners to make sense of an ocean of information, to be critical and selective and to know how to act as citizens and engage effectively and responsibly in community matters, exercising their rights and participating appropriately in the affairs of the community.

A human rights perspective for educators should focus on aspects of equality, diversity, access, and on social, political and economic power structures affected by transformation in the various subsystems of society. It should integrate an intersectional perspective taking into account the various aspects of discrimination unveiled in a digitally co-determined society.

Educators should develop a holistic view of the interplay of the various actors in our society who have a role to play in supporting adults to assume adequate starting and participation positions during the process of digital transformation.

Practice

Digital Coach politische Bildung: (Digital Educator of Civic Education). The training series for civic educators by Karl Arnold Foundation and the North Rhine-Westphalia State Agency for Civic Education to become a "Digital Coach for Civic Education" takes up social and political issues of digitalisation and combines the processing of the content-related topics with digital learning concepts and digital learning tools, taking into account the following learning objectives:

Digital coaches are able to distinguish different terms around the topic of digitalisation from each other and name examples of learning formats and learning tools for digital education.

Digital coaches understand the importance of digitalisation for the different educational sectors.

Digital coaches are familiar with the essential technical, economic, social and political discourses of digitalisation (such as artificial intelligence, algorithms, big data, work/industry 4.0, fake news, etc.).

Digital coaches can discuss different prognoses for the future and recognise possible effects and challenges for political education.

Digital coaches can develop their own digital projects in which topics of digitalisation are processed pedagogically and implemented in a practice-oriented way.

Digital coaches can understand digitalisation as a topic of civic education and formulate goals and guidelines for dealing with the topic.

More info: https://youtu.be/Fs_7GDzCOT8

Structures and organisations of education and learning

Recommendations

- Provide more substantial investment in adult learning, connected with a concrete and targeted approach towards effecting structural change in the provisions, systems and structures of adult education and in the learning field.
- Governments and European programs, such as Erasmus + and others, must give priority to and provide financial support for capacity-building and digital infrastructures of CSOs, the non-profit sector in general and of educational providers.
- In the non-profit and education sectors, the potential of various technologies should be identified, not only from an engineering perspective, but from a user's perspective as well. This would include providing analysis of various technologies and outlining their benefits for education, citizen participation and engagement under a lifelong learning perspective, starting from a young age.
- There is a growing need for NGOs to promote policy conditions that are conducive to the use of digital technologies. In order to tap the full potential of digital technologies, appropriate frameworks need to be put in place. These include adequate funding instruments, access to information, comprehensive infrastructures, non-discriminatory access, and strong partners.

With the assumption that digital education is not only for digital natives—although these require specific attention—or for digital immigrants, the role of EDC/HRE can be seen as raising the consciousness of individuals about the digital realms they already inhabit, where they can play an active role and participate actively in decision making.

Given that in most fields of everyday life, adults are deeply connected in digital spaces, the notion that digital education concerns only young people should be deeply questioned.

In practice, several key questions emerge for adult education at the organisational level: What strategies do we apply, and which management decisions do we make in order to initiate these processes? What instruments do we use? How does digital transformation benefit our structures and where should adjustments be made? Does digital transformation offer an opportunity to put more effort into the pedagogical process of formal and informal education and training and what gains would be derived from it?

In relation to working environments without new technology, non-profits lack a holistic strategy for modernisation. This also impacts the ability of employees to become familiar with the newest technology. Further, evidence shows in particular that experience with cybersecurity, AI, robotics, 3D printing and automatization technology needs to be improved.

For NGOs, the digital transformation implies greater institutional pressures to adapt. In addition to capacity-building, NGOs also need to gain and harness required knowledge and experience. At the management level, NGOs face the challenge of creating favourable framework conditions for innovation and for scaling up the use of proven digital

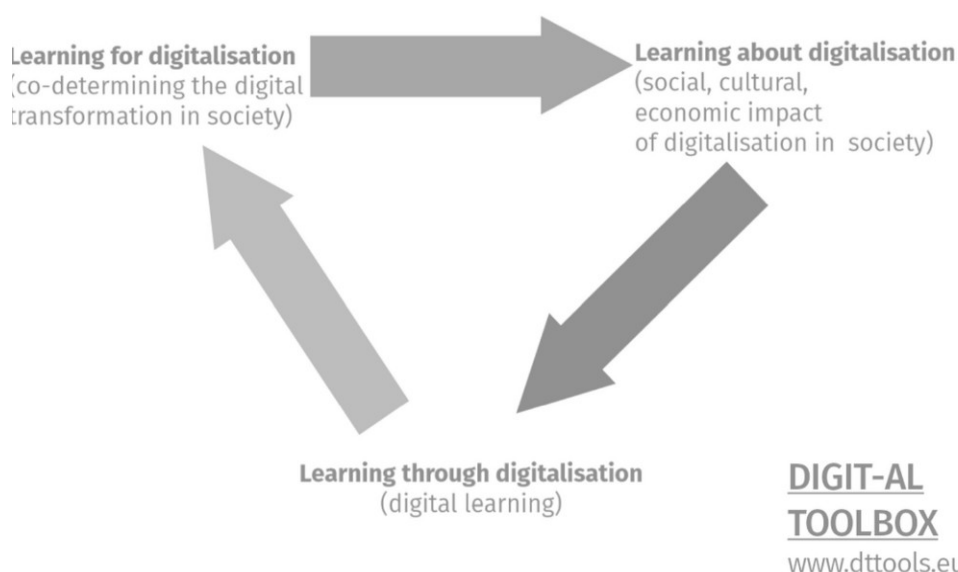
approaches in their organisations. The development and implementation of targeted strategies may also require the topic of digital transformation to be institutionally embedded within each learning and educational organisation.

A worthy goal would be to create workplaces that enable employees to acquire competencies, such as learning to work independently, improving their ability to work with others as a team, making effective use of computers and other devices, adapting to change and thinking proactively and creatively. Continuous improvement of skills such as coding and ability to communicate in English would also need to be pursued. In other words, the OECD transformative competences must be cultivated in the workspace and taken seriously for the development of the “economic strategy of the NGOs”.

Institutions and specifically places and Centres of Lifelong Learning should be aware that digitalisation reinforces the need for the further qualification of their staff at all levels, including pedagogues and individuals working in administration and management. In the case of community learning centres and other such institutions, technical and care staff will also need to be involved in a continuing learning process. Topics such as the circular economy, environmental footprint, renewal of gear, maker fairs, common software platforms and standards (open source, and so on) following HR principles need to be re-discussed.

The European Economic and Social Committee acknowledges non-formal education as a new strategic priority: “Non-formal education is key to furthering inclusive education systems and a key avenue for lifelong and lifewide learning. More emphasis should therefore be placed on assessing and validating the outcomes of non-formal education and informal learning as comparably as possible and supporting all stakeholders in this respect, as proposed by the EESC in its earlier opinion” (EESC 2020/C 14/06, 4.9). Another partner for upgrading or upskilling is civil society: People gain knowledge and expertise in youth organizations, citizen associations and initiatives.

Digital Transformation Competence The Perspective of Education for Democratic Citizenship



Practice

Digital transformation strategy of Deutscher Volkshochschul Verband (dvv). DVV the German adult education organisation, has developed a strategy enforcing the digital on the structural, pedagogical and content level. The concept focuses on developments around four main areas, summarized with the term “Expanded learning worlds”

Creation of technical infrastructure for digital learning offers also in structurally disadvantaged regions through the vhs.cloud as a dedicated virtual learning and working environment for all Adult Education Centres;

Strengthening the digital media competence of pedagogical staff by offering further training on topics such as media didactics, legal issues or media planning and organisational development;

Promotion of media-didactic innovations in Adult Education Centres through the realisation of so-called Digicircles, i.e. regional alliances for the development and testing of digitally supported teaching and learning formats;

Development, testing and consolidation of a dialogue concept for dealing with the social effects of digitalisation in everyday life and in the world of work.

<https://www.volkshochschule.de/verbandswelt/Digitalisierungsstrategie/>.

Facilitating collaboration between educational practice, research and digital activism for quality capacity development

Recommendations

- Civil society and expert organisations in the fields of consumer data protection and human rights should cooperate more closely. Education researchers and practitioners need support to achieve digital competency in order to utilise available platforms, open data and digitalised public sources of information.
- European budgets and funding should be allocated to groups and consortia, which combine expertise in theory and practice. There should be more, enforced cooperation between research, data activists and educational institutions/practitioners in the field of digital transformation. The cascading effects of projects should be enforced and enabled to go from pilot developments to enabling broad applications.

The essential definition of democracy and rights-based education is the Council of Europe's Charter on Education for Democratic Citizenship (EDC): "Education, training, awareness-raising, information, practices and activities which aim, by equipping learners with knowledge, skills and understanding and developing their attitudes and behaviour, to empower them to exercise and defend their democratic rights and responsibilities in society, to value diversity and to play an active part in democratic life, with a view to the promotion and protection of democracy and the rule of law" (CoE CM/Rec(2010)7).

Therefore, the EU Commission's understanding of digital competence could be further complemented by finding instruments and support for formal and non-formal education to help learners, citizens and employees to find answers to the following questions:

- What digital transformation competences—knowledge, skills, values and attitudes — do citizens need to understand the digital transformation in their society and how it affects them in their various social roles?
- How are fundamental rights and ethical foundations related to the transformation? Where do they shift their nature, what weakens them and what kind of development strengthens their enforcement?
- What active civic competences do citizens need to contribute to the transformation, including participation in relevant public discourses and decisions, self-organisation and social engagement, and the development of social innovations. Empowerment through peers such as female tech-experts and practices such as self-organisation are crucial.

It is important to ignite a proper democratic debate about technology, including its environmental and social impact. Education in digital competence should look into the principles of digital sovereignty, the right to make self-determined choices about technology and innovation, the right to understand it and to choose one's own level of engagement.

There is a need for integrated approaches to education for digitalisation. Although digitalisation is high on the policy agenda, adequate policies integrating lifelong learning and non-formal learning are lacking on a large scale in the EU, in Europe and in almost all EU member states. Vice versa, developers, data analysts, researchers and activists lack concepts to transform their capacity into educational expertise.

Digitalisation policies do not sufficiently include EDC/HRE or actively use the knowledge and experiences of civil society actors, nor do they cover and distribute competences according to the experiences made in the sphere of LLL and NFE. On the contrary, the ongoing shrinking of spaces for democratic civil society and a reduction of underlying analysis for political programs and missing programs as such can be witnessed all over Europe, owing to the short-handed perspective of societies in the trap of economisation in the last decade.

Capacity development in lifelong learning and non-formal learning, connected to the specific dimensions of digitalisation asks for action at several levels:

- to support people to become democratically engaged and involved in co-governance.
- to enable the working field of EDC/HRE to lead a professional discourse of its own right and to set and define its valid professional standards.
- to put those in the field in a position to become effective democratic actors, with the aim of enabling them to question policies and programs instead of adopting them without challenge. The LLL field actors should be recognized in their own discourses about quality of digital learning and standard setting.

The chance of digitalisation for the decentralized systems of education providers all over Europe is in its unique opportunities for collaborative working and tailor made learning, for developing civil spaces, and for developing a common base for quality processes across Europe including grassroots organizations and institutions from the various levels of research, activism and practice.

Practice

Tactical Tech Collective: Tactical Tech is an international NGO that engages with citizens and civil-society organisations to explore and mitigate the impacts of technology on society. Its work is oriented toward two main target groups:

The first is a much broader audience, grown from the increased public awareness around these issues and the demand for public education around online privacy and autonomy in a data-driven world. Through projects like The Glass Room and the Data Detox Kit, creative and accessible formats are provided to demystify technology and give people actionable, sustainable changes they can implement in their own digital lives.

The second audience group is made up of civil society actors, such as journalists, other NGOs or human rights defenders, who are supported to create safer, more robust and more informed practice, with regard to their use of digital technologies. Projects such as Exposing the Invisible help empower people to use digital investigations to uncover truth or corruption. Similarly the work on Data and Politics, provides a unique contribution to understanding how the misuse of data impacts democracies around the world negatively. <https://tacticaltech.org/>

Legislative Documents

- Council of Europe: Recommendation CM/Rec(2010)7 of the Committee of Ministers to member states on the Council of Europe Charter on Education for Democratic Citizenship and Human Rights Education (Adopted by the Committee of Ministers on 11 May 2010 at the 120th Session)
https://search.coe.int/cm/Pages/result_details.aspx?ObjectID=09000016805cf01f
- Council of Europe: Recommendations CM/Rec(2019)10 of the Committee of Ministers to member States on developing and promoting digital citizenship education,
https://search.coe.int/cm/Pages/result_details.aspx?ObjectID=090000168098de08
- Declaration: Commitment on women in digital. Done in Brussels on 9 April 2019 in one original in the English language. EU and Norway. Signed in the context of the European Digital Day (2019), https://ec.europa.eu/newsroom/dae/document.cfm?doc_id=58562
- European Commission (EC COM/2015/0192 final). *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions . A Digital Single Market Strategy for Europe.* <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52015DC0192>
- European Commission (EC COM 2019-04). Directorate-General for Communication Networks, Content and Technology: Directorate F – Digital Single Market: Report of the high-level expert group on the impact of the digital transformation on EU labour markets. <https://doi.org/10.2759/586795>
- European Commission (EC COM(2020) 66 final) Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. A European strategy for data. Brussels, 19.2.2020 <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52020DC0066>
- European Commission (EC COM/2020/152 final). *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. A Union of Equality: Gender Equality Strategy 2020-2025.* <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52020DC0152>
- European Commission (EC COM(2020)274). European Skills Agenda for Sustainable Competitiveness, Social Fairness and Resilience,
<https://ec.europa.eu/social/BlobServlet?docId=22832&langId=en>

- EU Commission (EC COM(2020) 790 final). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. On the European democracy action plan. <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=COM:2020:790:FIN>
- European Commission (EC COM/2020/825 final). Proposal for a Regulation of the European Parliament and of the Council on a Single Market For Digital Services (Digital Services Act) and amending Directive 2000/31/EC <https://eur-lex.europa.eu/legal-content/en/TXT/?uri=COM:2020:825:FIN>
- European Commission (EC COM/2020/842 final). Proposal for a Regulation of the European Parliament and of the Council on contestable and fair markets in the digital sector (Digital Markets Act) <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A52020PC0842>
- European Commission. (EC COM(2021) 205 final ANNEX) Coordinated Plan on Artificial Intelligence 2021 Review. <https://ec.europa.eu/newsroom/dae/redirection/document/75787>
- European Commission (EC SWD(2020) 209 final). Digital Education Action Plan (2021-27). Resetting education and training for the digital age. https://ec.europa.eu/education/education-in-the-eu/digital-education-action-plan_en
- European Commission (JOIN(2020) 5 final ANNEX). Annex to the EU Action Plan on Human Rights and Democracy 2020 -2024 (JOIN(2020) 5 final) , https://eur-lex.europa.eu/resource.html?uri=cellar:e9112a36-6e95-11ea-b735-01aa75ed71a1.0002.02/DOC_4&format=PDF Here specifically the section: New technologies, harnessing opportunities and addressing challenges.
- European Council (2016). Council Recommendation of 19 December 2016 on Upskilling Pathways: New Opportunities for Adults OJ C 484, 24.12.2016, p. 1–6 . https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ:JOC_2016_484_R_0001
- European Council (2021/C 66/01). Council Resolution on a strategic framework for European cooperation in education and training towards the European Education Area and beyond (2021-2030): [https://eur-lex.europa.eu/legal-content/DE/TXT/?uri=CELEX:32021G0226\(01\)](https://eur-lex.europa.eu/legal-content/DE/TXT/?uri=CELEX:32021G0226(01))
- European Union (EU GDPR, 2016) Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation) (Text with EEA relevance) ELI: <http://data.europa.eu/eli/reg/2016/679/oj>
- European Union (EU 2019/1024). Directive (EU) 2019/1024 of the European Parliament and of the Council of 20 June 2019 on open data and the re-use of public sector information: <http://data.europa.eu/eli/dir/2019/1024/oj>

Other resources

- Alliance for the affordable Internet. Internet Affordability Report. <https://a4ai.org/affordability-report/>
- Berryhill, J., et al. (2019), "Hello, World: Artificial intelligence and its use in the public sector", OECD Working Papers on Public Governance, No. 36, OECD Publishing, Paris, <https://doi.org/10.1787/726fd39d-en>.
- Carretero Gomez, S., Vuorikari, R. and Punie, Y., DigComp 2.1: The Digital Competence Framework for Citizens with eight proficiency levels and examples of use, EUR 28558 EN, Publications Office of the European Union, Luxembourg, 2017, ISBN 978-92-79-68006-9 (pdf), 978-92-79-74173-9 (ePub), <https://doi.org/10.2760/38842>
- European Centre for the Development of Vocational Training (Cedefop) (Cedefop 2017). Briefing Note, People, Machines, Robots and Skills. TI-BB-17-003-EN-Nm, ISBN: 978-92-896-2316-2. <https://doi.org/10.2801/057353>
- Council of Europe: Digital Citizenship Education <https://www.coe.int/en/web/digital-citizenship-education/home>
- Edinger-Schons, L. M.; Reppman, M.; Becker, Röhl, P. (2020). Digital Report 2020 Non-Profits & IT. Haus des Stiftens gGmbH. <https://www.digital-report.org/>
- European Commission, DG Research and Innovation (2018). Turning FAIR into Reality, Final Report and Action Plan on FAIR Data. <https://doi.org/10.2777/1524>
- European Commission. High-Level Expert Group on Artificial Intelligence (EC-AI-HLG, 2019). Ethics Guidelines for trustworthy AI. 8 April 2019. <https://digital-strategy.ec.europa.eu/en/library/ethics-guidelines-trustworthy-ai>
- EU Commission (EC CEAP): Circular economy action plan. Retrieved at 2020/10/30 from https://ec.europa.eu/environment/strategy/circular-economy-action-plan_en
- European Commission. (EC Climate & energy framework). 2030climate & energy framework. Retrieved at 2020/10/30 from https://ec.europa.eu/clima/policies/strategies/2030_en
- European Commission (EC Conflict Minerals). Conflict Minerals, Conflict minerals regulation. The regulation explained. retrieved at 2020/10/30 from https://ec.europa.eu/trade/policy/in-focus/conflict-minerals-regulation/regulation-explained/index_en.htm
- European Commission (EC DG GROW Sustainability). Directorate-General GROW: Sustainability, retrieved at 2020/10/30 from https://ec.europa.eu/growth/industry/sustainability_en
- European Commission, Directorate-General for Environment (EC-DG Environment 2020). Leading the way to a global circular economy, state of play and outlook (2020). SWD(2020) 100, 11 March 2020. Luxembourg: Publications Office of the European Union, 2020. <https://doi.org/10.2779/013167>
- European Commission (EC DSAP): The Digital Services Act package <https://digital-strategy.ec.europa.eu/en/policies/digital-services-act-package>

- European Commission Directorate-General for Education, Youth, Sport and Culture (EC Digital Youth Work 2018). Developing digital youth work. Policy recommendations, training needs and good practice examples. For youth workers and decision-makers. Expert group set up under the European Union Work Plan for Youth for 2016-2018 Luxembourg: Publications Office of the European Union, 2017
<https://doi.org/10.2766/949615>
- European Commission (EC European Green Deal). A European Green Deal. Striving to be the first climate-neutral continent. Retrieved from
https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en
- European Commission, DG for Education, Youth, Sport and Culture (EC ENEE 2020). McNally S., Gender Differences in Tertiary Education: What explains STEM Participation?, <https://doi.org/10.2766/421080>
- European Commission (EC European Interoperability Framework). Promoting seamless services and data flows for European public administrations. Luxembourg: Publications Office of the European Union, 2017. European Interoperability framework.
<https://doi.org/10.2799/786>
- European Commission, DG for Research and Innovation, (EC-She figures 2018). She figures 2018. <https://doi.org/10.2777/936> KI-04-18-555-EN-N.
- EU Commission: New rules for Artificial Intelligence – Questions and Answers (EC new rules for AI). Press Corner.
https://ec.europa.eu/commission/presscorner/detail/en/QANDA_21_1683
- European Commission (EC White Paper AI, 2020). White Paper on Artificial Intelligence: a European approach to excellence and trust. 19 February 2020
https://ec.europa.eu/info/publications/white-paper-artificial-intelligence-european-approach-excellence-and-trust_en
- European Economic and Social Committee (2019) The digital revolution in view of citizens' needs and rights (own-initiative opinion),
<https://www.eesc.europa.eu/en/our-work/opinions-information-reports/opinions/digital-revolution-view-citizens-needs-and-rights-own-initiative-opinion>
- European Economic and Social Committee (EESC) (EESC 2020/C 14/06). Digitalisation, AI and Equity – How to strengthen the EU in the global race of future skills and education, while ensuring social inclusion. (Exploratory opinion at the request of the Finnish Presidency). <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52019AE1610&rid=7>
- European Institute for Gender Equality (EIGE) (2018). Study and work in the EU: set apart by gender. Review of the implementation of the Beijing Platform for Action in the EU Member States. <https://doi.org/10.2839/595585>
- European Parliamentary Research Service (EPRS) (2020). Towards a mandatory EU system of due diligence for supply chains Brief. Ionel Zamfir. PE 659.299 – October 2020 [https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/659299/EPRS_BRI\(2020\)659299_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/659299/EPRS_BRI(2020)659299_EN.pdf)

- European Union Agency for Fundamental Rights and Council of Europe (FRA 2018). Handbook on European data protection law - 2018 edition. <https://doi.org/10.2811/343461>
- European Union Agency for Fundamental Rights (FRA 2020-1). Civic Space - Experiences of Organisations in 2019, <https://doi.org/10.2811/919127>
- European Union Agency for Fundamental Rights (FRA 2020). Getting the future right – Artificial intelligence and fundamental rights report. <https://doi.org/10.2811/774118>
- Federal Ministry for Economic Affairs and Energy of Germany (Priorities of the German EU Presidency 2020). Emerging stronger from the crisis together For a competitive, innovative and resilient European economy. Priorities of the Federal Ministry for Economic Affairs and Energy for the German Presidency of the Council of the EU. Chapter 3: Strengthening the digital sovereignty of the EU). <https://www.eu2020.de/eu2020-en/eu-digitalisation-technology-sovereignty/2352828>
- Go Fair. FAIR Principles <https://www.go-fair.org/fair-principles/>
- Green Digital Charter. A Eurocities Initiative. <http://www.greendigitalcharter.eu/greendigitalcharter-2>
- Next Generation Internet Initiative (2020) Bego, K. and Nesta. NGI Forward. A Vision for the Future Internet. Working Paper. September 2020. <https://www.ngi.eu/wp-content/uploads/sites/48/2020/10/Vision-for-the-future-internet-long-version-final-1.pdf>
- OECD (2019). Individual Learning Accounts: Design is key for success. Policy Brief on the Future of Work, OECD, Paris, <https://www.oecd.org/employment/individual-learning-accounts.pdf>
- Poell, T. & Nieborg, D. & van Dijck, J. (2019). Platformisation. Internet Policy Review, 8(4). <https://doi.org/10.14763/2019.4.1425>
- Punie, Y., editor(s), Redecker, C., European Framework for the Digital Competence of Educators: DigCompEdu , EUR 28775 EN, Publications Office of the European Union, Luxembourg, 2017, ISBN 978-92-79-73718-3 (print),978-92-79-73494-6 (pdf), <https://doi.org/10.2760/159770> (online), JRC107466.
- Sustainable Development Solutions Network (SDSN). Indicators and a Monitoring Framework for Sustainable Development Goals: Launching a data revolution for the SDGs. Sustainable Development Goal 4.7, <https://indicators.report/targets/4-7/>
- Șerban, A. M., Stefan, V.; Potocnik, D. and Moxon, D. (2020) *Social inclusion, digitalisation and young people: research study*. Council of Europe, Strasbourg. <https://pjp-eu.coe.int/documents/42128013/47261953/053120+Study+on+SID+Web.pdf>
- TalentsVenture <https://www.talentsventure.com/osservatorio/>
- United Nations Statistics Division Development Data and Outreach Branch (UN Stat). SDG Indicators Metadata repository. Sustainable Development Goals 4 , Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all, <https://unstats.un.org/sdgs/metadata?Text=&Goal=4&Target=4.7>
- UNESCO Institute for Lifelong Learning (UNESCO 2011). CONFINTEA VI, Belém Framework for Action: harnessing the power and potential of adult learning and

education for a viable future.

<http://unesdoc.unesco.org/images/0018/001877/187789m.pdf>

- UNESCO (2015). Recommendations on Adult Learning and Education RALE. <https://uil.unesco.org/adult-education/unesco-Recommendations>
- UNESCO (2019): 4 Global Report on Adult Learning and Education (GRALE). Leave no one behind: participation, equity and inclusion. UNESCO Institute for Lifelong Learning, Hamburg. <https://unesdoc.unesco.org/ark:/48223/pf0000372274>
- UNESCO: ROAM-X. Internet universality indicators, <https://en.unesco.org/internet-universality-indicators/roamx-indicators>

Democracy and Human Rights Education in Europe (DARE)

Was officially launched on 28 June 2003 in Antwerp (Antwerp Declaration on Democracy and Human Rights Education in Europe). We are a Europe-wide network of primarily NGOs, academic institutions and training providers devoted to promote active democratic citizenship and human rights through formal education, non-formal and informal education, and life-long learning.

DARE aims to achieve recognition, visibility and adequate resources for education for democratic citizenship (EDC) and human rights education (HRE) as a core obligation for the formal, non-formal and informal education throughout Europe. We advocate for independent human rights and democratic citizenship education and contribute to an improvement of the framing conditions, especially in the non-formal learning field.

DARE vzw is registered under Belgian NPO law (Ondernemingsnummer: 480.114.168) as a non-profit organisation (vereniging zonder winstoogmerk) and has its legal seat in Belgium. The network consists of more than 40 members from 20 countries in Europe.

<https://dare-network.eu>