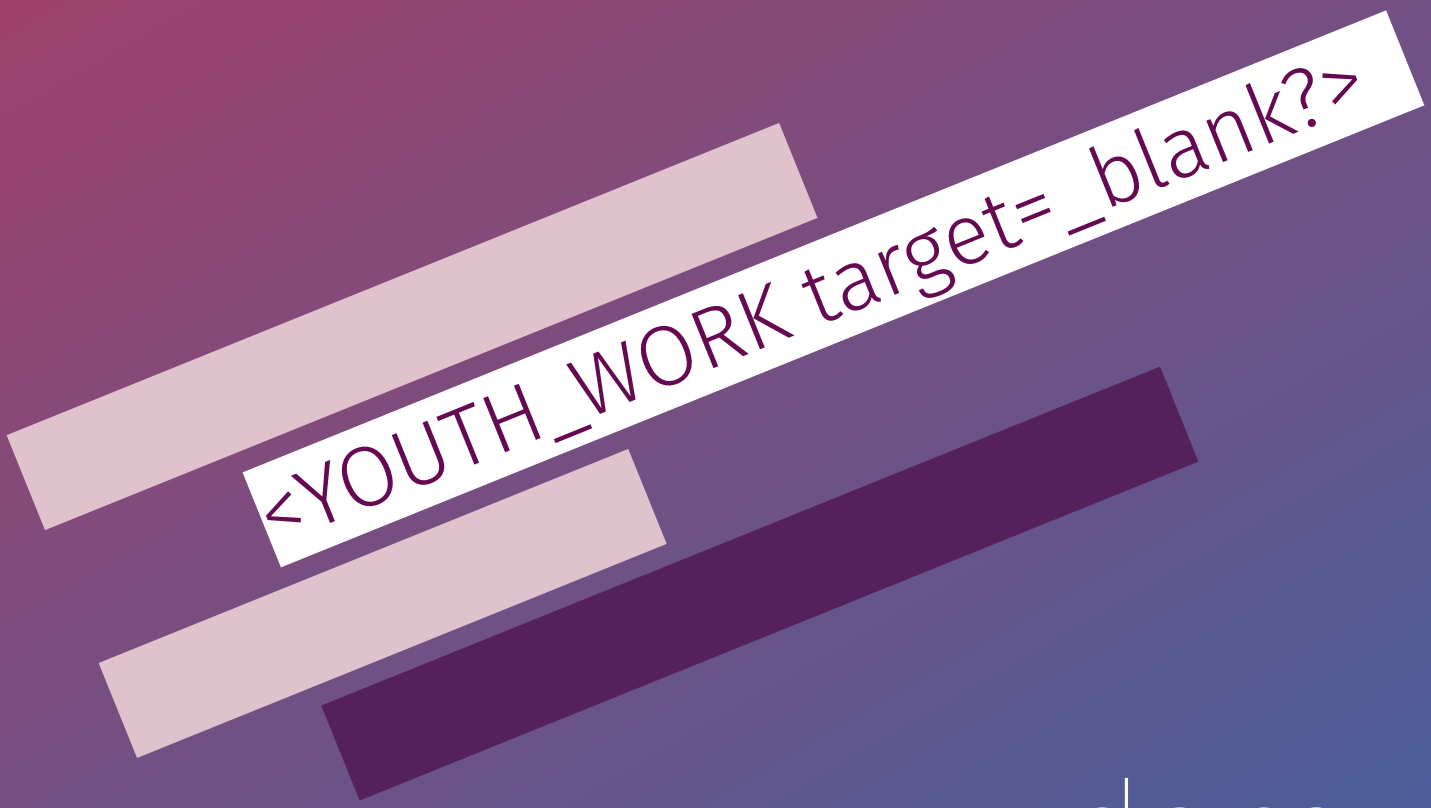
European Youth in the Digital Transformation

The Contribution of Education for Democratic Citizenship and Youth Work to Pedagogies of Digitality and to Digital Empowerment



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Introduction

Young people experience digitalisation as a reality and not as ‘new’. This is a distinction to other generations, who are witness to the transition, or also have experienced several waves of digitalisation in different areas of life (work, private, social). In this regard, one cannot moan unawareness or practices/habits of a younger generation but must take into account the perspective of digitality as the first normality in young people's lives.

Digital Youth Work[1] itself can be seen as a result of youth work encompassing the various socio-political and economic developments of digital transformation in a processual and youth-centred way. The aim is to accompany young people through the various aspects of digitalisation that they encounter in their everyday lives. This analysis tries to identify key elements of transformation processes for the field of youth, namely for those where power reflection and emancipation are important.

From the perspective of non-formal learning as emancipatory and power-critical pedagogical practice, this analysis also describes the potential of **Education for Democratic Citizenship and Human Rights Education (EDC/HRE)** for mutually filling these spaces and why EDC/HRE is a necessary perspective in discussions on digital youth work, digital competence digital citizenship education, media pedagogy, informational pedagogy.

HOW TO READ THE ANALYSIS?

This analysis is based on practices collected by the partners of the DIYW ROAD project, with a focus on the EU and national contexts of the partner countries. It is not an exhaustive or comprehensive study of all the diverse practices involving digitality in youth education. Rather, it is an exploratory analysis aimed at identifying issues that have not yet been addressed systematically or comprehensively. It seeks to challenge what is often taken for granted and to explore how digital transformation intersects with democracy, citizenship, and rights within the field of youth work. The analysis is divided in to three main chapters:

1 The specifics of Digital Youth Work vary significantly across different countries due to cultural, social, and technological contexts. Each country adapts digital tools and platforms based on its own educational systems, youth policies, and available resources. The way digital youth work is implemented also depends on the level of access to technology, internet infrastructure, and the digital skills of both youth workers and the young people themselves. Understanding these national specificities is key to designing effective and contextually relevant digital youth programs.

Environment and digitality: making environment a key subject of digital transformation. This dimension is important since it connects the twin transitions (digitality and climate) we face in our societies.

Identity and digitality: acknowledging digitality/onlife as key determining condition in adolescence of a youth which grows up under the condition of a digitally co-determined life, where digital key transformations are not yet to happen, but already happened.

Governance of digitalisation: asking for aspects of empowerment, active participation and access to decision-making on technology governance affecting the socio-political dimension of digitalisation and youth. In how far are young people – as the demographic cohort in Europe that is democratically ruled out – supported to govern decisions on technology.

Each of the chapters provides a view into available data and research, concepts and educational approaches on the field.

Second, the chapters take **conclusions** mirroring the assessment of existing practices and conversations with youth workers on the topics. Each conclusion section also offers questions to identify and critically discuss **blank spaces in youth work**. The perspective here is to ask for the accountability of youth work in relation to the content of the chapters – pointing on aspects that are relevant for democracy. The blank spaces can also be read as an indication of the **potential for EDC/HRE**.

ON DIGITAL YOUTH WORK TERMINOLOGY

There are several European entry points on terminology. In the Youth field its mainly the term **Digital Youth Work**, which connects a youth work practice perspective and an EU expert group working definition. Digitalisation is among the key transversal thematic priorities of the European Erasmus+ Youth Programme too. However, one needs to be aware that the term has not made it into every countries conceptional and professional discourses.

From an educational perspective mainly the Council of Europe´s approach of Digital Citizenship Education (Council of Europe CM/Rec(2019)10) is to mention here, as well as the many and diverse practices in the field connecting media pedagogy and digitality (recently focussing on AI and similar phenomena). The EU's DigComp competence framework (Vuorikari et al., 2022) and the materials that complement it or are derived from it are also important at this point. DigComp provides a horizon where to orient the development of digital skills.

Aside, there are various national or field specific approaches that connect vast attempts to get a catch on the – perceived complex fields – of digital transformations: data activist awareness raising, campaigns on specific phenomena, programs directed at specific skills development – often not with a clear educational focus.

The term “digital youth work” originated in Finland in the summer of 2012, when European youth work organisations met to discuss the impact of digitalisation on youth work and its practices (Kiviniemi & Touvimen, 2017). “Digital youth work” is the term accepted in Europe (Harvey, 2016; Kiviniemi & Touvimen, 2017) and it is perceived as a vital part of youth engagement practices, defined as:

An area of youth work that implements digital technologies to enhance outcomes of youth-centred initiatives (Harvey, 2017).

In 2017, the European Commission expert group on risks, opportunities and implications of digitalisation for youth, youth work and youth policy, set up under the European Union Work Plan for Youth 2016-2018, developed the following definition:

“Digital youth work means proactively using or addressing digital media and technology in youth work. Digital youth work is not a youth work method – digital youth work can be included in any youth work setting (open youth work, youth information and counselling, youth clubs, detached youth work...). Digital youth work has the same goals as youth work in general, and using digital media and technology in youth work should always support these goals. Digital youth work can happen in face-to-face situations as well as in online environments – or in a mixture of these two. Digital media and technology can be used either as a tool, an activity or a content in youth work. Digital youth work is underpinned by the same ethics, values and principles as youth work. Youth workers in this context refer to both paid and volunteer youth workers”
(European Commission, 2017).

Both definitions are appropriations, they shed light on guiding ideas of youth work and connect mainly to questions of how digital technologies themselves are implemented, taken up and shape/affect youth work.

Digital Citizenship Education (DCE), developed by the Council of Europe in the educational field, is defined as:

"Empowerment of learners of all ages through education or the acquisition of competences for learning and active participation in digital society to exercise and defend their democratic rights and responsibilities online, and to promote and protect human rights, democracy and the rule of law in cyberspace."
(Council of Europe CM/Rec(2019)10)

DCE understands digitalisation as technical process and a basis for democratic culture which needs to be navigated by citizens. However, aspects related to **governance and power-critical reflection of the technologies themselves** remain in the background (with the exception of ethical governance of AI).

A quick glance on youth work in different European contexts however sheds light on the limitation of the term 'youth work' as such: the layout and structural set up in the different European countries varies widely – Youth organisations, independent youth work structures in the CSO sector, social work, etc. Often it even remains unclear which secor is politically responsible for youth work. From an educational perspective one could conclude on **"youth work happens where young people are"** – as the least common denominator.

So **where** happens digital youth work and what is it? Where do young people make digitalisation their subject? Where do young people develop capacities on digital technologies? Where do reasoning and conceptual considerations on digitalisation happen? And, in which fields does the appropriation of digitalisation among young people take place (non-formal, informal, formal education)?

THE POLITICAL DIMENSION OF DIGITALISATION

The more digitalisation becomes a powerful policy area for European countries, the Council of Europe, or the European Union, the more this exclusion of political questions related to digitalisation can be seen as a void. From this somewhat broader perspective, certain basic aspects of digitalisation become visible, each of which has a socio-cultural-economic impact dimension in addition to a technical one:

DIGITAL TRANSFORMATION

A social, cultural or economic reorganisation of communication, infrastructures or services, economic or cultural practices and of the state – made possible by information and communication technology.

Datafication: Computers (from desktops to smart bulbs) and the services they are connected to become ubiquitous in our everyday lives. The digital self emerges beyond a mere mapping of our analogue identities.

Platformisation: Collaboration, exchange, culture or work are mediated by digital infrastructures (platforms). Participation on platforms becomes necessary in many areas of life. A certain digital-economy model of platforms aims to prevail by dominating the market.

Globalisation: Computerised hardware becomes affordable and a consumer item in Europe. Value and production chains are internationalised.

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Network expansion: The need for network structures and the resources required to maintain and expand them is increasing.

Energy and resources: The share of digitalisation-related practices in human resource consumption is increasing permanently

► Source: Competendo https://competendo.net/en/Digitalisation

Consequently, learning should focus more on the impact and consequences of digitalisation on society, as well as on the efforts we make in our modern democracies to steer and manage the digital transformation. For the EU the policy program "for the Digital Decade" formulates the objectives of digital policy (EU 2022/2481).

DIGITAL DECADE POLICY PROGRAMME 2030

"Promoting a human-centred, fundamental-rights-based, inclusive, transparent and open digital environment where secure and interoperable digital technologies and services observe and enhance Union principles, rights and values and are accessible to all, everywhere in the Union."

► European Union (L 323/4 2022)

A central element is **intensive use of data**. The European Data Strategy (EC COM 2020/66 final) declares that the EU's share of the global data economy should at least match its economic strength in the future. It sees data as the decisive fuel ("The value of data lies in its use and re-use"; EC COM 2020/66 final) and EU attempts (most recently with the Data Act; EU 2023/2854) to balance the digital economy's desire for data with fundamental rights. This can be illustrated by the European Health Data Space: On the one hand, the further use of health data for business and research is to be accelerated, while on the other, individuals are (also) to be given control over their data.

EUROPEAN DATA STRATEGY

"Citizens should be empowered to make better decisions based on insights gleaned from non-personal data. And that data should be available to all – whether public or private, big or small, start-up or giant. This will help society to get the most out of innovation and competition and ensure that everyone benefits from a digital dividend. This digital Europe should reflect the best of Europe - open, fair, diverse, democratic, and confident."

► European Commission (COM 2020/66 final)

With the ROAM-X Indicators for Internet Universality, the UNESCO provides a tool through which governments and other stakeholders (also youth work and non-formal

education) can assess their national Internet environments and make recommendations for improvements.

UNESCO'S INTERNET UNIVERSALITY INDICATORS

R – that the internet is based on human Rights
O – that it is Open
A – that it should be Accessible to all, and
M – that it is nurtured by Multistakeholder participation.

These key principles are set alongside **X-cutting indicators** concerned with transversal themes such as gender and the rights and needs of children, sustainable development, environmental impact, trust & security, and advanced technologies

▶ Source: Internet Universality. (UNESCO, 2024a)

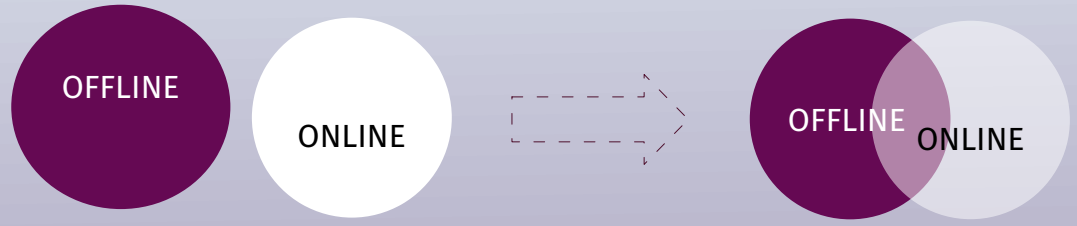
THE POSTDIGITAL PERSPECTIVE

The developments and the EU's high ambitions also show us the long history of network and digital policy and technical development. Youth teaches other generations to put aside their attributions to digitalisation (digitalisation would be a disruptive and new phenomenon) and rather to perceive the transformation as evolutionary and normal. In other words: looking at it from a **postdigital perspective** (Jandrić et al., 2022). Instead of emphasizing on the dichotomy of analogue and digital it is more realistic to assume that both are **mutually dependent and have a common history and present: "**We have long lived in a 'new' society and can now better understand what their early theorists like Manuel Castells ('network society' describes the characteristic social structure of the information age'), Nicholas Negroponte ('like air and drinking water, being digital will be noticed only by its absence, not its presence') or Marc Weiser (explaining the vision of 'ubiquitous computing') were getting at" (Zimmermann, 2025, p. 351).

POSTDIGITAL PERSPECTIVE: THE NEW IS NOT THE DIGITAL

The digital as a new phenomenon. Disruption.

The digital and the analogue overlap and complement. Evolution.



The illustration on the page before shows: When digitalisation becomes an integrated part in the whole society it cannot any more be treated as a separate phenomenon to the analogue. Cyberbullying is connected with physical threats of a young person. Digital identity with the appearance of real persons. The quality of e-governance has impact on the 'real' governance. Mastering 'the digital', means in that sense, to **integrate reasoning about digitalisation in all kind of socio-political discourses** instead of leaving it to the digital experts or to ‚digital politics'. Furthermore, a post-digital mindset suggests that we should unlearn to be stunned. Instead, we should develop curiosity and critical thinking and, above all, focus on the socio-political goals of 'the digital'.

Regardless of whether one considers oneself an apologist for digitalisation or a critic of some of its foundations and manifestations, this perspective accepts that **digitality** is a crucial feature of modern society and culture. Some also understand the term 'digitality' to be particularly related to cultural aspects: Accordingly, the term describes how **culture and social relationships** are (pre-)shaped by digitalisation and how these develop in digitalisation.

We are sceptical of a normative concept of digitality – it is not about 'keeping up with digitality', becoming 'more digital' at all costs. From the EDC/HRE's point of view, the aim is for people to realize themselves in a democratic culture, which is also a **democratic culture in the digital world**, to contribute to it and to develop it further.

Since there is no alternative to 'digital', it is all the more important, when thinking about the future of our democratic societies, to consider the alternatives that arise from the digital. This learning of 'the digital' is less agitated, but integrates "an 'accountability' of the digital to look behind the promises of instrumental efficiency, not demanding its end, rather establishing critical thinking about the very real impact of these technologies increasingly permeating social life" (Jandrić et al., 2018, p. 895).

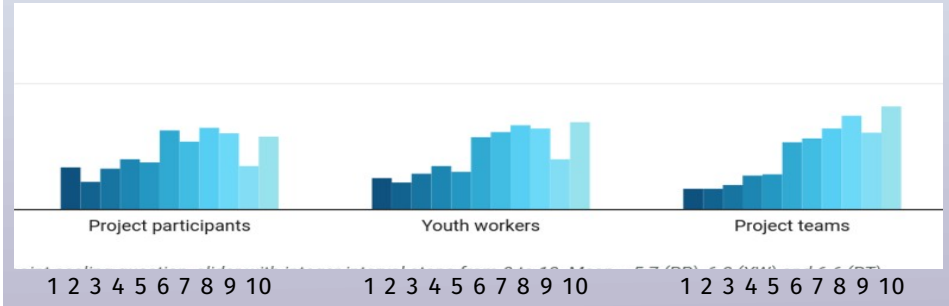
Postdigital perspectives show youth work and non-formal education that it is sometimes not a good idea to chase after new trends with extreme nervousness or to be driven by the feeling of having to make an effort because you are not keeping up. Trusting that the train won't leave because you're on it anyway, post-digital youth work also looks to the left and right of the tracks: Where could the journey go, what technology do we need for it? How do we ensure that trains run safely and accessible?

THE YOUTH VOICE

The RAY-MON Survey evaluates Erasmus+ projects. The findings regards the degree of perceived digitality of European youth projects allow for a balanced perspective. Digitalisation seems to be a blended part of most activities, although obviously in different intensity.

HOW DIGITAL WAS YOUR PROJECT?

Participants, team members and youth workers in Erasmus + Youth projects



▶ Source: Horta Herranz et al. 2024, p. 19; RAY Transnational Dataset youth n=7.567, youth workers n=5.296, team members n=3.845

The digital co-determination of society is a fact. Youth work and the concept of non-formal learning as education that promotes the emancipation of young people and their self-determined further development in the process of "appropriating the world" must also convey to the digital realm. Understanding youth work as emancipatory, empowering, anti-discriminatory, power critical, participatory and democratic practice, a critical view on technologies impacting young people could be assumed. Which includes addressing critically digital media and technology as genuine subjects of youth work. It should also ask how young people can effectively exercise their rights and control options that have future consequences.

Is there a dialogue with citizens and especially young people on paths of digitalisation and what a specific European path looks like? The bigger picture rarely plays a role. It is all the more important that EDC/HRE takes into account the larger political context. The focus of this analysis is on the spaces, settings, conditions and approaches that support capacity development among youth to become confident and critical navigators of digital technology.

IN A NUTSHELL

In a nutshell from our analysis the following picture emerges:

Young people encounter digitality i**n different youth work and educational fields**. In many European countries school (formal education) and out of school (non-formal) education are key. Following the different principles and guiding ideas of these sectors, different aims connect to learning digitality.

There is a prevalent focus to **reduce digitalisation to digital learning** and digitally supported and enhanced learning. A focus which is changing only slowly.

Youth work **sets a too narrow focus on specific phenomena** such as trending apps, social media, hate, fake and disinformation, harm, or well-being/mental health aspects of technologies. While singular phenomena are clearly tackled, the 'bigger picture' remains foggy. There are vast archipelagos of similar projects.

Two approaches can be characterised as guiding: 1) Developing **skills** and literacy to understand and use/make use of dominant digital technologies. Skills development often is described as digital competence development – but in any settings only vaguely connected to European digital competences frames or policies. 2) taking up digitality how young people encounter it **in their life realities** – which often means a media pedagogical focus on trends and emerging phenomena.

Youth work debates on European level happen in a **small bubble** of some organisations with specific expertise, knowledge and conceptual ideas that 'can walk the extra mile'. The interdisciplinary and cross-sectoral exchange between education, technology and policy is very limited.

Power critical perspectives on the transitions are widely missing: The often heard argument against such efforts is the mere complexity of digitalisation.

Also approaches that address the **governance and rights dimensions** – specifically relevant to supporting young people's voices in decision-making about transition pathways that affect their futures on a large scale are lacking.

1. Environment and Digitality

Environment and digitalisation are both meta-developments. Their impact extends beyond the individual, individual households or regions. In addition to the question of how individuals relate to them, citizens and states must understand their systemic relevance: What measures contribute significantly to positive change in countries and the world, do they complement each other in a positive way? What objectives and regulations need to guide these developments politically and socially? We have identified three areas for this analysis:

First, the **material side** of digitalisation and how it (not sufficiently) contributes to sustainability and circularity.

Secondly, politics and business widely agree that digitalisation contributes to **combating climate change** and should be promoted. This approach thus becomes a question for policy and democracy-related youth work.

Thirdly, digitalisation has created a **culture of using services and devices** in which environmental orientation is or should be embedded in the digital world. Lebenswelt-oriented youth work takes, or should take, the environment as a relevant criterion and value in its work: **Digital lifestyle**.

1.1 THE MATERIAL ASPECTS OF DIGITALISATION

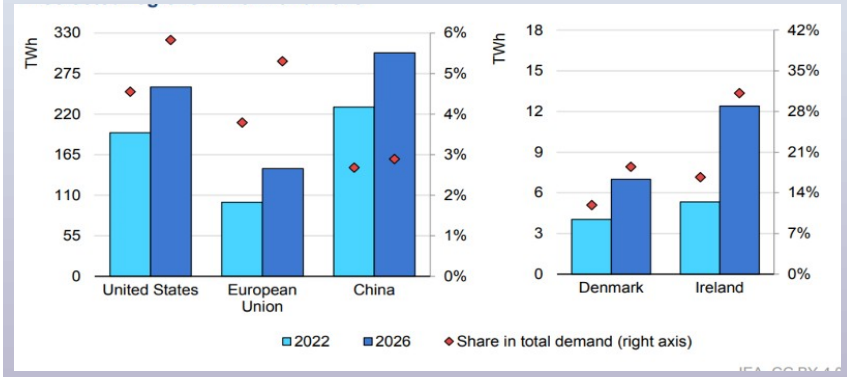
The material side includes, on the one hand, the raw materials that have to be used to produce devices and, on the other, the energy to operate the internet and platforms or to use services. This consumption of raw materials and the resulting material traces (such as consequences of the extraction of raw materials, production of hardware, etc.) are in tension with the idea of the Internet as boundless and immaterial. The cloud ultimately lives in very large, very hot and very electric server farms and energy demand increases the more AI usage is mainstreamed all over the world.

DATA CENTERS: ENERGY DEMAND IN EU

In 2020, Servers and Data Storage products consumed 48 TWh/a of electricity in the EU. Without measures, this is projected to **increase of 45 %** (to 70 TWh/a) in 2030.

▶ Source: European Union, 2024a

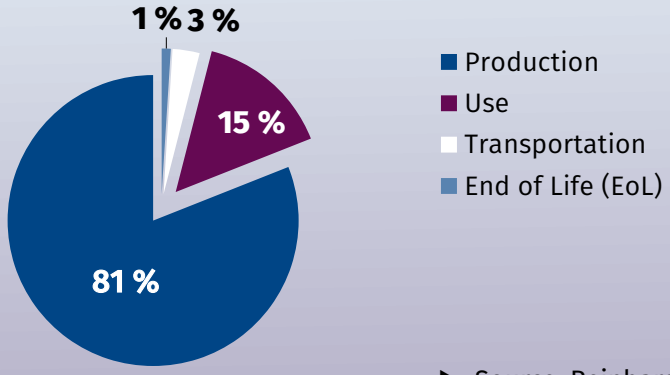
GLOBAL DATA CENTRE ELECTRICITY DEMAND 2022 - 2026



▶ Source: IEA 2024,International Energy Agency (IEA), 2024, p. 33

Vodafone Institute and Wuppertal Institute assume the highest potential for efficiency in longer hardware usage. Also Eco-Institute assumes a high potential for more efficiency in **reducing manufacturing and extending usage** (Gröger et al., 2021)

CO2 FOOTPRINT OF AN IPHONE 14



▶ Source: Reinhard et al. 2024, p. 10.

In order to reduce the ecological footprint the problem of obsolescence would need to be addressed:

Objective obsolescence:	**Functional obsolescence:**	**Subjective obsolescence:**
cannot be repaired, cannot be used (e.g. software incompatibility)	less convenient to use	appears outdated or 'old school'

Apart from the consumption of raw materials for energy and hardware production, electronics also generate waste. This e-waste is increasing. As a lot of e-waste is sold to poorer countries, where recycling takes place under socially and ecologically highly questionable conditions, this is a global problem too.

E-waste is the **fastest-growing waste stream in the world**; between 50 and 60 million tons are produced every year. According to the Global E-waste Monitor 2024 by UN and ITU the following countries produce most E-waste per capita in Europe:

TOP 5 GLOBAL E-WASTE PRODUCERS

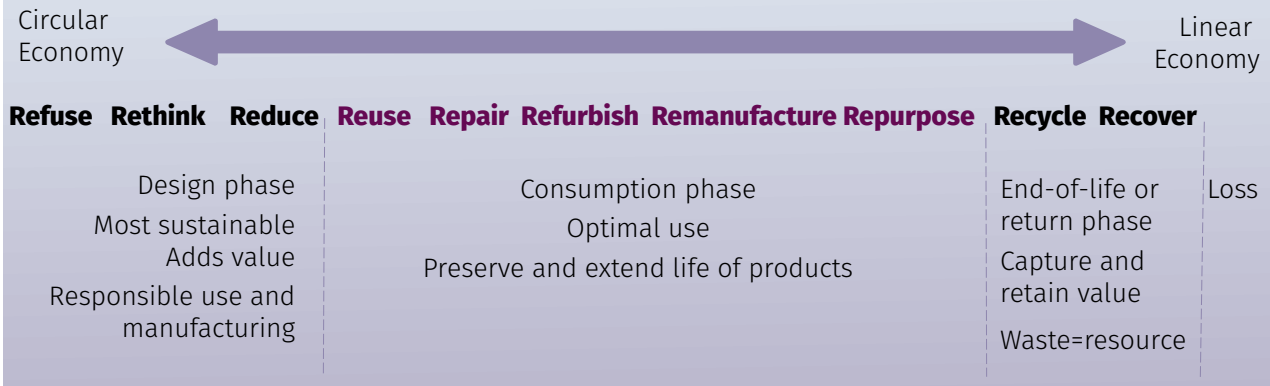
1. Norway **27 kg**
2. United Kingdom **25 kg**
3. Switzerland **23 kg**
4. France | Iceland | Belgium | Netherlands | Denmark **22 kg**
5. Germany | Ireland | Luxembourg | USA **21 kg**

Global average:
7,8 kg per capita

▶ Source: Baldé et al. 2024, p. 120 ff.

A big expectation to digitalisation is also that it will contribute to a circular economy (illustration below), for example through "intelligent" cycles. At the same time, the graphic shows that the strategic aim is not only to recycle raw materials as much as possible (more on the right side of the spectre), but also to reuse or continue to use products in a high-quality processed state (the very left side of the spectre):

CIRCULAR ECONOMY



▶ Source: Circularise

In addition, the circular economy also affects the digital lifestyle itself, as more and more consumed products are either digital/electrical. The EU right to repair was introduced 2024 and focuses on electronics/hardware (Circular Electronics Initiative, EUC COM(2020) 98 final; EU Directive 2024/1799). The **EU regulations** on standard cables and connections represent a high-profile approach for effective waste reduction with benefits for citizens.

However, larger political goals are countered by the tactics of manufacturers to prevent longer usage cycles. For example, by not supplying repair centres with original spare parts, by trying to prevent repair with other parts, by overloading old hardware with software updates. Labels and databases that take into account environmental (such as

EPEAT) or social standards are occasionally taken into account when purchasing hardware in companies and administrations. They often do not include consumer devices. In general, this categorization into business and consumer devices shows that consumers should be motivated to consume hardware in faster cycles.

Some enterprises are trying to explore the field of used ICT and probably close a niche by selling **refurbished** devices. Repair cafés and online guides and groups for hardware repairs support users in the **repair** process and also help them understand how their device actually works.

1.1 CONCLUSIONS – MATERIAL SIDE OF DIGITALISATION

E-WASTE

The topic of e-waste seems to have been taken up occasionally, especially in the field of global learning.

MATERIAL: E-WASTE

Material: Global e-waste. Educational material for IT and electronics with a strong global learning focus, created by EPIZ e. V. Center for Global Learning in Berlin → LINK

Material: Power critical educational resources on digitalisation. By F3_kollektiv: digital_global → LINK

Smartphone Raw Material Suitcase: Educational material originally developed by the Nature History Museum Vienna and distributed in Germany by IASS Potsdam – Institute for Advanced Sustainability Studies. → LINK

Simulation game: mining in the rain forest? A game about challenges and chances of raw material deployment by Germanwatch: (German). → LINK

CIRCULARITY

Some connect awareness for the environment with an idea of circularity that also includes the digital sphere. This applies not only to conscious use of hardware and the avoidance of e-waste, but also the use of alternative software (such as free and open software).

By pioneering a more sustainable and alternative digital culture so far they seem the only ones, alongside some smaller players who see themselves as digital civil society or hackers, who pursue this form of awareness-raising in the broader sense of education as awareness-raising for alternatives.

REPAIR AND HACKING

Learning how to fix, repair or repurpose devices, or how to get out of a proprietary software environment with a limited life expectancy, is mainly self-directed and do-it-yourself. Although it is now much more accessible thanks to online tutorials and websites such as Ifixit, or self-help workshops offered by digital civil society, hackers or repair cafes. Youth work doesn't seem to have developed specific educational programmes or workshops on this topic on a larger scale.

ENVIRONMENTAL LEARNING WITH DIGITAL TOOLS ≠ LEARNING ABOUT THE DIGITAL AND THE ENVIRONMENT

There is a lot of practice **in a digital shape and offering tools** to learn about environmental issues. One example is the Spanish project 'Reciclando con Inteligencia Artificial' (LINK) which uses machine and automatic learning. In the subchapter on 'data', there are also mentioned projects that collect environmental data, for example in citizen science. Other projects make materials for environmental education online available. In our analysis, we would like to emphasise that the form of a digital tool or format does not automatically make a project a place of learning 'the digital'. From the perspective of Education for Democratic Citizenship, the **reflective component on digitalisation** is often missing: Focusing on the impact of digitalisation and taking into account the social implications associated with digitalisation as a topic/culture/structural principle in society – for example the impact of AI on the environment or waste production. This does not question the quality of the materials and projects – but to avoid misleading expectations, one should define them as **learning with digital tools**.

BLANK SPACES

Youth work can **benefit from the perspective and experience of organisations** that have made digital sustainability one of their goals and part of their culture. It is not just about addressing e-waste and recycling, but also about developing more sustainable practices, including in the learning space: Alternative operating systems, privacy-friendly platforms for collaboration and sharing, open educational materials (OER) or Creative Commons. This builds a **bridge between attention for waste and reflection on the digital lifestyle**, which is part of the third part of this chapter.

The generation of **energy** in order to feed the growing global energy demand – within this the data centres – is generally perceived as one of the most pressing problems, but did not find it yet into youth work.

The EU has shown in the past that it has great potential to set incentives beyond its borders to reduce the ecological footprint of digitalisation. Most recently, this happened with the standardization of connection cables and the enforcement of the right to repair. However, **EU regulations** in this field are not reflected in youth work

offers. On the one hand, youth work can accompany the current developments and projects and thus contribute to a more European public sphere. On the other hand, it can take a critical look at the current regulations and how they work. This finding actually applies to almost every policy area, but especially to activities that fall within the scope of the internal market (such as the sustainable economy), as it can have a particularly strong impact there. Although the **right to repair**, the **repairability** of hardware and problems of obsolescence have long been recognised as a legislative problem, projects or pedagogic materials that would address this seem to be rare.

The **established concepts** for an **environment-sensitive education and youth work** still underestimate the digitalisation. For instance, UNESCO: While the ROAM-X indicators include the environmental dimension (2024a), this does not spin over into the education promoted by the organisation. “Education for Sustainable Development”, “Climate Change Education” or Greening Education” are more or less digitally blind. And UNESCO’s guidance for “Teaching and learning for climate action” promotes a positive picture of digitalisation rather based on hope that smart cities reduce the environmental impact of inhabitants (UNESCO 2024b). Shouldn’t we challenge this assumption and instead facilitate a discussion about **how and under what conditions** AI and digitalisation could have a positive impact on grid management and beyond?

The European DigComp Competence framework includes environmental protection as one aspect of safety (“protect the environment from the impact of digital technologies and their use”, Vuorikari et al, 2022). The green competence framework just reminds in its last sentences (which are not part of the descriptors) that educators “must take into account the impact of digital technologies on sustainability” (EC JRC, 2022).

Global learning on digitality is important. However, raw materials are only one aspect. Other globally unevenly distributed **ecological burdens in connection with hardware production** are also important for understanding the ecological footprint of digitalisation: environmental pollution from production facilities, the often unsustainable energy production required for production. And, in a broader understanding of sustainability, the often problematic social conditions.

1.2 EFFECT OF DIGITALISATION ON CLIMATE CHANGE

According to Eurobarometer, young people perceive the topic as important. The 18-24 years old in the EU identified “climate and the environment” in Spring 2024 as the **most important mid-term policy area** for the next five years (34 %), followed by security and defence (27 %) and economy (26 %) (European Union 2024c, QB3). Here youth prioritises the topic higher than adults. However, if Europeans are asked for the most important issues in their country at **the moment**, prices or the international situation are ranked

as more important by Europeans (European Union 2024d, QA3). If youth is asked for short term priorities, “ensuring peace and security” (40 %), job opportunities (34 %) and quality education (31 %) rank higher than development of renewable energy (20 %), the only environmental short-term policy aspect asked for. Older generations rank this aspect even higher (average: 22 %) (European Union 2024c, QB11ab).

Short-term and more general goals seem to diverge somewhat. *Higher Education for Good* asked youth globally on their worries about the future. In Europe the cluster with answers on “environmental issues” was mentioned by 11 % - after “financial situation” (25 %), “failure” (16 %), “career and professional development” (16 %) and “health and wellbeing” (13 %) (Foundation Higher Education for Good, 2023, p. 86). Environment was the **only sociopolitical topic among the top concerns** of youth in Europe and Central-Asia.

MAJORITY WANTS DIGITALISATION FIGHT CLIMATE CHANGE

32 % say very important **42 %** fairly important. **15 %** not very important
8 % not at all important

▶ Source: Special Eurobarometer 551, QC 1.2; n=26.346; Europeans older than 15

Also a 2024 Eurobarometer confirms that the topic understood as a policy field is still of certain importance for European youth:

TOP TOPICS FOR EU POLICY FROM THE YOUTH PERSPECTIVE

Rising prices, cost of living	**40 %**
The environment and climate change	**33 %**
Economic situation and creation of jobs	**31 %**
Social protection, welfare and access to healthcare	**29 %**

▶ Source: European Union (2024b) Q2 | n=25.863, EU citizens, age group: 16-30

The basic assumption that digitalisation can and must contribute to greater sustainability is very stable. „More than half of respondents (54%) believe that digital technology can play a major role in solving the problems posed by climate change“. (Vodafone Institute 2020, p. 4). 14 % are sceptical and assume that digitalisation is worsening the situation. Even if the sceptics are a small group, these 14% have good reason to distrust the promise. Rebound and induction effects always seem to cancel out or reverse the higher energy efficiency. In addition, the mass use of AI will significantly increase energy requirements. The difficulty of forecasts and scenarios is that they cannot forecast new technical developments and changed strategies.

A MAJORITY BELIEVES DIGITALISATION HELPS TO FIGHT CLIMATE CHANGE

54 % Digital can play a big role…	…to solve the problems of climate change (highest support: PT: 68 % | IT: 65 % | PL & HU: 64 %)
14 % Digital is one of its reasons	(highest support: FR: 33 % | PL: 18 % | DE: 17 %)
32 % Neither/nor	(highest support: NL: 47 % | FR: 44 % | DE: 43 %)

▶ Source: Vodafone Institute, 2020, p. 8; n=1.000 in 13 EU countries

In 2017, Greenpeace thought that the big platforms with their ambitious environmental targets were the clean role models, but the main problem was the others who were not following suit: "But while the number of companies committed to a 100% renewable future continues to grow, many of the 100% RE commitments are being pursued on a path that is much more status quo than transformational" (Greenpeace 2017). In 2024 due to the broad use of AI in large language models it becomes clear that the goals cannot be reached. Instead, AI providers are trying to replace sustainable renewable energy with nuclear energy (Sokolov, D. AJ (17/10/2024). Two effects describe how efficiency gains from digitalisation have so far been relativised or even reversed.

REBOUND EFFECT

Discrepancy between savings made by increasing efficiency and actual energy consumption. Direct: Savings in the data centre are invested in more computing power. Indirect: Savings in the data centre are consumed elsewhere.

INDUCTION EFFECT

New consumption practices are enabled and simplified by technology. E.g. more travel through easier online bookings, more parcel traffic through online trading.

If one looks at where savings potentials are concretely identified, then above all in the **management of infrastructure.** Smart grids and smart cities suggest that resources such as roads, energy, urban greenery, water and others can be managed particularly efficiently through digitalisation. The Spanish Association for Digitalisation (DigitalES) brings this technology-economic expectation on the point:

"AI and data analytics technologies have the potential to accelerate the analysis of large volumes of data, enabling better understanding of environmental challenges and providing solutions to them. This will provide mechanisms for improved environmental planning, decision-making and monitoring of environmental threats. Specifically, AI could help reduce energy and resource consumption, promote decarbonisation and boost the circular economy" (Digital ES, 2022).

AI's potential lies in minimising energy use (green AIs) and finding sustainable solutions to environmental problems (impact by AI). However, the costs of digitalisation and the rebound and induction effects mentioned above put efficiency gains into question. But also other effects are associated with the digitalisation of infrastructure:

SMART GRIDS AND DATA SHARING

Datafication of public networks such as energy, water, roads and heating is expected to result in **more effective management** and bottom-line savings, as UNESCO typically describes in its educational material:

"Digitalisation and artificial intelligence (AI) play a key role in making transport more efficient and less polluting, through automated mobility and intelligent traffic management systems" (UNESCO 2024b).

The prerequisite is the **monitoring of consumption and usage in real time**.

This leads to a **dilemma between privacy and savings benefits**. In particular, the conditions under which personal consumption and usage information is shared and deleted must be discussed. From an EDC/HRE perspective, smart environmental protection cannot be at odds with data protection and privacy.

RETHINKING THE SMART CITY. DEMOCRATIZING URBAN TECHNOLOGY

By Evgeny Morozov and Francesca Bria. The authors are regarded as important voices in the critique of the corporate-driven datafication of the city. They develop alternative ideas of "non-neoliberal smart cities". → LINK

Smart infrastructure in democratic societies should therefore consider the diverse **implications of smartness on people** from the perspective of democracy-related education and not just look at potential solutions in singular fields of action. If citizens wear smart watches it cannot be concluded, that they also are willing to share health data with private companies. If citizens would have their energy supply monitored, it cannot be deduced that they would also agree to the seamless and deanonymisable monitoring of their journeys on public transport or their cars.

The **efficiency of digital infrastructures themselves** as well as the social impact of the digitalisation of ecologically relevant infrastructures should therefore be part of any education on smart cities. The findings of many research projects on the implementation of the smart city, which share a differentiated view of the datafication of urban infrastructure, can also be used for this purpose.

WILLINGNESS TO SHARE DATA

Would you be willing to share your data with the state for the benefit of the environment?

53 % **Yes, but** only under strict conditions (e.g. ensuring anonymity, transparency of date use)
Highest values: GR: 64 % | HU: 62 % | EE : 61 %

22 % **Yes,** certainly.
Highest values: IT: 30 % | PT & ES: 28 %

15 % **No.**
Highest values: EE & DE: 20 % | FR: 19 %

▶ Source: Vodafone Institute, 2020, p. 11; n=1.000 in 13 EU countries

In the overall picture, the question arises to what extent it is individual citizen behaviour which has a significant influence on the societal CO2 footprint, or decisions by companies or politicians. As well as personal (cultural) change, systemic shifts become crucial. The greatest savings are likely to be achieved in the largest polluter areas:

SECTORS WITH BIGGEST GREENHOUSE GAS EMISSIONS IN EUROPE

Electricity, gas, steam and air conditioning supply	**643.863.779.000 tons**	22 %
Manufacturing	**507.753.976.000 tons**	18 %
Agriculture, forestry and fishing	**376.420.539.000 tons**	13 %
Transportation and storage	**247.785.105.000 tons**	9 %
Water and waste	**117.020.432.000 tons**	4 %
Construction	**52.388.960.000 tons**	2 %
Activities by households	**713.678.175.000 tons**	25 %

▶ Source: Eurostat env_ac_ghgfp; 2022, EU 27, 100%=2.888.804.439.000 t

The first area (electricity, gas, steam) also includes the footprint of data centres and energy consumption of digitalisation. This is likely to increase with the widespread emergence of AI.

1.2 CONCLUSIONS – ENVIRONMENTAL IMPACT ON CLIMATE CHANGE

REALISTIC PICTURE OF DIGITAL SUSTAINABILITY

A look at educational practices with young people largely confirms the confident and optimistic picture of digitalisation's abilities to be part of the solution and a driver of smart growth. These practices emphasize often on **potential only** while widely ignoring data or realistic scenarios. Mainly educators from the field of environmental education try to facilitate a more complex picture of digital sustainability, like the below presented examples do:

MATERIAL: ENVIRONMENT

Digitalisation & Sustainability. Educational material for different levels of school education, created by Greenpeace Germany. Addresses critical reflection of students and integrates environmental aspects, but also explores foundational aspects of digital life and economy. → LINK

EGreen project. Educational material on digitalisation and environment with focus on VET (Irish, French, Italian and Estonian). → LINK

Material: Save the world digitally!? Handbook for an ecological, digital and equal future by BUND (German). → LINK

TECH-OPTIMIST LEARNING ON AI OR SMART CITIES

Many templates and materials on smart cities are designed by communications agencies and consultancies. They tend to ignore the ecologic footprint of digitalisation (although using the environment from time to time as a powerful illustration) as well as social and political implications of digitalisation. In this way, the materials represent in majority a company-friendly view of platformisation and exclude relevant aspects of a human-centered digital transformation such as democratic governance, alternatives to surveillance, open data...

These materials are important as they reflect the dominant position in public discourse and can be a relevant source for thematic debates. However, one-sidedness should be avoided, all relevant aspects and interests, should also be taken into account. Due to the unequal distribution of resources for producing materials, it is necessary to search more intensively for alternatives and promote them, for example, by collaborating with environmental organisations or grassroots digital NGOs.

FOCUS ON SCHOOL EDUCATION

Environment NGOs that develop pedagogical material very often focus on schools. Their approaches are less optimized for non-formal education spaces and less focused on the discussion of needs, dilemmas and mindful possibilities. Several mainly focus on personal behaviour, an important aspect, but one that should be accompanied by a systemic perspective, since only 25 % of emissions are caused by household activities.

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The question of the extent to which climate change can be combated with digitalisation is often not asked, but taken for granted. However, **evidence-based learning** ideally with real and realistic data is required for a competent and constructive discussion of the approaches and solutions needed in the future.

Learning on the impact of digitalisation on climate change should include getting to know and critically reviewing active policy and industry measures, in the European context especially the **strategies, investments and self-commitments of EU members**

The roll-out of AI had a very large increase in its use by young people. In environmental terms, this lead to more energy consumption to train the models and for the servers hosting the AIs. The same applies to other technologies. If there is increasing speculation in cryptocurrencies, this will also result in mining and maintaining the blockchain driving up energy requirements. Streaming services increased the energy demand of the Internet.

Especially **where energy consumption is particularly linked to youth practice**, environmental effects of consumption and youth activity should become relevant aspects of digital youth work. Same as other age groups, also young people **behave contradictorily** towards this question. Awareness and action do not consistently coincide. Offering programs that name the contradictions and help young people to resolve them at least somewhat for themselves would be an important element of sustainable digital youth work. Dealing with dilemmas and tensions is part of the core of EDC/HRE and should be applied at these points – without pointing fingers but visualizing the options and consequences.

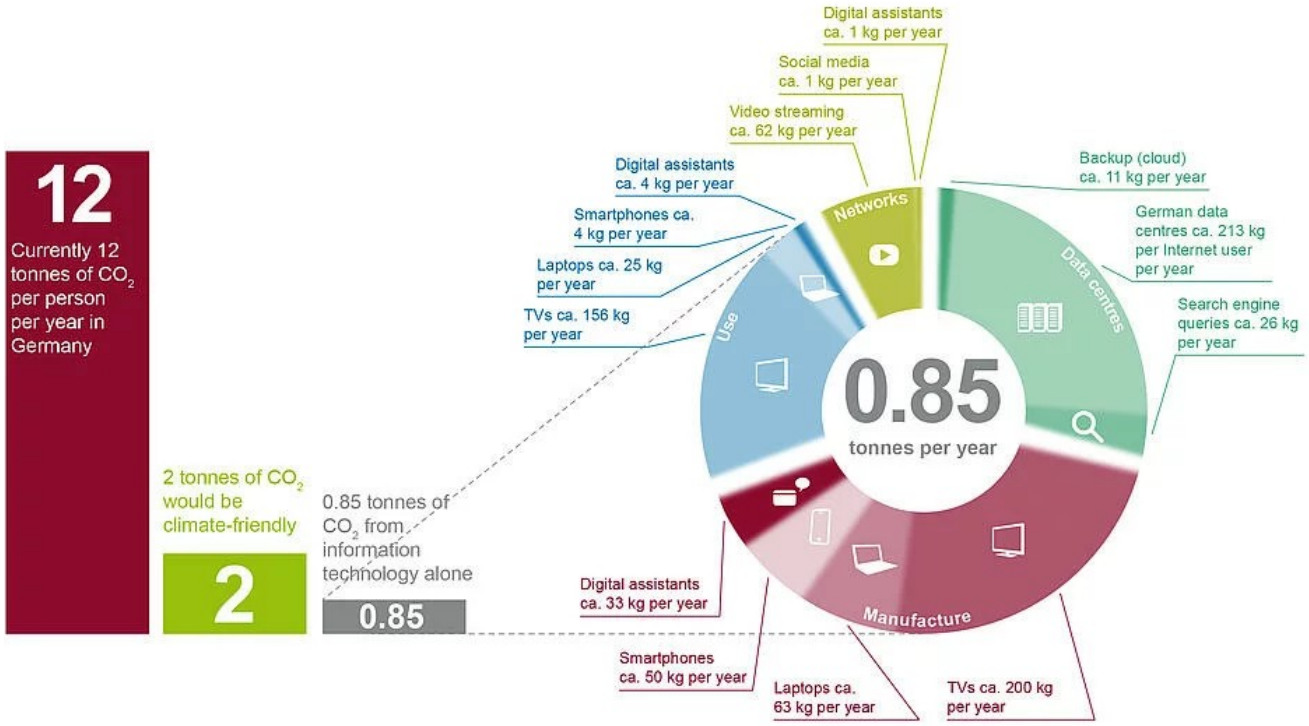
"As technology continues to develop, new digital possibilities are constantly triggering new rounds of enthusiasm and the old promises of progress are being forgotten. This is facilitated by the fact that it is difficult to measure the ecological costs of a single digital application because the digital infrastructure extends across a complex network of different platforms and apps. However, the failure of dematerialisation is tangible: cities are still full of cars, consumption and production have been boosted rather than reduced by the new ordering platforms, and the energy consumption of the internet has risen rapidly with the increasing use of digital media."

Source: Konzeptwerk Neue Ökonomie, 2022, p. 63

1.3 DIGITAL LIFESTYLE

The footprint of the digital lifestyle is understood as climate impact by everyday use of technology including the energy consumption associated with its production and operation. Although it has been assumed that environmental issues are particularly close to young people's hearts, a quantitatively higher interest in **changing concrete cultural habits in the short term cannot be confirmed** – although the motivations may defer (I. e. more long-time users in older groups of population). Studies and educators say that interest in the environment by youth in general is declining. However, as we have shown in section 1.2, it is still one of the larger policy areas to which young people pay particular attention. This subchapter looks at how being aware on environmental aspects of digitalisation gets reflected in how we behave.

CO2 FOOTPRINT OF THE DIGITAL LIFESTYLE



▶ Öko-Institut (2019). Data for Germany, CC-BY-SA 2.0

Öko-Institut has examined the CO^2 footprint of the digital lifestyle for Germany, but in principle similar data can be assumed for other European countries too. As shown in the example of an iPhone 14 (in 1.1), the main potential that users can directly influence to reduce their carbon footprint is to **use IT for longer**. The other important factors – energy consumption and streaming – are only partly dependent on users, but mainly on those who provide the content (energy here means the energy required by the platforms, not the energy required by the hardware). In summary, production can become less resource intensive or devices can be used for longer.

YOUTH MILIEUS IN GERMANY (REGARDS ECOLOGY, POLITICS, CONSUMPTION)

		female	male
Distanced	15 %	56 %	44 %
Economy-focused	30 %	57 %	43 %
Pragmatic	19 %	< 50 %	> 50 %
Idealistic	36 %	57 %	43 %

▶ Source: BMUV, 2024, p. 11 n=1.150 persons, 14-22 years old, living in Germany

TYPICAL SMARTPHONE USERS/CUSTOMER GROUPS

Performance-sensitive aesthetes	20-25 %	less sensitive
Tech enthusiasts	15 %	
Pragmatics	25-30 %	
Sustainabilty enthusiasts	10-15 %	↓
Price-sensitives	15 %	
Long-time users	10-15 %	more sensitive

▶ Source: Reinhard et al., 2024, p. 19

If one understands 'youth' not as uniform age group but rather as representatives of different milieus, it stands to reason that education should be geared towards the various needs and interests, for example by offering different thematic starting points.

At this point, also a **cultural aspect** comes into play. As “subjective obsolescence” suggests, sustainability depends on the willingness to use devices for longer periods of time. If new devices are elements of social participation and integration, the conscious use of older hardware could be read as a step in the opposite direction (which does not only apply to young people). Education in this regard is meaningfully linked to needs, subjective and objective dependency and individual paths to more sustainable consumption. Accordingly, this culture is currently developing more in youth milieus that generally value sustainability, are interested in second-hand use or are post-materialistic.

The **meta trend of ubiquitous computing**, i.e. removing devices first from server rooms and then from desks and turning them into everyday companions, has spurred on digitalisation in recent decades. At the same time, miniaturization has led to the loss of

the modularity that used to be typical. Devices have become smaller and more intuitive, but not more comprehensible, repairable and customizable. This is compensated for by low prices, but contributes to the environmental footprint of the IT industry.

In niches, the positive experience with **modularity and standard parts** of the past is being tried with current needs. Manufacturers such as Fairphone and Shiftphone rely on a modular design and (comparatively) long update supply. Some projects and providers are dedicated to modular laptops.

OPEN HARDWARE

"While the demand for a 'right to repair' has already reached many people, the promotion of open source hardware is still growing. With open hardware, knowledge transfer is not limited to repair or maintenance, but rather more comprehensive. Open source therefore includes repairability."
Open Knowledge Foundation Deutschland

▶ Source: Voigt & Wessolek, 2023, p. 51

Alternative software (especially **free and open source software**, FOSS) enables longer-term use and customisation, as well as privacy protection and control over the digital shadow. Digital sustainability is fundamentally linked to the dissemination and strengthening of open and free software. If this is to play a greater role in shaping the digital culture of the future, youth work work needs to take steps to increase its publicity and create acceptance for alternatives to the digital industries' interests that are dominating the markets.

OPPORTUNITIES TO STRENGTHEN FREE AND OPEN SOURCE SOFTWARE

- Free operating systems (such as Linux), alternative app stores (such as F-Droid)
- Use proven quality programs (such as LibreOffice, Firefox, or Thunderbird)
- Subsequent breaking of software locks after software support has ended
- Setting of standards by public bodies, including educational institutions
- Co-financing of the further development of free software by the state (according to the idea public money - public code) or by youth work organisations

1.3 CONCLUSIONS – DIGITAL LIFESTYLE

REPAIR, DIY & HACKING

While in former decades the idea of hacking and fixing was strongly connected with a digital youth culture, the terms seem now to stand for other self-organised activities.

Many maker spaces and fab labs across Europe (offered by different stakeholders, especially youth centres, libraries and NGOs) offer youth spaces to test out their abilities out and to follow their manual-digital interests.

In order to circumvent the subjective and functional obsolescence of products, e.g. through reprogramming, upgrading, conversion, and by working towards greater social acceptance of the use of 'old' electronics youth work could strengthen and promote the **hard- and software DIY aspects** more. Apart from the environmental aspect, it would also be innovative to supplement the often cognitive learning about digitalisation with a practical learning experience such as repair.

CLOSE TO LIFE

Many activities in media education or digital cultural youth work engage with young people close to their everyday experiences. However, the aspect of sustainability in everyday digital life seems often to be left out.

Various practices claim to **connect environment or sustainability with digital pedagogy**, but this can often be **questioned** upon closer inspection: often educational materials on environmental topics are just offered on digital platforms or claim that the environmental aspect consists in making materials available in non-print formats. Materials and data on raw materials and resources often do not make any reference to digitalisation.

EXAMPLES: PERSONAL CO^2 CALCULATORS

The CO^2web Observatory. By the Environmental Ethics Chair at the University of Alcalá (Spanish and English) → LINK

Internet's CO^2 Emissions Calculator. By EcoTree, a Danish environmental enterprise (in the field of reforestation) (Danish, English, French, German, Dutch). → LINK

Climate Lifestyle Check. Joanneum Research (Austria). → LINK

Climate Calculator. By World Wildlife Fund (WWF) in UK (English). → LINK

My Ecologic Backpack. By the environmental research center Wuppertal Institute (German and English). → LINK

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The use of digital devices is important for young people in many dimensions: as means of communication, as an entertainment device, as a tool for many activities. Being as users dependent on functionality, at the same time devices are a status symbol. There is a contradiction to the environmental goal of prolonged use or repair. This is where environmental education **touches on aspects of cultural participation and cultural values**. When longer or shorter usage of devices is determined by trends, lifestyle or cultural expectations, then education can uncover the barriers and motivations for repair, reuse and re-use. The question is how youth wants to resolve this tension.

Furthermore, digital youth work could target at repairability and adapting hard- and software also as a **(manual) competence**, in connection with organisations of self-help, labs or digital hacktivists.

Analytically, digital practices could better consider the ecological point of view and include reasoning about alternative options to challenging or even problematic digital practice. In example options as alternative to streaming, very energy-demanding AI, proprietary systems, large platforms...

2. Identity and Digitality

Adolescence is a phase where youth is confronted with **irritations and role confusions.** Alongside the questions “who am I” versus “who could I be?” identity formates by **exploring** oneself in various dimensions – ethnic, social, sexual, physical, gender, policies lifestyle, relationships, personal attitudes, self esteem, values culture, class, to name but a few. Identity as the totality of characteristics, attitudes and affiliations that characterise, describe and distinguish a person from others or relate to them, becomes questioned, negotiated or re-established in a non-linear and sometimes chaotic **process**. Role models and peers, social relationships become increasingly important.

In digital co-determined realities it becomes evident that the formation of a digital and analogue identity cannot be separated. Digital identity has become an inherent part of personal identities. In conclusion, digitality as essential and determining dimension of identity formation becomes a crucial dimension for the field youth work and education. Today's dominant form of digitalisation is based on the use and exploitation of data that is particularly important or meaningful for one's own identity. Digital devices also accompany us in our daily lives. This chapter deals with the following aspects:

– Visibility and self-creation of the digital picture

– The self as a raw material of the digital economy

– Health & wellbeing and the physical body

– Identification and Prediction

– Active consumers

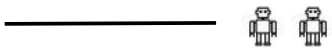
If identity includes v**isibility and (self-)perception**, then profiles and platforms today influence how young people present themselves or are seen. If this includes **distinguishing oneself from others and assigning oneself to groups**, then it is important to consider that the platforms also put a lot of effort into categorizing and assigning young people. That being said, the way in which persons classify themselves, and define themselves socially, has never been solely in their power. But today, platforms and data brokers in particular and the models they use and construct for analysis and classification (i. e. psychometric profiling) have a significant influence on this.

If data is the fuel of the digital economy (i.e. the role that oil has in the pre-digital economy – as a **raw material** and as a monetisable commodity), then problems with privacy, unauthorized use of data, careless sharing are not regrettable exceptions but fundamental.

In digitally co-designed social environments, one's **self-image is in tension** with the image that (private and public) services and companies derive from a person's data and also share with third parties..

Technology is becoming a social actor itself through miniaturization and ubiquity in everyday life. If people increasingly work intuitively with machines, devices make our everyday lives easier; also, communication with others is increasingly mediated via devices and services. This relation also has an impact on our **physical perception,** our physical **capabilities** and on our mental **well-being**.

The digital is – above all – a very large market. Platforms, programmers, services and device manufacturers want to earn money and because digitalisation has made consumption in general easier, youth work needs to be more interested in the role of young people as digital **consumers.**



2.1 VISIBILITY AND SELF-CREATION OF THE DIGITAL PICTURE

From the above, it can be deduced that overview and control are different for users and platforms. The most challenging parts are those not visible or accessible for an individual. Youth and any learners need assistance and rights to information and support to claim and exert control – which, for instance, is the possibility for a simple request for information according to the EU General Data Protection Regulation (GDPR).

JOHARI WINDOW

	known to me	**not known to me**
known to others	Known self	**my blind spot**
not known to others	hidden self	unknown self

▶ Luft, J.; Ingham, H. (1955). The Johari window, a graphic model of interpersonal awareness

Platforms extract personal information from metadata (i. e. the time when a post was shared, from where, what camera shot a picture) and from user interaction (a person liked several posts from person X but rarely from person Y, read articles with a certain topic, searched for a certain keyword, was in a certain city or on many different places). These data can be combined with other data – open accessible personal data, consumer data, data sold by so called data-brokers...

As a result, the platforms/providers create a picture of what a person appears to be, and this can be much more detailed than one would assume: the person's "blind spot" tends to be bigger (not necessarily accessible for the whole public, only for some and not necessarily connected with a clear name but identifiable).

Also the share of "unknown self" can shrink, since some elements not known to anyone can be predicted on the basis of other user's data or by calculating probability: In example, who likes topic "X" and article "V" at late evenings and buys a book with title "Z" and has a friend like "Y" – behaves similar to a person of the type "W".

Digital footprint	The traces and personal data accessible and collatable for others. In particular, visible when others search for you. A goal of digital competence is to support learners to master (or "curate") this footprint.
Active digital footprint	traces we intentionally leave behind, when we make deliberate decisions on the internet.
Digital shadow	information we unintentionally leave online when browsing, sometimes without even knowing (=passive digital footprint).

According to the Weizenbaum Institute's 2021 study 'We and AI' (despite many attempts to encourage greater use of platforms), young people assume that their **interests are not sufficiently represented** by the companies implementing systems and platforms:

WHEN IT COMES TO DATA COLLECTION, MY INTEREST AS A USER MATTER LITTLE IN COMPARISON TO THE COMPANY'S INTERESTS...

▶ Source: Gagrčin et al. 2021, p. 34 | n=3.000 (DE, FR, GR, IT, PL, SV), 18-30 years old

I AM WORRIED THAT MY PERSONAL DATA ARE MISUSED BY OTHERS

70 % rather agree **17 %** neither **13 %** rather disagree

▶ Source: Gagrčin et al. 2021, p. 32 | n=2.810 (DE, FR, GR, IT, PL, SV), 18-30 years old

WHAT DO YOU THINK COMPANIES KNOW ABOUT YOU?

50 % race/ethnicity **49 %** sexual orientation **43 %** political belief **32 %** religion

Source: Gagrčin et al. 2021, p. 33 | n=2.889 (DE, FR, GR, IT, PL, SV), 18-30 years old

These answers show that young people are not naïve. At the same time, their precautions to protect their privacy seem to be lower than self-assessment: those who rarely read the small print at the same time cannot say that they would be informed and understand terms and conditions. The step from understanding to the ability to refuse data seems to be an additional challenge for nearly 50 %.

WHAT PEOPLE USE TO PROTECT THEIR PRIVATE DATA

78 % Privacy settings on social media
73 % Location tracking
70 % Change username/password or delete your old media accounts
65 % Private mode in your browser
59 % Ads block software
35 % Anti-tracking tools
11 % None of the above

▶ Source: European Digital Learning Network, 2020

UNDERSTANDING TERMS AND CONDITIONS ON THE USE OF PERSONAL DATA

Yes: **77 %**

▶ Source: FRA Fundamental Rights Survey 2020, Europeans, n=4.195, age group: 16-29

HAVE YOU READ THE PRIVACY POLICY IN FULL BEFORE AGREEING IT?

80 % No
14 % Yes & sometimes
6 % Always

▶ Source: European Digital Learning Network, 2020, p. 12

ABILITY TO DECLINE THE USE OF ONE'S DATA IN SERVICES, WEBSITES OR APPS

Yes: **53 %** No: **46 %**

▶ Source: FRA Fundamental Rights Survey 2020, Europeans, n=4.195, age group: 16-29

Is it trust in the ability of the state and the EU to regulate? Is it the doubt, that terms and conditions as well as other measures are effective? Some youth workers suspect that this is the manifestation of an unprovoked social contract of the digital age: Don't read, agree, and most important is that things work.

POSTDIGITAL, NOT POST-PRIVACY

- **66%** of respondents don't approve of internet providers monitoring their digital communication for suspicious content
- **67%** rely on encrypted communication apps like WhatsApp or Signal
- **56%** consider their anonymity crucial for their activism and for organising politically among peers

▶ Source: EDRi (7/3/2023) n=8.000 young Europeans

2.1 CONCLUSIONS – CREATION OF THE DIGITAL PICTURE

SELF-PROTECTION

The data shows the demand for more promotion of protection in general but also to support learners in actively taking steps – understanding what opportunities they have, and implementing different measures. Several practices with a focus on prevention are aimed at **minimising risk**, i.e. privacy-compatible and data-sharing minimizing settings or correct behaviour as a user. Education and empowerment cannot be limited to preventive advise to young people on how to avoid a sub-optimal digital footprint or how to better control or manage their reputation.

Few go the extra mile to explain what the platforms do and what is behind the settings you agree on, in addition to providing practical advice. Youth work and education can and should make visible how digital "being online" – in any life situation – contributes to profile building and behavioural prediction or evaluation. This would facilitate a more comprehensive understanding of data collection included in privacy-related education.

MATERIAL: SELF-PROTECTION

Peerbox.at. Toolbox by ECPAT Austria - Arbeitsgemeinschaft zum Schutz der Rechte der Kinder vor Sexueller Ausbeutung (German). → LINK

Youth Voice in Online Safety Toolkit. Resources for use with 3-18 year old to start conversations about different online safety issues by Childnet. → LINK

Data Detox Kit. Information about Artificial Intelligence, digital privacy, security, wellbeing, misinformation, health data, and tech and the environment. Provided in 43 languages by Tactical Tech Collective → LINK

Net Alert. New research on privacy and security translated to 'normal' users by Citizen Lab (Canada) → LINK

GETTING TO KNOW THE PLATFORMS' VIEW OF THEMSELVES

Looking at things through the eyes of the platforms is a very interesting approach, as it demonstrates with real data what would otherwise have to be described in a cumbersome and rather abstract way. In other words, looking at the categories by which advertisers can distribute their ads, learning how Meta on Instagram automatically captures images and thus categorizes the accounts that post them (like Our Data Mirror). But these approaches are not widespread.

SHOWCASES: DATAFICATION & ALGORITHMIC ANALYSIS

Our Data Mirror. Learning about the mechanisms of data collection and the impact this practice can have on society. The website of Interactive Media Foundation offers also a practical experience – demonstrating how Instagram is analysing their personal profile → LINK

How Normal am I? Tijmen Schep demonstrates, how artificial intelligence draws conclusions by just judging a person's face: beauty, age, life expectancy, body mass index and even emotional state. During this task, participants learn about the underlying technology and how it comes to its conclusions. The tool was developed in the frame of the Sherpa project. → LINK

Escape Game: General Solutions. A sixty-minute escape game developed by the German et network (Evangelische Trägergruppe für gesellschaftspolitische Jugendbildung, German) → LINK

BIOMETRIC SURVEILLANCE

Inspiration on how to confuse biometric surveillance systems or how to (not) escape ubiquitous public surveillance comes primarily from the artstand activist world.

EXAMPLES: BIOMETRIC SURVEILLANCE

Workshop: Drag vs. AI. Workshop on facial recognition that explores identity, gender presentation, face surveillance, artificial intelligence, and algorithmic harms by Algorithm Justice League. → LINK

ACCESS AND NATIVITY

The saying of young people's digital nativity is a category which needs to be questioned. Young people experience digitalisation as a reality and not as 'new'. This is a distinction to other generations, who are witnessing the transition, or also have experienced several waves of digitalisation in different areas of life (work, private, social). In this regard one cannot moan unawareness or practices/habits of a younger generation but has to take into account the perspective of digitality as first time normality in young people's life. Nativity in this regard does not mean to be firm in coding and technology but rather **taking technology as given**. For this to happen, a user does not necessarily have to perceive the digital services and devices surrounding them as digital. However, the access dimension, where young people enter and encounter digitality consciously remains unclear and blurry to them.

Interviews with youth work practitioners state that young people's **access to digitalisation** and to their digital visibility is problematic. There are social, economic, financial factors defining access. Status plays an important role. The smartphone is often the only Internet device, the only access is the phone number or the nickname created on a social media app, while its owner is not aware that the smartphone itself is a digital instrument. Where does digitality start, the consciousness about what traces one leaves, often remains widely unclear.

Youth work seems often busy with providing these basic accesses to digitalisation: what is the web, how am I connected to it, what is my entry point?

RIGHTS, LEGAL FRAMES AND EUROPEAN DEVELOPMENT

Youth Work and Education have to remember that rights were not developed by chance, but are also the **result of political debate**. In this context, **knowledge about concrete entitlements** is also essential: only if I know my rights I can claim them. Only if I know about alternatives I can utilize them. In this respect, it remains a task to skill up youth work to be **informed about legal frameworks** (specifically the ones competing worldwide). Also youth workers/educators should be properly trained and prepared to utilize them. What do the rights deriving from GDPR, DSA or AI Act mean for a young person? Where to inform deeper, where to get support?

A more political perspective on these regulations could help to strengthen a sense for digital safety. In example: becoming familiar with the EU's AI Act – prohibition of manipulative techniques, exploitation of vulnerabilities, social scoring systems, real-time remote biometric identification. To mention here also: the Digital Services Act's (DSA) prohibition of targeted advertisement to minors or banning ads that target users based on sensitive data. Such, the **European legal framework and policy development** should be part of any education related to digitality.

2.2 THE SELF – RAW MATERIAL OF THE DIGITAL ECONOMY

These developments to bring the computed devices into everyday life and to datafy and technically monitor everyday situations are not accidental or technologically inevitable. They are the **result of technological and scientific decisions, technology policy decisions and research**. The term "smart", understood in its original meaning as clever or intelligent, is used in the digital context to market a type of digitalisation that relies on the close connection between man and machine, digital and physical identity. As this has an effect on us humans and has a huge impact on our sense of autonomy and our ability to control our own identity, this meta perspective must be a central element of learning towards digitality.

Smart systems **must be able to collect personal and identity-related data**, as this is a prerequisite for their intelligence. However, **surveillance conflicts with the personal interest in privacy and autonomy**, regardless of the socially intended goal. This basic tension cannot be resolved, but can only be mitigated at various points (such as transparency, data protection, the right to be forgotten, etc.).

Mayer-Schöneberger describes how the **big data** approach is accompanied by a shift in influence towards companies that have direct access to personal data: "In the future, less power will be given to those who merely analyse data than to those who also have access to the data itself. This development will ground in fact the unease of many people towards organizations and companies that collect and evaluate ever larger amounts of data" (Mayer-Schöneberger, 2015). More and more personal data is being accumulated and its value is increasing.

There is a particular relevance for any pedagogy on digital identity: the targeted collection and utilization of personal data is one issue. But more complex systems also target more fundamental aspects of the personal. The ultimate goal is not only to learn something about people, but the processing and analysis of the collected data should increasingly help to **influence or predict personal behaviour** (with the aim of gaining ownership of data and monetizing it).

Targeted advertisement If a platform analyses, what type of content a person reads, the way how a person expresses (emotional, rational…), how connected and interactive the person is (lonely wolf, introvert, expressive, in the centre of a network, posting pictures with or without humans), how steadily the person engages on a platform (ongoing, intensive, randomly…), this can help to address the person with tailored advertisement. Targeted advertisement would mean to offer different ads to different persons. Although the Digital Services Act of the EU bans targeted advertisement to minors and profiling of users according to categories of personal data, such as ethnicity, political views, sexual orientation, this ban does not cover adult persons.

The analysis models work out for targeted advertisement, but also for **other purposes**, in example, for measuring their creditworthiness (insurance companies, banks), their risk to become criminals (law enforcement), for filtering job applicants based on a profile (employer), for identifying motivations to vote (political parties) or to measure the risk that a persons is becoming sick (health insurance).

"Data about the behaviours of bodies, minds, and things take their place in a universal real-time dynamic index of smart objects within an infinite global domain of wired things. This new phenomenon produces the possibility of modifying the behaviours of persons and things for profit and control" (Zuboff 2015 p. 85).

Zuboff calls this "big other", the development of data capitalism, alluding to Orwell's "big brother", but also pointing out that it is not (authoritarian) states that are driving the technology here, but rather investors. "It is a ubiquitous networked institutional regime that records, modifies, and commodifies everyday experience from toasters to bodies, communication to thought, all with a view to establishing new pathways to monetization and profit" (Zuboff 2015 p. 81). She names this regime as **"surveillance capitalism"**, also the title of her recent book (Zuboff 2019).

Surveillance capitalism emphasizes the extractivist aspect of platform capitalism (extracting personal data from user interactions in order to transform this data into monetary value). **Platformisation** and **platform capitalism** are the terms that describe the larger political economy context.

Platform capitalism (Srnicek, 2016), or what some describe as a neo-feudal overcoming of capitalism (while others reject the term tech-feudalism or similar as too bold and not sufficiently considering the transformative capacity of capitalism), argues that the growth of large metaplatforms is due to their achievement of the feat of monetizing actually rather less scarce goods such as data by becoming market owners and having their own markets. The terms platform capitalism and digital capitalism (Staab, 2019) describe a further development of capitalism, the associated cultural-social changes and also the rise of new influential players (compare Gilbert, 2024).

Although the market in our context is a key driver, NGOs, the state and citizens (and young people) are an also an active part. Therefore, there is a joint responsibility which variant of digitalisation can prevail in the fundamentally diverse digital ecosystem.

PLATFORMS

Digital infrastructures that facilitate and shape personalised interactions among end users and complementors, organised through the systematic collection, algorithmic processing, monetisation, and circulation of data.

▶ Source: Poell et al., 2019, p. 3

PLATFORM POWER

The possibility of the platform owners to set the rules for the interaction between users unilaterally or to influence the behaviour during the interaction. Monitoring users activities and extracting data.

If the change in capitalism is the larger socio-economic-political context in which young people move as market participants and in which their data is generated, used and traded, then big data and AI is the technical context that makes it possible. From the perspective of digital identity, there arise raises questions not only about the purposes and goals behind, but also about the approach itself.

Geuter (2024, p.82) points out the reduction of diversity in generative AI models: “And so ChatGPT primarily creates a digital mainstream: dominant white, dominant Western, dominant English. Because this is the data that dominates the internet and digital databases and with which the system was trained.” Just as AI systems capture slices of reality and of the self or stitch them together as a statistically interpreted image, **personalisation** offers people a limited picture of reality and its possibilities, so that it is better to speak of “pre-selection” or “individual limitation” - contracts, content, prices, personal networks. The inability to influence these personalization specifications or to change them in the user’s interests demonstrates the power of the platform.

In addition, it is only applied psychology that makes it possible for users to accept that their data will be passed on, and for users to increasingly and intensively shift their communication to platforms. This has to do not only with smartness, but also with borderline mechanisms and incentives (gamification, dark patterns, usage of ranking algorithms with a focus on deeper user engagement...)

It becomes clear that the view of identity from the perspective of the self and from the perspective of a platform are very different, but that the digital self cannot be understood if these two perspectives are not **overlaid**. It is obvious, that in a context characterised by power, persons and especially youth are in an **asymmetrical position**.

TENSION BETWEEN PREDICTABILITY AND CONTINGENCY

“What if big data analysis could predict whether someone would be a good driver before they even pass their driving test? Would we then deny such predicted bad drivers their licenses even if they could successfully pass the test? And would insurance companies still offer these people a policy if the risk was predicted to be higher? At what conditions?
All these cases confront us as a society with the *choice between security and predictability on the one hand and freedom and risk on the other.* But these →

cases are also the result of the misuse of big data correlations for causal purposes — the allocation of individual responsibility. However, it is precisely this necessary answer to the why that the analysis of the what cannot provide. Forging ahead anyway means no less than surrendering to the dictatorship of data and attributing more insight to big data analysis than is actually inherent in it."

▶ Source: Mayer-Schöneberger (2015) https://competendo.net/en/What_is_Big_Data%3F

A paradigmatic change in the course of the digital transformation was that the **boundaries between consumer/user and producer/creator** became blurred. This affects the economy and the way in which services are offered. Cultural industry, the media, social media, and platforms promote an **ambiguous culture of sharing,** often connected with a confusion that things negotiated have also legal dimension (ownership, privacy, liability, etc.). Sharing and access to content created by others and especially peers is very important for youth. In 2019, the protest against the EU copyright regulation (upload filters) showed, to the suprise of many, young people's sensitivity for their idea of sharing culture in the digital world. To address this interest, we need to understand precisely which platforms young people are particularly active on and how these actually work. In 2025, these are:

MOST USED SOCIAL MEDIA PLATFORMS USED BY YOUTH IN 2025

			male	female
WhatsApp	**87 %**	(+11 %)	84 %	91 %
YouTube	**80 %**	(+10 %)	84 %	76 %
Snapchat	**74 %**	(+13 %)	67 %	81 %
Instagram	**73 %**	(+2 %)	74 %	73 %
TikTok	**72 %**	(+7 %)	72 %	72 %
Teams	**35 %**			

▶ Source: Saferinternet.at (2025) Youth Internet Monitor 2025. Youth in Austria, n=405.

According to the researchers of Saferinternet.at gender differences are visible but on decline. In 2025, also ChatGPT gains influence as information medium of youth, while the large platforms have the highest share.

CONTENT, OPINIONS AND BELIEFS

Not only the sharing of personal data, but also **sharing of content, opinions and attitudes** is essential ingredient of datafication.

Phenomena such as information disorder, influencing, or new career paths such as YouTuber or TikToker cannot be understood isolated from an understanding of data capitalism and the organisation of the platforms. Problems cannot be solved without **intervening in the structural settings of platforms**, technical designs or laws.

2.2 CONCLUSIONS – THE SELF

FOUNDATIONS OF DIGITALISATION

These descriptions paint a thoroughly ambivalent picture of the culture of (enforced) data sharing. Digitalisation in the version of the large platforms has an enabling and an extractive dimension, a side that makes rights perceptible and also a side that violates them.

If processing digital identity is the core of a digital market because personal data is an important raw material, it is not possible for individuals to escape datafication or surveillance, or to change the data culture in platform capitalism through individual mindfulness.

This would be a starting point for a more **political but realistic** digital education. Political, because rights and changes in legislation are political per se. Realistic, because young people have so far only been addressed as users, not **as citizens** or **legal subjects**. In regards to the topic identity this would imply learning offers that facilitate basic knowledge on the foundational aspects of technology applied to human identities: In example datafication, personalisation, data capitalism, platformisation, algorithmisation and artificial intelligence.

MATERIAL: PLATFORMED SOCIETY

Handbook: Shaping the economy democratically: Digital Capitalism. Material to global issues, socio-ecologic impact and alternative ways of digitalisation. By attac, Rosa Luxemburg Foundation & Konzeptwerk neue Ökonomie (German). → LINK

Handbook: Learning the Digital. Digital transformation from the practice of Education for Democratic Citizenship and Human Rights Education. Handbook for Facilitators by Democracy and Human Rights Education in Europe. → LINK

Brochure: The Internet, Big Data & Platform. Part of the series: Smart City, Smart Teaching: Understanding Digital Transformation in Teaching and Learning. DIGIT-AL Digital Transformation in Adult Learning for Active Citizenship → LINK

Free My Internet. A graphic journey from infrastructure to shutdowns → LINK

PROMOTING A POWER CRITICAL APPROACH

Analogue to media education on hate speech and fake news, which had also to take into account the **framing conditions** for the media environment, in particular, education on the digital self must take this step to thematise the framing conditions of the digital transformation. In the **power field of digitalisation**, which is shaped by few extraordinary strong players, it is clear that individuals cannot achieve much by acting well and ethically to influence the platform environments: In an environment of hate and polarisation, thoughtful and human single voices are drowned out if they have no opportunity to connect effectively.

This is where subject-oriented education, which firmly believes in strengthening the autonomy and agency of the individual as a central approach to social change, reaches its limits. Digitalisation makes us aware of how **perceptions of self and others are co-determined** by technologies, 3rd parties/platforms, how dependent individuals are on the ability to be identified or anonymized by digital services, to control what aspects of identity become visible to whom, and what information of the world they see.

BLANK SPACES

Collecting data is the core, not a sub-problem. The question shifts from “what can I do to prevent the worst individually” to: “What if we didn't allow this to happen? What attitude to data as raw material do we actually want to adopt? Which political and civil society actors are on our side?”

Up to now, many in youth work and schools have taken a phenomenon-oriented approach to digitalisation. We look at digital developments from a **user** or, one could also say, an affected perspective. The developments in digital transformation are often perceived as **deterministically** (‘it is what it is’). However, the basis of a critical and constructive digital education is to acquire and teach the ability to look at events reflexively, to **adopt a meta-perspective**, to understand and evaluate theories and strategies. Ultimately, this is intended to pursue one goal: To enable people to see opportunities for change and uphold the **possibility of self-efficacy** in digital life.

This can also be understood as pedagogical independence movement **away from the narratives of the digital industry**, questioning the role assigned to individuals, as well as the images of the digital that are evoked (blue, male, cyborg, clean, technical, the matrix, intelligent, ...).

Of specific importance for youth work is to provide and train a **view into less intrusive alternatives**: technically, in terms of tools and platforms used, but also conceptually, from the perspectives of access, governance and publicity.

GOOD PRACTICE: FRAMASOFT COLLECTION

Under the slogan "De-google-ify Internet" Framasoft provides ethical digital tools in the fields "design useful tools". "exchanging with others", "having fun", "organize together", "collaborate", and "development". → LINK

2.3 HEALTH & WELLBEING AND THE PHYSICAL BODY

The question of whether computers and modern media are beneficial or harmful to the development and well-being of young people has been asked for decades and answered in different ways. The question arises, on the one hand, always anew, on the other hand, digitalisation brought new food for thoughts:

– **Impact of datafication:** the exposure to ubiquitous data connection, monitoring and interference. The feeling of overview and control and loss of them.

– The impact of **information disorder and information overload**. Information refers on the one hand to media and content, but also to data about oneself. The sheer volume of data plays a role here, which is challenging and sometimes overwhelming to process. The feeling of being online all the time is also part of it.

– the **change in the body and physical abilities**. This also includes the presentation of physicality and changing perspectives on the body.

HEALTH

A state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. (World Health Organisation WHO)

MENTAL HEALTH

A state of mental well-being that enables people to cope with the stresses of life, to realize their abilities, to learn well and work well, and to contribute to their communities. Mental health is an integral component of health and well-being and is more than the absence of mental disorder.
(World Health Organisation WHO, 2022)

Health and well-being in the digital world should be understood more broadly. Digital health encompasses even more aspects than just the absence of tracking, or the time spent online. In terms of the definitions provided by WHO it is about how a good state can be achieved under the condition of a post-digital world (which includes health and

body-related technology). The democratic perspective asks how a supportive (legal, value and institutional) framework looks like, and what well-being means in democratic pluralistic societies.

Even though, health data is particularly sensitive and valuable. Regards the first aspect, datafication and extraction of personal data, the most unique data to identify someone is body-related data. If data is the fuel of the digital economy, biometric data is the rare cold-pressed oil, sometimes the crucial ingredient

Biometric technology is giving or blocking access for different social groups. It might become a tool for surveilling individuals or groups. „The fear is that facial recognition technology could ultimately lead to a situation where it is no longer possible to walk down the street or go shopping anonymously" (EESC, 2019). In contrast biometric technology is implemented in digital devices. Politically, biometric technology in Europe is classified as a high-risk technology in the AI Act (AI Act Annex III) for:

– remote biometric identification beyond the sole purpose to confirm ones identity
– biometric categorisation, according to sensitive or protected attributes or characteristics based on the inference of those attributes or characteristics;
– emotion recognition.

BUILT IN SENSORS (I. E. IN SMARTWATCHES, FITNESS TRACKERS) MEASURE...

Air pressure (height), acceleration, position, geographical position, pulse, surrounding light, heart frequency, sound/voice, blood pressure, body temperature, iris/retina, fingerprint, face

OTHER BIOMETRIC DATA COLLECTED BY SERVICES OR DEVICES

DNA, iris, ear, signature, style of moving, voice tone, veins, eye movement, keyboard activity...

Increasingly, **relationships** are being established and maintained through technology. If necessary, platforms shape the arrangement (as with dating apps), how people present themselves, according to which rules they are filtered out of the mass of all users, how to get together with them. The dating apps gain more relevance among youth than among whole populations (YouGov, 2023).

Parasociality is the term that describes relations mediated by digital means. Digital tools, apps and recommendation systems enable to build relations to groups, items, individuals. Parasociality can be the one-sided social relation to a famous person (often media or celebrity). "Adolescent boys, in particular, see media figures as role models and discuss their favourite media figures with their peers, whereas adolescent girls' PSRs

with celebrities provide a sense of affiliation and belonging (Bond et al, 2024 p. 242). The (often performance and achievement-oriented) imagery a person provides about her/himself in digital spheres, or the tendency to use certain platforms for communicating relational issues (e.g. using a messenger instead of direct communication for handling a relational problem) is an aspect of parasociality too. Because young people mainly use services via apps and a smartphone, it can be easy to make friends with like-minded people and become part of communities, even without boundaries.

BEING WITH PEOPLE ONLINE...

I find it easier to be myself online than when I am with people face-to-face

		highest	lowest
12 %	always	RO 19 %, PT 16 %, RS 16 %	DE, SK, PL 9 %
17 %	often	FR 26 %, LT 24 %, RO 21 %	PL 10 %, ES 12 %, RS 13 %
32 %	sometimes	LT 38 %, EE 37 %, CZ 36 %	ES 24 %, HR, RO, RS 26 %
39 %	never	ES 52 %, IT 50 %, RS 45 %	LT 24 %, FR 29 %, EE 33 %

▶ Source: Smahel et al., 2020. | n=21.964, age group: 9–16 in 19 European countries

More and more AI systems try to keep in touch with humans by creating the appearance of human communication. At the same time, the recommendation mechanisms and the curation of the platforms limit the view of the world to segments.

There is a dark side too: More and more extremist actors are targeting young people on social media platforms in an attempt to get “parasocially” or personally close to young people.

WHERE YOUNG PEOPLE IN EUROPE FIND THEIR PARTNERS

20 %	friends and family
15 %	dating apps and platforms
8 %	work
8 %	college/university
7 %	While out and about
16 %	I have never had a romantic partner

▶ Source: YouGov 2023 | European consumers, age group: 18-34

The constant presence of digital technology has an **impact on young people's health**, for example on the ability to concentrate, on patience and memory. More, health itself is being used as a topic to increase young people's engagement on platforms: A Spanish

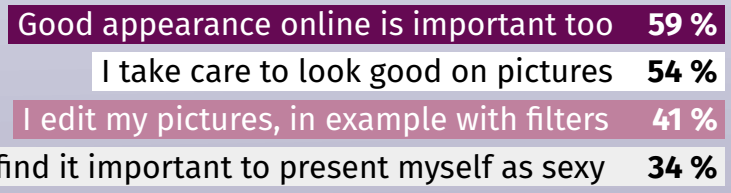
survey concludes: “Marketing strategies take advantage of young people’s growing mental health problems” (Accenture, 2022, p. 12).

Bodies and **body images** have an important role in the adolescent growing up. Social media and its entrepreneurs play an ambivalent role, especially when extreme body images appear normal or desirable. Some platforms have more influence on norms than others. Our interviews with youth workers align to the findings of several studies on the important role of different social media platforms such as YouTube, Instagram, TikTok. They ask to provide more **specific – gender, diversity and female – views**, analysis and practices. Interviews confirm that young people are highly sensitive about the imagery, of their person data (how do I want to be seen) while the technical conditions which form the imagery remain unclear.

Another extreme but relevant aspect is the exposure to explicit pornographic content. 33 % among the 09-16 years aged got in the past year in contact with **online pornography**, 37 % of boys and 29 % of girls (Smahel et al., 2020, p. 89).

BEAUTY IDEALS AND SOCIAL MEDIA (AUSTRIA)

71 % of teenagers: youth compares themselves on the basis of social media networks
65 % of respondents see a connection between content in social media networks and their beauty ideals
33 % think filters make them more beautiful
53 % bought once a product promoted by an influencer



▶ Source: Austrian Institute for applied Telecommunication (ÖIAT) & Internet Service Providers Austria (2024). Austrian youth, age group: 11-17, n=400.

However, young people are learning from adults that digitally mediated ideals of beauty are generally becoming more important – whether in politics, business or culture. Beauty is also a key aspect of the influencer business model.

In sum, digitality offers various forms of developing an imagery of their own: avatars, diverse platforms and social media groups allow for targeted exposure of identity aspects that go beyond or differ from the analogue.

What is perceived as normal, is increasingly digitally mediated. Although this opens also opportunities for breaking up with stereotypical views by posting and presenting more

diversity. On the other hand, amplification of **dominant images of the body** by algorithmic choice might lead to the opposite. In any case, the conversation about digitally experienced normality, beauty and norms is an important entry point into a lifelike education of the digital.

Self-tracking (**quantified self)** in various forms and identities is important for young people (fitness, etc.) Measuring the body is **undeniably part of everyday life** for young people. This does not usually involve extreme sports or the like. Weight-loss apps are, for instance, also popular. The **gender perspective** is interesting too: 39 percent of all female internet users surveyed in Germany use a period app, for example. Females show a higher probability of using health-related apps (Antezana et al., 2022).

> "Females were more likely to think about well-being, stress and social elements (i.e. friendships) before they choose a specific app; whereas males were more concerned with the actual functionality of the apps (i.e. tracking)" (Antezana et al., 2022).

It has long been criticized that apps and devices, but also advice websites, often suggest a **medical accuracy** that they cannot maintain. From five out of 21 period apps tested are reasonably okay, none are recommended according to German consumer protection organizations (Stiftung Warentest 28/09/2023).

It should be mentioned that not only users but also manufacturers have access to personal data and use it in different ways. Furthermore, the design of the analysis tools (what they measure, how they process it, what data they make available) shapes the user's idea of well-being. While some fear that self-tracking would lead to an exaggerated affinity for technology among self trackers and others believe it would open up new opportunities for users, various studies suggest a more sober view. People who track themselves for reasons of health, will be less unbiased about this possibility than those doing it purely out of curiosity (and possibly also often being younger). The possibility of self-tracking may reinforce problematic behaviour. Those who successfully approach their desire for structure and control with self-tracking will be more disciplined than others. Also, young people make use of these opportunities.

While these activities can perhaps be summarized as self-directed and self-organized analysis of body and health data (at least as long as there is no medical necessity behind it), the sharing of health data for research purposes is very much on the rise in the EU. While **digital patient data management systems** are emerging everywhere in European countries with a European Health Data Space established from 2025 on, today's youth are the ones who will have to live with today's implementation decisions the longest. Key issues are unauthorized access, enforced transparency or the possibility of de-anonymization.

TOP 3 SELF-TRACKING MOTIVATIONS

64 %	Out of curiosity.
21 %	Because my device captures relevant data automatically
12 %	Because many of my friends do so

TOP 3 REASONS TO STOP SELF-TRACKING

32 %	Much time investment
26 %	Too much pressure
23 %	Unfulfilled expectations of success

▶ Findeis et al., 2023, p. 9 | snow-ball questionnaire in Germany

The more technology becomes a social actor, is concealed in small, inconspicuous everyday objects or even becomes part of our bodies, the more questions arise as to how to deal with the **physical closeness** appropriately. This concerns, for example:

> Pacemakers or implants; devices in **constant contact** with the body (e.g. smart watches, wrists...); devices in **collaboration** with the body in private everyday life (e.g. robots at work and at home, exoskeletons; devices with **interfaces** for direct human interaction (ChatGPT, smart speakers...).

From the **perspective of those whose bodies are exposed to various barriers,** technical progress is becoming an essential issue. On the one hand, improvements can be made close to the body (prostheses, electronic assistance systems, etc.) or firmly attached to the body. On the other hand, digitalisation poses the risk of new stigmatization and leads to a changed perspective on the (disabled) body.

2.3 CONCLUSIONS – HEALTH, WELL-BEING AND BODY

PREVENTION

A lot of practice is very much focused on prevention, in example addressing “unhealthy” behaviour, online addiction, bullying or well-being. Bullying seems to be a standard workshop offered at schools throughout the EU. All often connected with strategies to cope with it or to act responsibly. Materials are often designed for the digital space, so they often do not focus on the interrelation and interweaving of these phenomena between analogue and digital: material with focus on “cyber grooming” and “cyberbullying” instead on “bullying” and “grooming” and how it affects wellbeing in real life, where these phenomenons often cannot be splitted.

MATERIAL: PREVENTION

Material: Strengthening resilience. Young people in new digital consumption roles by Media Smart e. V. and partners. Although the material aims at resilience it also explores platform mechanisms→ LINK

Ommm online – how we increase digital wellbeing. Material mainly for primary schools by klicksafe Germany, the awareness centre in the Digital Europe programme of EU. → LINK

See through. Prevention for healthy media literacy. Original title: Durchblickt! Educational materials and guidance for parents, students and teachers by the BARMER health insurance, in example, body images, (German) → LINK

Workshops: #ME. Workshops for youth and for educational professionals in Austria which connect the topics body, digital media and emotion. Offered by SaferInternet.At (German). → LINK

Method: Bully the Bottle. Cyber bullying, group pressure, learning a „healthy“group culture in the Peerbox.at. → LINK

EXHIBITION: HUMAN RELATIONSHIP TO TECHNOLOGY

The digital transformation is in the center of this exhibition on youth's relationship with technology and well-being. Created by Tactical Tech Collective. → LINK

BEAUTY

Many programs, workshops or materials address the topic of beauty ideals in a digitally mediatised world and raise awareness of the dangers. One example can be found below:

MATERIAL: BEAUTY

Instagram Beauty Ideals and impact. Material providing facts to Instagram, videos, educators guide and proposals for sessions, mainly targeted to usage in primary schools. By the media service of the land Baden-Württemberg (Landesmedienzentrum) in Germany. → LINK

Body Shining. Project for youth workers and young people from different cultural/social backgrounds to raise awareness about body shaming. Book, toolkit, campaign and workshops → LINK

SELF-TRACKING

Self-tracking among youth is a matter of fact. Digital youth work should also give attention to this issue. Occasional materials can be found. However, much more research is known about young people's relationship to self-tracking and its effects.

MATERIAL: SELF-TRACKING

Method: Tracking us: Quantified self. Based on research on personality types related to the quantified self this method aims to instigate reflection about personal needs and measurement practice (from Competendo). → LINK

Self-tracking in leisure sports activities. Supporting competent and reflective habit towards self-tracking technologies by JFF – Media Institute (German) → LINK

PERSPECTIVES ON "DIGITAL" HEALTH AND WELL-BEING

Technical settings and actions to protect against unhealthy behaviour (I. e. too long engagement, ...) and to facilitate responsible consumption, but also saving users from external threats (e.g. tracking and data transfer, harmful content...).

Health competence - the ability to to maintain a healthy state through awareness, behaviour and concrete measures in a world that is significantly shaped by digitality. To have self-determination over oneself (and one's body) and to be able to protect oneself from mental and physical injury and harm. Use and understand devices and services that contribute to medical health.

Critical health education - addressing what young people consider to be healthy: Examination of the concept of health, which includes reflection on pathologisation, norms and expectations. Addressing the structural conditions for wellbeing in the digital sphere (control of platforms, complaints, protection mechanisms...).

Digital resilience – the ability to persist threats and dangers and to recover from a state of dis-balance.

Digital transformation of health care – development of information, devices and services.

BLANK SPACE

Rarely practices explore the psychological and technical aspects how apps, devices, services, platforms, games are designed and in how far these impact habit, behaviour, health/well-being and growing up of young people. Such, a fundamental question is why computers transformed into the ubiquitous small devices embedded in our life today and what can be deduced from this development for the future. A **power-sensitive youth work** on wellbeing could extend the questions towards: How do the digitalisation and in particular service providers/platforms shape relations, body norms and the idea of well-being? How can youth cope with datafication and tracking and gain ownership and control over health data?

A central question for education is how to **evaluate valid information** in a merely non-regulated biotope of health, fitness, body imagery. Consequently, it connects personal experience with the socio-political dimension of the health-sphere.

Self-tracking should be addressed through education in three, dimensions. First, awareness for medical accuracy. Anyone using apps and tools should have the opportunity to learn to scrutinize and check their analyses and suggestions and not be panicked under any circumstances. Second, reflecting on one's own dealings with digital measurement and one's own relationship to the body. Apps and tools, but also images and norms are present here. Third, the framework of tracking must also be addressed because the way in which platforms shape the “collaboration” between people and services has a major influence on control over the digital shadow and on the idea of the body and well-being.

A central topic of EDC/HRE is who sets norms, what is normal, what should be included in the consensus on normality? A more **critical and political body and ‘beauty’ education** is needed. The aim is not to blame the digital, but to examine the problems that undoubtedly exist and to learn from the rarer but opposite experiences: Some people point out that even images that aren't beautiful according to the norm spread via the Internet and contribute to self-consciousness and self-organisation of those that don’t fit into the norms. Therefore, the power-critical perspective becomes relevant: Can these keep up? Are they adequately represented? The word “political” suspects the idea of prevention work without socio-political reasoning of being unrealistic or even hypocritical.

What role have **young role models**? What makes a follower? What makes an Influencer, whose business is first and foremost based on the exploitation of identity-related data and perceiving followers as a trading good, while proper counselling seems secondary.

There do not seem to be any educational offers that deal with digitalisation and the body and with **digital inclusion**. Even more so, there seem none that problematize the digitalisation of the body from the perspective of people who are exposed to barriers. A related question is that of **access** to digital health. Who can actually benefit from treatment and support?

Although the creation of a European Health Data Space is a key project to improve medical care and research and enable data sharing for societal purposes, no information is being provided. This is particularly worrying as it is not today's generation of decision-makers, but today's youth who will have to live with the consequences of these decisions. **Consumer protection and empowerment regarding the digitalisation of the healthcare system** is urgently needed.

Youth counselling services, that do not pursue commercial interests, are highly relevant. In the area of awareness raising and prevention, many good materials and research are being disseminated. Young people come into contact with some of the results of this valuable work.

2.4 IDENTIFICATION AND PREDICTION

Whether we are happy to be put in categories depends on whether we notice it. Sometimes that makes our (digital) lives easier. Sometimes we realize that we don't want these simplifications, for example in the form of personalized recommendations. And sometimes it's embarrassing when you suspect you're being shown an ad because the platform thinks you're neurotic or anxious.

SURVEILLANCE AND PROFILING OF YOUTH

Although the EU recently decided that profiles of minors may not be created in order to monetize them, they will continue to be created, for example to recommend content or to use them for advertising from the first day they reach the age of majority.

Young people are digitally tracked, they are often mandatory registered in diverse school and education related platforms, at young age tracked by parents and also might be monitored acoustically, even though some technologies are actually banned in Europe.

If education addresses tracking and surveillance, then this aspect, which is very important from the perspective of **children's rights**, plays an important role. The aim must be to recognise not only the protection aspect, but also the child's right to move around unobserved and unreachable and not to be tracked.

In general, the goal of many games, apps and services is to create data in order to make **predictions about future behaviour** – whether insurance companies or banks want to use it to calculate the risk of default, a social media platform wants to find out which other articles might be liked in order to increase the length of stay, whether a company wants to find out whether an applicant has exactly the right psychological characteristics for the job, what music somebody should get presented or would likely hear on Spotify, how successful an amateur athlete can become in a certain discipline, how much heating a family or a house will demand in the next winter.

Facial recognition or other biometrics might serve to increase safety and support security, for instance in the sense that no unauthorized person has access to a space or sensitive data, thanks to biometric recognition in banking apps or smartphones. On the other hand, such services open a window to surveillance and abuse. With **abusive biometric technology** in public spaces, civil and peaceful protests in more and more states are undermined, or groups are excluded from access by machines, for instance at entry gates to public spaces.

Technology is also a threat for privacy on a larger scale. The startup Clear-View AI provoked a huge scandal because of connecting three billion pictures of people from

many publicly available databases with a biometric algorithm and offered their customers to identify a person on a picture taken in passing. Their customers were mainly public authorities with different democratic reputations, but the database was also used for private stalking.

Biometrics and other personal data, statistical data from the past and from other contexts, together create a **risky mix**. A mix, brought together by complex, non-transparent AI systems. This is why the EU has defined high-risk systems in the AI law. First and foremost are those whose purpose is direct biometric analysis. But the entire catalogue makes clear that biometric data plays an indirect but important role in other systems. How we move, feel, what we do and whether we do something can be used to determine our salary, health insurance contributions, access to public services and benefits, and much more.

APPLICATIONS PROHIBITED UNDER THE AI ACT

Deploying subliminal techniques beyond a person's consciousness or purposefully manipulative or deceptive techniques, **manipulating decision-making and behaviour**

Exploiting vulnerabilities of a person or a specific group due to their age, disability or a specific social or economic situation, distorting the behaviour and causing harm

Evaluating or classifying persons or groups of persons based on their social behaviour or personality characteristics and discriminating them (**social scoring**)

Assess or **predict the risk of a person committing a criminal offence**, based solely on the profiling of a person or on assessing their personality traits and characteristics (allowed: support of human assessment with data directly linked to a criminal activity)

Creating or expanding facial recognition databases through the **untargeted scraping of facial images** from the internet or CCTV footage

Inferring emotions of a person at work or in education institutions (allowed: medical or safety reasons)

Biometric categorisation regards sensitive data to deduce or infer race, political opinions, trade union membership, religious or philosophical beliefs, sex life or sexual orientation (allowed: ‚lawfully acquired biometric datasets' in the area of law enforcement)

Remote biometric identification in publicly accessible spaces for law enforcement (eventually allowed: targeted search for specific victims, prevention of a threat, localisation or identification of certain suspected criminals)

'Real-time' remote biometric identification for other purposes and more than confirming the identity of a specifically targeted individual.

► Source: AI Act Article 5

HIGH-RISK APPLICATIONS DEFINED IN THE AI ACT

Remote biometric identification systems (not those for the sole purpose of which is to confirm that a specific natural person is the person he or she claims to be);

Biometric categorisation systems, according to sensitive or protected attributes or characteristics based on the inference of those attributes or characteristics;

Education: emotion recognition; access or admission or assignment; evaluation of learning outcomes, including when those outcomes are used to steer the learning process of natural persons; assessing the level of education; monitoring and detecting prohibited behaviour of students during tests.

Work & employment: recruitment or selection of natural persons (targeted advertisement, filtering job applications, evaluate candidates); decisions affecting terms of work-related relationships, employment contracts, to allocate tasks based on individual behaviour or personal traits or characteristics, monitor and evaluate the performance and behaviour of employees.

Migration: assess a risk, including a security risk, a risk of irregular migration, or a health risk, posed by people during migration into EU; Examination of applications for asylum, visa or residence permits; Detecting, recognising or identifying natural persons (allowed: verification of travel documents).

Law enforcement: assess the risk of a natural person becoming the victim of criminal offences; usage of polygraphs or similar tools; evaluate the reliability of evidence in the course of the investigation or prosecution; assessing the risk of a natural person offending or re-offending, assessing personality traits and characteristics or past criminal behaviour of natural persons or groups; profiling of natural persons;

Justice: researching and interpreting facts and the law and in applying the law to a concrete set of facts, or to be used in a similar way in alternative dispute resolution; influencing the outcome of an election or referendum or the voting behaviour of natural persons in the exercise of their vote in elections or referenda (allowed: AI systems such as tools used to organise, optimise or structure political campaigns from an administrative or logistical point of view).

► Source: AI Act Annex III to Article 6 (2)

These lists show a wide range of AI use cases that are not as well known to young people or others when they talk about AI. Generally youth perceives AI as rather smart, a clear minority as the opposite (Gagrčin et al. 2021, p. 13). Asked if AI would be “rather lax or accurate” most respondents take a middle position. Asked, for what purposes youth would accept AI-driven decisions the data shows a pragmatic picture. This must be accompanied by a caveat that applies universally. Despite openness to technology and despite companies' great efforts to inspire trust in AI solutions, the **persistent desire for human final decision-making, for control and oversight**, remains.

BIG DATA: A RATHER AMBIGUOUS THING

Persons that see more disadvantages **51 %**	Persons that see more advantages **31 %**
Persons that would rather pay for a service, instead giving their data **55 %**	Persons that would not pay **39 %**

▶ Source: Vodafone Institute for Society and Communications 2016; n=8.000 Europeans

RIGHTS APPLIED TO EFFECTIVE FREEDOM OF CHOICE ONLINE

Eurobarometer asked in 2024 how well do people think that rights applied to effective freedom of choice online also when interacting with AI?

very well 10% | fairly well 42 % | not very well 26 % | not well at all 6 %

▶ Source: Eurobarometer 551, QC8.5 (2024); n=26.346; Europeans older than 15

YOUTH ON PURPOSES FOR AUTOMATED DECISIONMAKING

Health decisions	**54 %**	against ultimate decisions for medical treatment, but 51% for fitness recommendations.
Law enforcement	**68 %**	AI should not have the power to start a lawsuit, but 37 % find it OK to receive a parking ticket (41 % not) .
Crime prediction	**63 %**	AI should not calculate the chance of a prisoner reoffending But if „petty criminals are likely to commit serious gun or knife crime“ 43% say yes and 42 % no.
Human autonomy	**68%**	say, a human should have “the final say on whether to accept or reject an AI decision”

▶ Gagrčin et al. 2021, p. 51 and p. 54; n=3.000 (DE, FR, GR, IT, PL, SV), age group: 18-30

REJECTION OF GROWING USE OF AI

	Europeans that **embrace** more AI	Europeans that **reject** more AI
DE	17 %	**50 %**
FR	17 %	**56 %**
IR	16 %	**54 %**
NL	14 %	**54 %**
SV	21 %	**45 %**
IT	21 %	**43 %**
ES	23 %	**42 %**

▶ Source: Edelman Trust Institute, 2024, p. 26 | CHG_TEC_COM.

CRITICAL VIEW ON AI GENERATED NEWS

	comfortable	uncomfortable
Mainly humans should produce news (with some help of AI)	**33 %**	26 %
Mostly AI	15 %	**47 %**

▶ Reuters Institute for the Study of Journalism, 2024, p. 20; Europeans of all age groups

CRITICAL VIEW ON TRACKING AND MONITORING EMPLOYEES

Asked about different fields of AI application the attitude of young people is becoming critically: **59 %** argue that **tracking and monitoring employees through technology would lead to exploitation**.

▶ Gagrčin et al. 2021, p. 28; n=3.000 (DE, FR, GR, IT, PL, SV), 18-30 years old

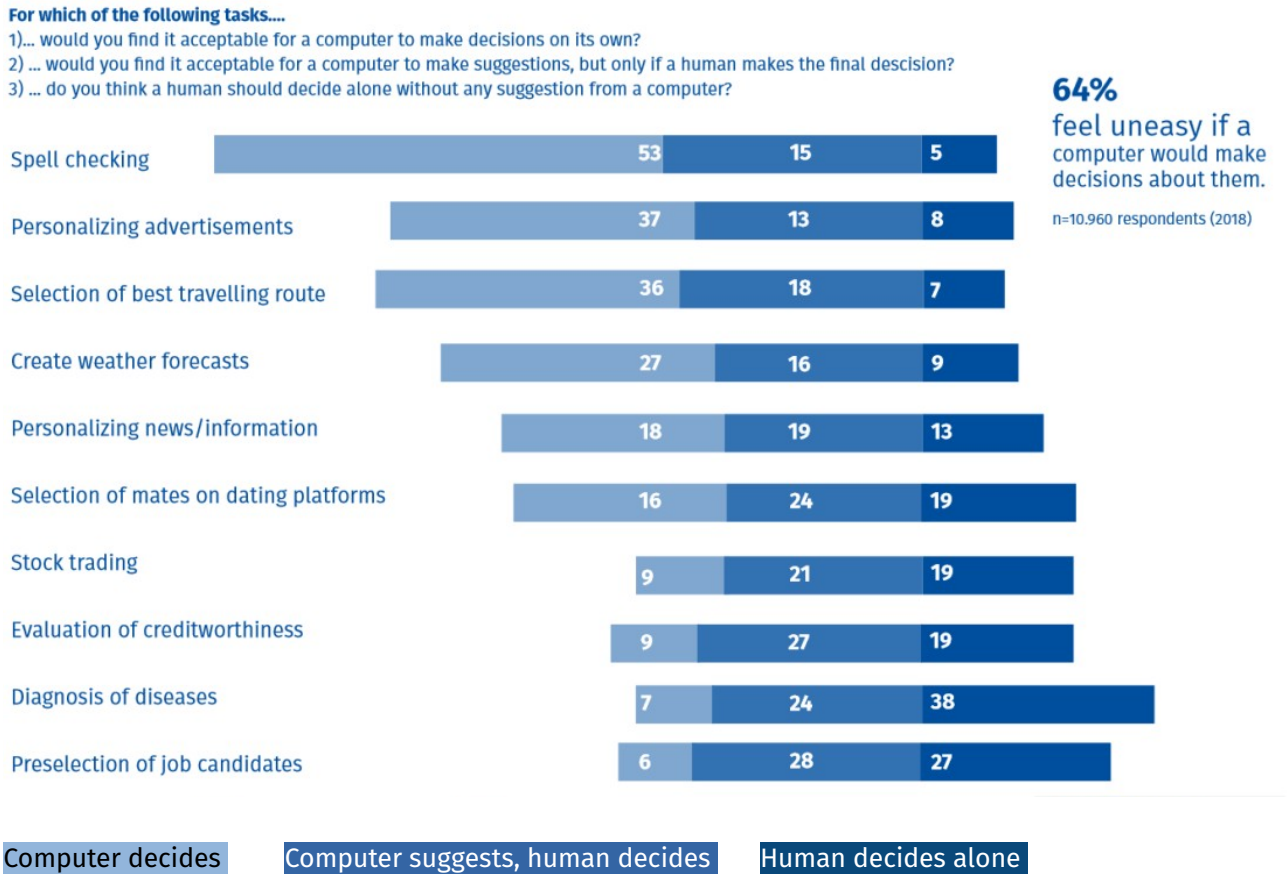
YOUTH ON AI APPLICATIONS IN THE FIELD OF EMPLOYMENT

Improving **working conditions**	**77 %**	(∅ EU 67 %)
Allocating tasks for workers/scheduling	**62 %**	(∅ EU 49 %)
Collecting & storing **personal data**	**57 %**	(∅ EU 44 %)
Gathering **additional information about job applicants**	**53 %**	(∅ EU 43 %)
Selecting job applicants	**46 %**	(∅ EU 36 %)
Assessing **workers' performance**	**49 %**	(∅ EU 36 %)
Monitoring workers	**44 %**	(∅ EU 31 %)
Automatically **firing workers**	**23 %**	(∅ EU 16 %)

▶ Source: Special Eurobarometer 554, p. 58 (2024); n=26.415; age group: 15-24

These findings go inline with earlier studies like the Bertelsmann Foundation's from 2019 on "What Europe Knows and Thinks About Algorithms" (Grzymek & Puntschuh, 2019, all age groups). Overall, also concluding from interviews these results cannot be interpreted as sign of blind trust, but neither as fundamental distrust. Rather they should be read to accept digitality as given reality.

HUMANS OR SYSTEMS?



▶ Source: Grzymek & Puntschuh, 2019

In regards to their competence to assess risks and opportunities of AI the respondents (in 2021) answer differently regarding their formal qualification. **The lower education the less feeling of competence to assess risks**. In other fields than AI, in example worries about misuse of personal data by others, educational levels do not seem to play a big role (Gagrčin et al. 2021, p. 32).

From general attitudes toward AI and big data to the user behaviour of young people: AI **usage has increased significantly** in recent years, driven by the publication and promotion of ChatGPT, the attention surrounding Open AI's collaboration with Microsoft, and the race among major digital companies to develop the best large-language AI.

USAGE OF AI FOR TEXT IMAGE OR VIDEO DURING LAST 12 MONTHS

EU	RO	DK	BE	GR	PT	FI	CZ	...	CY
57 %	**66 %**	**63 %**	**63 %**	**63 %**	**62 %**	**62 %**	**61 %**		**44 %** (lowest)

▶ European Union (2024b) Q12 | n=25.863, EU citizens, age group: 16-30

HOW STUDENTS USE AI

This may also be due to the fact that AI tends to be used and tried out for simple and handy things. German students used AI...

63 %	for fun/try out
58 %	for homework
51 %	for read up/checking information
31 %	for writing a message

▶ Habich 2024, p. 20

With the strong popularisation of AI, more and more questions come up about the conditions for using the services and the products AI create, as well as the conditions for processing sensitive personal data and data of others: The personal data that is made available to the systems, how this data is shared and used; questions about the usability of the product (copyrights, etc.).

Despite the illustrative and therefore very present image-generating or multimedia-related AI, the huge impact of AI can be illustrated by an example provided in youth talks conducted by the Foundation Higher Education for Good – **translation** (2023, p. 22): "The young volunteers simply tore down the language barrier. The maturity of online translation technologies means that we can analyse and include all the contributions we receive. Anyone and everyone can now take part in international initiatives irrespective of their ability to read and write in English or any other official languages."

2.4 CONCLUSIONS – IDENTIFICATION AND PREDICTION

ACCESS & INCLUSION

In general, AI is increasingly being used to support young people and improve youth work. This isn't necessarily about the colourful and exciting aspects, but rather about practical aspects aiming to improve **access and inclusion**: Translating texts, for example, subtitling, and providing materials in easy-to-read language.

MEDIA-RELATED YOUTH WORK

The interviews with educational professionals confirm the motivation to explore AI deeper. Fundamentally **curious and open to new technical possibilities**, media-related pedagogues, as early users, are particularly keen to experiment and have a broad overview of emerging tools, platforms and interesting application possibilities.

Practices introduced by interviewees relate to different fields of AI exploration, such as text, images, movies etc. Young people have questions about it and media is full of it, such it is an issue where young people are interested in. Consequently practice-oriented media education offers experimentation. Young people learn prompting and, under certain circumstances, also assessing the quality of the results.

Young people are aware about different AI's that can be used, in school contexts is a vivid debate about application of AI.

BLANK SPACES

Youth Work itself seems to be quite busy to skill itself up. A big issue is a restrain of pedagogical staff from digitality as such. It remains important to focus on upskilling, or reducing barriers of educational professionals, however from the EDC/HRE perspective the connection between a funny application of digitality and core questions of democracy needs attention. If **digitality should be understood as content and subject** of pedagogical dialogue, then the subject dimension itself remains currently vague. Existing practices, with a few exceptions, seem not to touch this issue.

This refers to a development from adopting AI to **critical AI literacy**. Part and parcel of a realistic reflection of AI is understanding how AI comes to results or what it can(not) do. What it cannot do, however, often relates to rights (copyright, citing sources, unbiased mention of individuals, for example), representation (such as appropriate consideration of minority views, representation of groups that do not contribute to the training corpus), or democracy (the systems' blindness or ambivalence toward fundamental democratic values). In this sense and especially in democratic societies, AI literacy must include reasoning on the **impact on democracy and democratic culture**. In light of European law and fundamental rights, critical learning on AI must include knowledge about personal data and how it contributes to predictions in a wide range of dimensions. Particular attention must be paid to high-risk application areas, as these are practices that young people are most likely to be confronted with in their jobs, education and other contexts. Knowing what a system can know and conclude about you is essential for digital empowerment.

In Europe, the Council of Europe's perspective on **digital citizenship education** provides an orientation path: It means "empowerment of learners of all ages through education or the acquisition of competences for learning and active participation in a digital society to exercise and defend their democratic rights and responsibilities online, and to promote and protect human rights, democracy and the rule of law in

cyberspace" (Council of Europe). Applied on AI this could mean: to learn about rights dimension in the context of AI and how youth can exercise their rights towards platforms and services. To learn to engage for human-centred AI and appropriate regulation and to involve in the relevant processes of legislation, governance or assessment. To understand how rule of law, democracy relate to the digital transformation. The EU commission's DigComp framework struggles with this critical perspective on AI, although main activities are currently focused on bringing AI in the centre of the framework. The UNESCO's AI competency framework for students can be an inspiring source.

UNESCO AI COMPETENCY FRAMEWORK FOR STUDENTS

	Understand (all citizens)	**Apply** (some)	**Create** (academic experts)
Human-centred mindset	Human agency	Human accountability	Citizenship in the era of AI
Ethics of AI	Embodied ethics	Safe and responsible use	Ethics by design
AI techniques and applications	AI foundations	Application skills	Creating AI tools
AI system design	Problem scoping	Architecture design	Iteration and feedback loops

▶ UNESCO, 2024c, p. 19

However, this learning about AI **cannot be tailored to academics and systems engineers** as it is today. Broadening UNESCO's vision with a EDC/HRE focus, we'd like to put emphasis on the fact that in a post-digital democracy, **everyone** needs the chance to develop critical awareness and ability to act. "Citizenship in the era of AI" (although here clustered to the proficiency level foreseen for academic experts) is from this point of view an issue to understand **and** to act for. A challenge for formal education and youth work.

It should not go unmentioned that the **political-economic strategies and framework** for AI (the AI environment) is also important from the perspective of youth work with a socio-political interest and should complement this perspective.

Several educators consulted by our project emphasize on the necessity of a **feminist and gender perspective** on diversity/representation and categorisation of individuals which was broadened in research and digital civil society discourses but not necessarily in digital youth work.

Furthermore, they highlight the importance of a psychological perspective on the **effects of digitised societies on human and human machine relations,** parasociality, exploring the types and qualities of relations in a society and of loneliness with the aim to help youth to (re)connect.

The developments and data show, that a democratic and human-centred usage of AI requires mitigation of tensions and a definition of the **desired relationship between people and machines** (including also services and platforms). Consequently the role of youth as subjects should be strengthened – starting with the question what young people want the AI to do, where it could intervene in their lives, what imagery an AI develops related to their identities and how they can influence that.

MATERIAL CRITICAL AI LITERACY

Card game: AI Compass. Card game for learning about AI application(s) in different contexts in society. By Alexander v. Humboldt Institute for Internet and Society → LINK

Guide: Media, Big data and Artificial Intelligence. Created in the InEdu project for youth work and schools. → LINK

Resource collection: Big Data Literacy. Resource collection of the Critical Big Data and Algorithmic Literacy Network. → LINK

Comic: We are AI. Five Comics about AI by Julia Stoyanovich and Falaah Arif Kha → LINK

Comic: We need to talk AI. Comic about Artificial Intelligence by Doc J Snyder & Lena Ziyal → LINK

Workshop: Ethics, AI and Coding. Workshop concept created in the German programme Jugend hackt by medialepfade → LINK

Exhibition: What the Future Wants. Playful exhibition for teens about AI, by Tactical Tech Collective → LINK

2.5 ACTIVE CONSUMERS

The younger generation was addressed as digital consumers from an early age. At the same time buying and selling changed recently, probably with youth in a more active role than in previous generations. The following overview shows how younger generations are acquainted with online shopping, although Eurostat data from 2024 informs about large regional differences too (differences in online shopping habits).

GOODS AND SERVICES FROM E-COMMERCE (18-24)

Fashion and accessories	**52 %**
Movie/series/sport streaming	**33 %**
Music streaming subscription	**30 %**
Food deliveries	**29 %**
Event tickets	**29 %**
Cosmetics and beauty	**21 %**
Games & downloads	**19 %**
Software	**13 %**
Other app subscription	**6 %**
Ebooks/audio books	**6 %**
Health-related app subscription	**5 %**
Online newspapers or magazine subscription	**4 %**

▶ Source: Eurostat Internet purchases - goods or services (2020 onwards) (isoc_ec_ibgs); EU citizens, age group: 18-24

AGE GROUPS PEOPLE IN THE EU THAT SHOPPED ONLINE (LAST 3 MONTHS)

68 %	**16-24 years**	highest: CZ 89 %, IR, NL 87 %	lowest: RO 49 %, IT. 52 %, LV 60 %
76 %	**25-34 years**	highest: NL 94 %, CZ 93 %, SV 87 %	lowest: BG 53 %, RO 54 %, IT 57 %
73 %	**35-44 years**	highest: NL 94 %, IR 93 %, DK 87 %	lowest: RO 46 %, BG 50 %, IT 51 %
63 %	**45-54 years**	highest: IR 93 %, NL 89 %, DK 87 %	lowest: RO 33 %, BG 35 %, IT 46 %
50 %	**55-64 years**	highest: IR 83 %, NL 81 %, DK 78 %	lowest: RO, BG 22 %, LT 29 %
32 %	**65-74 years**	highest: NL 73 %, IR 67 %, DK 66 %	lowest: BG 7 %, RO 9 %, HR 11%

▶ Source: Eurostat Internet purchases by individuals (isoc_ec_ib20); data from 2024 in EU

Easier shopping options, datafication and the platformisation of retail have an impact. Everyone can be involved can access goods, as a retailer, trader, buyer. The risk of **young people getting into debt** has been pointed out in various places. Easy availability of expensive (and fake) goods, aggressive and social advertising and readily available expensive consumer credits all play together.

The nature of (global) platformisation drives **rapid consumption**. This has negative social and environmental consequences, particularly in the fashion sector. The situation of producers and producer societies is deteriorating as a result. While “fast” fashion, furniture and consumption in general used to be a privilege of the upper classes, this style of consumption is becoming a new habitual normal.

A new phenomenon is that youth uses the easy access to the economy as active participants. Interviews confirm that more of them become active in **resale**. Others **speculate** with cryptocurrencies.

Influencing in particular is an attractive career option for many. In addition to the opportunity to earn money with seemingly little effort and the prospect of being widely recognized as successful are likely to play a role. Already in 2018 35 % of German youth imagined to become **content creator as a career option** (Engels, 2023, p. 7), 6 % of the generation z would make a living from it (ibid. p. 8). In general, the prospectives for a decent living as content creator seems to be difficult.

The platformisation of consumption has also created a growing group of **employees as platform workers.** In particular the field of gig work (especially delivery) makes the impact of platformisation on worker conditions tangible. The EU platform directive tries to mitigate some of the problems, in particular the pseudo self-employment of platform workers, often belonging to marginalised groups in society.

Beyond platforms, however, it's also about working conditions in general. We have excluded this area from this analysis, although it plays a role in various areas (such as workplace surveillance, accessibility, algorithmic recruiting, tracking of employees, automated decisions about them, etc.). The connection, however, is that precisely where services and goods are offered quickly and flexibly, this happens at the price that the workers providing these services are particularly exposed to digital regimes and often cannot rely on regular legal protection mechanisms or support structures.

Inline we face a changing perception of the idea what work is and how work looks like. Younger persons (15-24) have a significantly more positive perception of AI and robotics in the workplace (74% compared to 54 %, Eurobarometer 554, 2024, p. 32).

FAIR AND HEALTHY WORKING & LEARNING CONDITIONS

How people assess the application of digital rights in the field „fair and healthy working conditions” in the digital environment including the work-life balance

very well 11 %	fairly well 44 %	not very well 27 %	not well at all 5 %

► Source: Special Eurobarometer 551 (QC 8.3) (2024); n=26.346; Europeans older than 15

Making has a huge potential for youth work. Many publicly accessible maker spaces or Fab Labs (open workshops with several different devices) have opened recently in Europe – some commercially, but many that are also maintained by non-profit associations and public authorities. Some public libraries have also broadened their activities in this direction.

In a broader sense, this term “making” also encompasses “craft" and “artistic" activities. Drawing and digital processing of the sketches, sewing with and without assistance, and creative material processing with hands and machines are increasingly overlapping.

Making applied to the field of IT also emphasizes this creative goal. For example, a famous program in Germany is called “Youth Hacks” rather than “Youth Programming” to emphasize that it's about open learning, self-imposed goals, and self-determination.

MAKER CULTURE

“Maker culture is perceived as DIY culture on the surface. What sets maker culture apart from the traditional culture of crafts is that the artistic and creative elements are often complemented by digital components. The global economy and the latest technologies are utilised in learning and networking as well as in production and distribution. Interest in maker culture has grown as technology has become more affordable and accessible. Equipment that is now within the reach of hobbyists can be used to carry out projects that were previously restricted to the realm of professionals.”

▶ H. Karppinen (in Kiviniemi, 2019)

3D printing printing objects based on ready-to-use templates or creating new designs and new objects

CNC (computer numerical control) laser cutting of different material such as wood, plastic or metal

Coding, robotics, hardware creating and applying programmes or software (including AI) and devices

HACKING

Originally native to computer science, the term spread to other areas of society with digital transformation: Giving things new purpose – from furniture to computers. The terms "life hacks" and "hacking" have made it into everyday language and left the digital environment. Essentially, they describe an approach to transformative learning - problem solving, experiential learning, challenging and changing habits and sometimes the system from the ground up.

The cultural industry has undergone fundamental changes since the Internet's breakthrough. The **types and approaches to media consumption** among young people are not shaped by the pre-digital era. In the past, the physical possession of sound recordings and then the possession of a digital copy was a prerequisite for listening to music or watching a film, but streaming via platforms has now become the norm. Linear television has lost its relevance, but streaming services from public media have not, at least in those countries, where public broadcasting services have a long tradition. Public media are also widely used by young people for political information (see next chapter).

LONG FORM CONTENT STREAMING BY AGE GROUP 16-34

Netflix 86 % **YouTube 58 %** **Disney + 48 %** **Prime 43 %**

Public Service Broadcasting (PSB) streaming	**43%**
Local commercial streaming services	25%
Linear TV	15%

► Esser et al. 2025, p. 12; 16-34 aged in DK, DE, IT, NL

The younger generation still listens to more music than other generations. However, they listen to linear radio half as much as the European average. Free video streaming, especially via YouTube, and paid streaming of image and sound are significant.

Therefore, the major platforms are influential, which is reflected, among other things, in vertical integration – services originally planned as distribution platforms are becoming media producers themselves (Netflix, Disney + and Prime).

WHERE YOUNG PERSONS LISTEN TO MUSIC IN EUROPE

72 % **Commuting to work or educational**

69 % **Relaxing at home**

30 % **Going to sleep**

► Source: IFPI , 2018, p. 7; global data, population aged 16-24 n=1.000-2.000/covered country

STREAMING (ALL AGE GROUPS, GLOBALLY)

52 % **video streaming**
47 % YouTube + 5 % other services

28 % **paid audio streaming**

20 % **free audio streaming**

▶ Source: IFPI , 2018, p. 12; global data, n=1.000-2.000/covered country

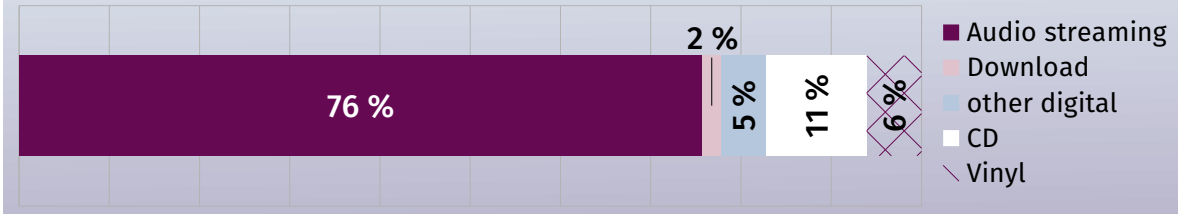
RADIO TIME

1 h 14/day
listening time of European Youth

56 % less than average.

▶ EBU, 2023, p. 7

MUSIC SALES REVENUE SHARES 2023: STREAMING TOP



▶ Source: Bundesverband Musikindustrie e. V., 2024, p. 7, data for Germany

Similar to the before mentioned fields, **gaming** provides a vast field where questions of economic models of digitalisation, platformisation and youth culture mix up to a perfect brew. With 70 % players already in the age group 6-14, 83 % of players between 11 and 14, and 78 % of players among the 15-24 years old youth (Video Games Europe, 2023, p. 9), playing video games is a **formative experience** for young people, such it is one of key entry points for youth work and for education on digitalisation. Gaming culture has become a key field of youth culture, it is also commercially highly interesting and coins into all aspects that have already been extensively described in the various aspects of data extraction in the digital self-section.

SHARE OF VIDEO GAME PLAYERS IN THE AGE GROUPS

age	Share of all players	compared to 20222	
6-14	**19 %**	+ 1 %	**53 %** of all people play video games
15-24	**22 %**	+ 1 %	
25-34	19 %	=	**83 %** play in the age group 11-14
35-44	17 %	=	
45-64	23 %	- 2 %	**25 %** of all players are minors

▶ Source: Video Games Europe, 2023, p. 8; data for DE, ES, FR, IT, UK

Consequently, gaming has become a vital part of youth work with many gaming spaces or gaming facilitators especially in open youth work. However, there is a challenge between two pedagogical directions: To take up, on the one hand, the experience and youth practice of young people participating in myriads of free/paid online games. On the other hand to foster a critical and alternative oriented view and practice, which can for instance be, to play alternative serious games.

Specifically Minecraft is a remarkable game, where youth work has developed several approaches to utilize the sheer endless opportunity to build, cooperate and create and find answers to societal challenges.

As part of gaming culture, **originally game-focused platforms** like Twitch have meanwhile become, beyond their core topic, important resources of information and debate with a huge reach-out to (not only) young people. They offer a sheer endless variety of popular streams that debate and discuss issues with political and societal relevance.

Regards the **impact of gaming on youth**, there is evidence that gaming as cultural phenomenon provides social interaction, supports the development of diverse skills and competences (Schutz, Schwarz, 2022). However, gaming exposes to risks and experiences that impact mental health and well-being too. Both issues need to be considered, when developing practices.

Online games are **political** and more and more games put societal and political learning explicitly on the agenda. For example, players experience the consequences of human-made climate change for the metropolis they have built themselves. Such and similar video games are increasingly daring to tackle socially relevant issues and tell stories that are taking a stand against racism and in favour of diversity and sexual diversity. Or players have to simulate a resistance group during the Third Reich.

Other games, however, reproduce racist stereotypes or distort historical facts. In many video game communities, there is often a lack of a clear stance when, for example, players are devalued in a racist or sexist way.

From interviews with practitioners, and in available research gender differences were noted in the use of social media and digital gaming. Although their share in participation nearly equals – 45 % of video game players are female (Video Games Europe, 2023, p. 10) - there are differences in the way to use services. In example, girls reported higher levels of continuous online contact and problematic social media use (SMU) than boys, while boys reported a higher prevalence of both non-problematic gaming and being at risk of problematic gaming than girls" (Boniel-Nissim et al., 2024, p. VII).

2. 5 CONCLUSIONS – ACTIVE CONSUMERS

CONSUMPTION DECISIONS

Retail and sales have a strong psychological dimension. It involves needs and their satisfaction through consumption, the experience of the buying process, and the opportunities sellers use to create a sales-promoting environment or to convince buyers.

With the shift of a significant portion of business to platforms, the tools and resources have changed (I. e. dark patterns). Youth work should encourage young people to become critical consumers who neither deprive themselves excessively nor overspend, but make decisions that meet their needs and that they don't regret.

MATERIAL: PSYCHOLOGY OF CONSUMPTION

Game: mission decision. Students go on digital shopping sprees and are repeatedly confronted with anomalies in their decision-making behavior. By Deutscher Sparkassen- und Giroverband e.V. (German) → LINK

Material for teachers: Behavioural economic experiments. Scientific decision-making situations in the classroom (German) → LINK

Material: Young Crime – Rip-offs on the Internet. Fictional criminal case about fake shops and fraud schemes on the Internet.(German). → LINK

INFLUENCERS

Youth workers and other educators have long been aware of young people's interest in influencing and becoming content creators, and they are tapping into this. Some educational materials have also been developed for this purpose.

These can be supplemented to provide a picture of the content creator economy based on real data. For example, how likely it is to earn how much money, the breakdown of money flow in the digital content creation chain, the value of followers' data, and the power structure between platforms, followers, and creators.

MATERIAL: INFLUENCERS

Material: Influencer Marketing. Mainly created for secondary level 2 in schools by the AWS Arbeitsgemeinschaft Wirtschaft und Schule (Austria). → LINK

Material: Influence is everywhere! Information competence as key qualification in the age of social media. By Media Smart e. V. created mainly for school context (German). → LINK

Module: How influencers work. Created by the German public broadcaster NDR mainly for school contexts. → LINK

CREATORS

Workshops are an integral part of youth work. As technology developed, electronic devices became an integral part of these spaces. Many examples of cultural youth work bear witness to this, but also of democracy-related youth work – in which digital products are the main goal or digital products are used in the learning process.

Not only digitalisation, but also the development of increasingly easy-to-use apps that automate what used to be laborious, small steps on the way to a result, have expanded the possibilities incredibly. Animations, films, music and games can now be used at a low threshold and in relatively short periods of time. When things are automated, some basic skills are no longer taught.

It becomes a major challenge in those cases where most of the conceptual and creative work is outsourced to machines. Imaging AIs enable youth to use high-quality illustrations. But is the product a goal or a tool? How much value do we place on young people's creative and conceptual skills? The more work on things transforms in human-machine interactions, the more important it seems that people's (self-)awareness is, that one can shape results differently, reject them, or assert them in one´s own way.

ROBOTICS

Many projects and courses are essentially about stimulating young people's curiosity about STEM subjects or self-programming. These programs and offerings are offered by many different stakeholders – company-based offerings, courses from research institutions, local youth organizations, or school teachers who have received training in this field. Some activities were deliberately launched to reduce barriers to entry into computer science and engineering and to narrow the digital divide. In theory, this also involves getting started with self-learning and further developing after the workshop.

MATERIAL: CREATORS & ROBOTICS

3D-ECO. 3D printing workshops for environmental and technological *empowerment* of the local *youth community* in Berlin by InMOE. → LINK

Youth hacks. Improving the world with code. A national programme for young people. Featuring hackathon events, an online community, and exchange programs, by the Open Knowledge Foundation Germany and mediale pfade (Germany). → LINK

ReDI School of Digital Integration is a non-profit tech school providing migrants and marginalized locals in Germany, Denmark and Sweden. → LINK

Roberta – learning with robots. Educational programme of the German research institute Fraunhofer Institute for Intelligent Analytic and Information Systems IAIS, with specific attention given to female youth → LINK

Lifehack Digitalisation. A critical-creative workshop on creating learning and live with human and artificial intelligence by wannseeFORUM (DE) → LINK

GAMING

Specifically in the EDC/HRE there have been developed a lot of **alternative games and game-based practices** which pursue a non-commercial, data-friendly interest, and support the exchange and reasoning about societal and democracy questions. Some of them put digitalisation at the core of reasoning, although Europe wide they are rare. Some initiatives develop and utilize games for socialising people by playing, to follow their playfulness, to overcome hurdles in a digitally mediated experience, sometimes reflecting and adjusting game mechanics. From this perspective, playing might be conceptualised as a **collective and participatory** process taking up lebenswelt of young people while **approaching EDC/HRE-related issues**. Curation and solid pedagogical support seem necessary here.

EXAMPLES: ALTERNATIVE SERIOUS GAMES

Hidden codes. Education Center Anne Frank in Frankfurt (Main) developed a digital serious game supporting young people to become aware on right wing and Islamist radicalisation. → LINK

Through the darkest of our times. Users take on the role of a resistance group that has to make moral decisions under National Socialism. By Paintbucket Games. → LINK

Archiospace. The digital escape game approaches digitalisation and society contextual to algorithms, coding and AI (German). Developed within the context of the AdB´s programme civic youth education. → LINK

Minecraft makes media literacy – from kebab prices to data democracy. Minecraft, Mario Kart and 3D printers – a holiday programme at the media competence centre in Berlin-Lichtenberg sounds like fun at first glance. But under the surface, there is sophisticated, politically motivated media education: first arousing interest with gaming, then visualising data and negotiating social issues along the way. → LINK

Various resources provide **recommendations for pedagogues**, in example the Stiftung Digitale Spielekultur, aiming to build bridges between the world of games and political and social institutions in the German speaking context. Diverse youth media work especially to video games. **Counselling services** deal with many issues related to gaming.

EXAMPLES: YOUTH COUNSELLING SERVICES

www.saferinternet.at on digital games. The project is the Austrian partner in the Safer Internet Network of the EU (German language). → LINK

Spieleratgeber NRW. The game guide evaluates games according to educational criteria. Tests are being carried out in game test groups and with over 300 children and young people (German). → LINK

Stiftung Digitale Spielekultur. Foundation Digital Gaming Culture, established by the German games industry → LINK

EXAMPLE: DIGITAL STREET WORK

Digital Street Work: Digital street work works with different orientations and objectives. The reference to digital Lebenswelt as a standard of social work makes it essential to deal with the now central digital social spaces of. But what is possible and required there? → LINK

BLANK SPACES

The more **digitally mediatised sale and purchasing** become part of culture and the more its share in the economy increases, the more important it becomes for youth work to make it a topic. In particular, platforms have changed the way how people sell and buy things. If from a consumers perspective the **risk of indebtedness** among young people is a major impact of digitalised commerce, then the desire to consume, consumer pressure and dealing with money and debt must become part of youth education.

The way people shop has changed in recent decades, but meanwhile also everyone can use trading platforms to create a business (often not being aware that it is a business). Because young people are **increasingly taking on an active role as creators, traders and speculators**, they are also implicitly assuming responsibility for society (from duties as taxpayers to production conditions or the effects of digitalisation, e.g. crypto-trading on the environment), the active role must become part of reflective youth work.

However, for an education that strives for justice, fairness and sustainability, this means taking a closer look at the approach of **global citizenship education and global learning**, and reflecting on the global production and value chains that enable European youth to become traders, resellers or consumers.

What emerges from the available data is that the clothing trade and the entertainment industry are benefiting from digitalisation, especially among young target groups. Services provided by **platform work** have also become important, especially food delivery. From an EDC/HRE perspective, youth work that includes learning on consumption, production and delivery conditions is becoming increasingly important. Labour rights and the future place of these platform workers in our society is also an important context. Furthermore, a look in alternatives to different types of platform work, service platforms and also **different ways to organise the power triangle** between providers, platforms and consumers can be organised. A look at the possibilities offered by “other platforms”, which are committed to strengthening local trade and avoiding cross-border data collection practices, for example, should be part of youth work that always thinks in terms of alternatives.

More than ever, **creative processes in youth work** raise the question of **strengthening manual skills**. When people and automation collaborate in creative processes, many possibilities appear. However, the more results are pre-designed by machines and services, the more youth work will have to dialectically address the question of how it

can achieve a balance between outcome quality and learning quality. In engaging with the digital, youth work can also contribute to thinking about analogue/manual and also analytical skills that are prerequisites for successful creative work and provide appropriate spaces.

Maker spaces or fab labs offer opportunities to experiment. Young people can also come into contact with 3D printing at school, as many programs, such as those on robotics, are designed to motivate students to become interested in careers in science or engineering, or to reduce barriers to these careers.

Another vision behind 3D printing was to **innovate the prevailing form of production**, to increase repairability, for example, by printing out spare parts, and to strengthen local production. In practice, we could not identify any business- and society-related youth work on the 'Internet of Making' that takes these societal expectations into focus. Whether this is a major gap or not, we cannot assess. It can't be wrong to recognize making as part of a strategy for greater circularity and local economic activity.

Ever since the invention of the cassette, the **music and movie** industry has been pushing to educate young people about illegal practices of sharing and cultural consumption, placing particular emphasis on copyrights becoming an educational topic and the subject of strict political regulation. A generation of youth workers who grew up with this sense of criminalization and warnings are reluctant to comply with these demands. However, **knowledge of free and open licenses** (Creative Commons) is becoming more necessary in youth work and licensed material is increasingly being used because it allows young people's works to be shared after the workshop – especially images and sound.

In addition to the question of how to legally handle cultural artifacts, the conditions of cultural production play a role. The dominance of streaming services has led to changes, Streaming, (youth) clubs, recorded music, and music communities are thus not in conflict with one another but re-shape a **cultural environment**. This environment itself regains importance for youth work.

The role of **games and gaming platforms**, especially related to datafication and dark patterns, and reflective learning about how the ubiquitarian access to games via streaming impacts the carbon footprint and the data shadow is almost never put at stake. Gaming platforms (who is present on them and who not, who owns them, the role of the community...), are taken as entry point in a variety of youth work provisions. However, the question of what interests platforms are pursuing often remains in the second row.

The topics of digitalisation, platforms and digital data extraction could become the central content of serious games, whether digital or analogue. Also the environmental dimension of gaming as a resource consuming cultural practice is not really addressed.

3. Governance of the Digital

Generally spoken youth has a positive attitude towards digitalisation, a slightly more positive than average population: 15-24 year old Europeans say with 89 % that the "digitalisation of daily public and private services is making your life easier". This value decreases with the life age to 55 % of generation 55+ (Eurobarometer 551, p. 14): Youth is **more optimistic and confident** in digital progress than other generations.

However, it feels also clearly the ambiguous aspects of datafication, big data and platformisation. A fundamental question for EDC/HRE is how society deals with it – and under what conditions youth wants to **entrust governance of the platforms**.

Social media in Europe and elsewhere is a matter of fact. During the last years, there is an increasing amount among people who was "participating in social networks by creating personal profiles on social media platforms and connecting with other users." This is also associated with a structural change in the media and the information sphere. Also here EDC/HRE poses a fundamental question – how the digitalisation and **governance of social media, media and data** relates to democracy and how and with whom the democratic public can be strengthened and secured.

INCREASE OF PARTICIPATION IN SOCIAL MEDIA

From 44 % in 2014 **to 65 %** in 2024.

▶ Eurostat

ACTIVITIES OF YOUTH IN THE INTERNET

Instant messaging	**91 %**
Emails	**90 %**
Phone/video calls:	**88 %**
Participating in social networks	**88 %**
Finding informations about goods and services	**81 %**
Internet banking	**71 %**
Online shopping (age 16-24)	**68 %**
Reading online news	**66 %**
Job search/application	26 %
Expressing on civic or political issues (websites/social media)	22 %
Engage in online consultations for public/civic issues	12 %

▶ Source: Eurostat: isoc_ci_ac_i ; isoc_ec_ib20; 2023, Europeans aged 16-29

Looking at the online activities of 16-29 year old, Eurostat paints the following picture (2023): socio-political activities in particular are not the main focus of young people. Although Europe is in this perspective a strong digitised society, the **political dimensions of digitalisation** – policy, politics and polity – are not necessarily seen as a priority topic: Eurobarometer asked in 2022 the Europeans to mention the policy-related "**key challenges of our times**". The Top 3 of the respondents were "economic situation in the EU" (24 %), energy autonomy (26 %), defence and security (34 %). Topics more strong related to the digitalisation did by far not reach such values:

– Leading the digital transformation of the economy and of society in the EU: 6 %

– Fighting disinformation in the EU: 11 %

▶ Source: Special Eurobarometer 526; QC8

This does not mean the absence of digitalisation. On the contrary, the higher rated issues are intrinsically interwoven with digitalisation and digital transformation.

IMPACT OF DIGITISATION ON DAILY LIFE

In your view, what impact do the most recent digital technologies currently have?

	Very positive	Somewhat positive	Negative overall	Very negative
Economy	12 % (-11 %)	**50 %** (- 2%)	18% (+8 %)	5 % (+2 %)
Quality of life	12 % (-4 %)	**50 %** (=)	19% (+5 %)	5 % (+1 %)
Impact on society	10 % (- 5 %)	**49%** (- 3%)	26% (+6 %)	7 % (+2 %)

▶ Source: Special Eurobarometer 554, QB 1 (2024); In brackets: Eurobarometer 460 (2017)

Interviews with youth confirm that younger persons don't assess impact not from the perspective of a pre-digital time. Edelman Trust Barometer shows for youth a declining enthusiasm for the growing use of AI: Between 2024 and 2025: -5 % in Italy, -4 % in Sweden, -3 % in Ireland and Spain, -2 % in Germany. Just in the Netherlands the trend was positive (+1 %) (Edelman, 2025b, p. 10).

This attitude is on the one hand a precondition for a realistic view on different digitalisation activities. While in the past, discussions about specific digitalisation projects were quickly stylized into a conflict between progress enthusiasts and sceptics, this generation rather doesn't assess digital per se as progress. Digital is for not 'better', but is present either way. This implies that young generations might have neither a risk, nor a harm perspective on technologies, but might develop intuitive mechanisms of coping with harms and risks.

3.1 WHOM TO TRUST, WHOM TO GIVE POWER?

While education about online dangers is important, users must also be able to trust that they can enter a social-digital space without the increased likelihood of becoming a victim, similar like being confident to step on the sidewalk without thinking about the probability to be harassed. This also explains EDRi's finding that young people want a different education on internet dangers and, above all, a different way of dealing with them in society. Interesting is the perception of different stakeholders' responsibility and power by youth. The Weizenbaum Institute asked youth:

IN YOUR VIEW, HOW MUCH POWER DO THE FOLLOWING ACTORS HAVE IN DECIDING WHAT HAPPENS TO OUR DIGITAL DATA?

Answers: Rather powerful are:	Users	Govern-ment	Courts	EU	Social media companies	States where social media companies are based
...now	37 %	53 %	50 %	**59 %**	**76 %**	**61 %**
...ideally	**71 %**	56 %	**61 %**	**57 %**	46 %	52 %

▶ Source: Gagrčin et al. pp. 48

If people are asked whom they trust then the image seems to be the following according to the data of Edelman for 2025:

WHOM WE TRUST

	DE	ES	IR	SV	FR	NL	IT	
Media:	44	40	40	43	45	57	52	Distrust <50
NGOs:	40	52	51	46	54	50	51	Neutral >50
Government:	35	33	48	54	37	58	40	Trust >60
Businesses:	45	53	53	55	56	62	56	
Tech Business:	**66**	**69**	**60**	**62**	**67**	**72**	**76**	
AI Companies	34	44	30	32	35	38	50	

most ethical: NGOs

most competent: Business

▶ Source: Edelman Trust Institute, 2025a. Global Report 2025. (For technology business: Edelman Trust Institute, 2024) | Index values

The Edelman surveys show in a long trend that NGOs are perceived as rather ethical and businesses as rather competent. The 2024 survey shows that technology business had

highest trust values. However this counts especially for app developers and semiconductor producers. The AI sub-sector, in example, deals with very low trust.

YOUTH CONCERNS: ACCESS TO DATA WITHOUT PERMISSION BY...

	Highly concerned	Moderately concerned	Not concerned
Employer	**13 %** (∅ 17 %)	**43 %** (∅ 36 %)	**43 %** (∅ 46 %)
Advertisers/businesses	**23 %** (∅ 31 %)	**44 %** (∅ 42 %)	**32 %** (∅ 26 %)
Government	**17 %** (∅ 20 %)	**40 %** (∅ 41 %)	**42 %** (∅ 39 %)
Criminals/fraudsters	**46 %** (∅ 55 %)	**36 %** (∅ 30 %)	**18 %** (∅ 14 %)
Law enforcement agencies	**16 %** (∅ 17 %)	**37 %** (∅ 36 %)	**46 %** (∅ 45 %)
National secret services	**21 %** (∅ 26 %)	**37 %** (∅ 36 %)	**40 %** (∅ 37 %)
Foreign governments	**23 %** (∅ 30 %)	**37 %** (∅ 33 %)	**38 %** (∅ 35 %)

▶ Source: FRA Fundamental Rights Survey 2020, Europeans (n=4.195), age group: 16-29, ∅: EU 27 results for all age groups, n=20.930

The larger context in which social trust is created or destroyed is important in explaining these dynamics when exploring the question of whom young people can trust.

First, there is a general **polarisation of society**. This is partly rooted in inequality. It should be noted that young people are particularly driven by concerns about their future and, in times of economic crisis, are among the first to feel the consequences (such as youth unemployment, cuts to public services, etc.).

Second, **populism** uses polarisation as a political strategy, constituting and emphasizing a natural difference between politics and the people, and rejecting social pluralism and the representative democracy associated with it. This has particular implications for the sectors and institutions interacting within the democratic system – in its more extreme forms, it is not just about **distrust** of 'politics,' but fundamentally of all institutions:

> "Populists are [...] not opposed to the principle of political representation, but merely sceptical of all mediating institutions – not only in politics, but also in relation to the mediated, and thus always mediated, public sphere" (Müller, 2016, p. 199).

At the same time, **scepticism towards hasty and deterministic diagnoses** is appropriate. After evaluating empirical data, Mau et al. (2023) conclude that the **social centre is less**

polarised than it appears. The strength of these ambivalent centrist forces depends on the political culture. Therefore, it can be concluded that social networks in particular present an **unrealistic picture of social tension**. Mau coined the term “polarisation entrepreneurs”, who, aided by the mechanisms of the platforms, are incentivized to escalate tensions or deliberately use the platforms as part of their outreach strategy. In regards to the topic of this subchapter, it is also worth to mention that polarisation entrepreneurs can be found in all sectors – in state, in business, in media or in churches, citizen groups or NGOs.

With Elon Musk's takeover of X, the polarisation entrepreneur has become an active platform owner. Others could follow. The question, however, is to what extent the moderate and indifferent middle is directly affected, or whether these changes are more likely to influence the perceptions of opinion leaders and the media.

In interviews with young people, Gemkow discovered that their definition of populism differs somewhat from the scientific one. They essentially focus on the phenomenon and not on the larger socio-political context – seeing the ‘opinion mongering’ and “uncritical assumption of the correctness of one's own opinion” as core features of populism. In general they view populism less as a personal problem than as a societal one. Young people point in particular to social media platforms:

> "Contrary to their own media behaviour, young people see social media as partly responsible for this development. Consumer-oriented platform operators, with their algorithmically personalized offerings and an unspecified exploitation of the human psyche, are cited as reasons here" (Gemkow, 2023, p. 51).

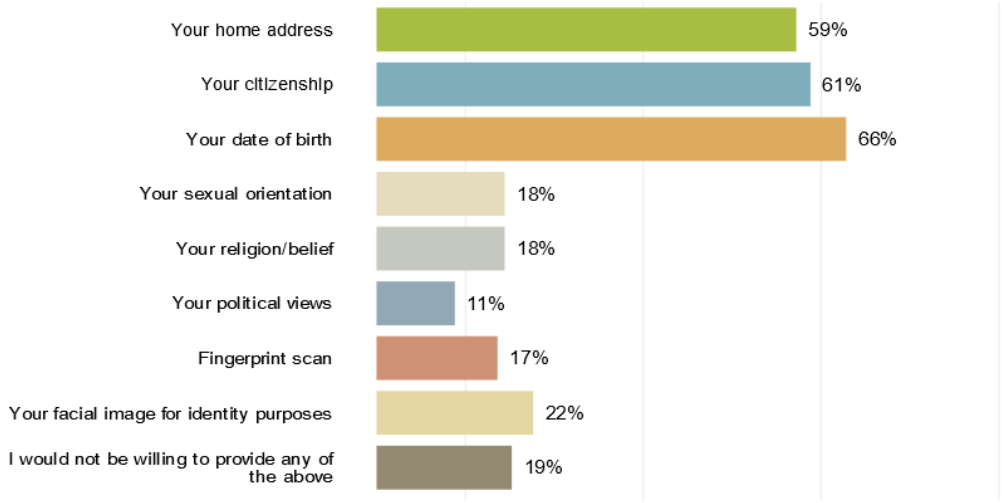
It can therefore be concluded that young people are **aware of the impact of platforms** on the image they have of society. At the same time, however, they are not overly interested in the question of what this means for the public sphere and for pluralist democracy.

After this analysis of relevant mistrust factors in a mobile digital society, however, the question of who to trust remains unanswered. This is important for democratic culture in general, but also for the governance of digitalisation in particular. Who should monitor developments, coordinate supervisory bodies or be represented on them? So who should be given influence?

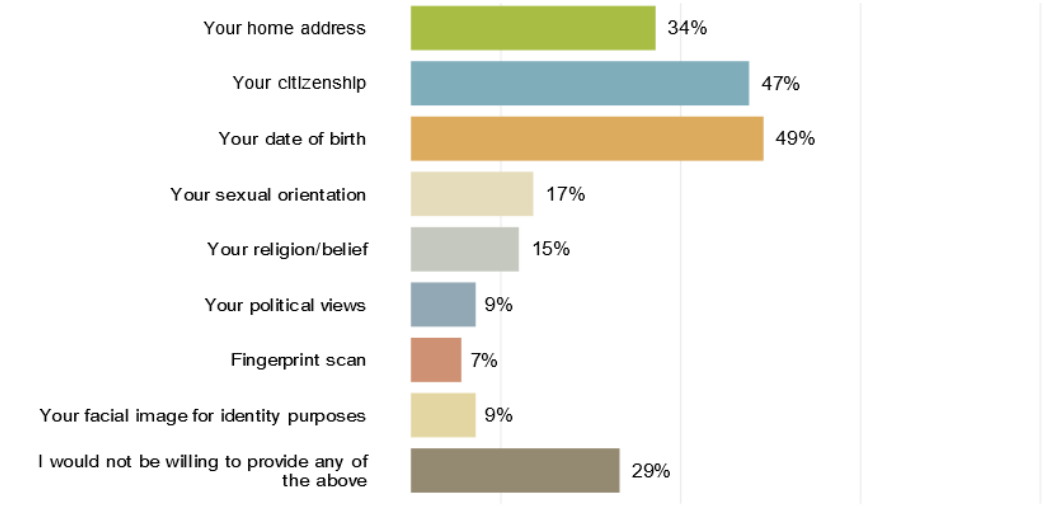
From context to the concrete: The Fundamental Rights Survey 2020 (FRA 2020) asked young Europeans regards their willingness to share data with private or public authorities. Whom do they find more trustworthy when it comes to storage and processing of sensitive data that allows conclusions on the personal identity characteristics? Here the answers for 16-29 year old:

WILLINGNESS TO PROVIDE PERSONAL INFORMATION...

...to **public administration** to use their services



...to **private companies** to use their services



▶ Source: FRA (2020) Fundamental Rights Survey 2020. Europeans (n=4.195), age group: 16-29 respondents.

The results seem to confirm the ambiguous picture. Businesses and especially technology businesses are seen as competent. But when it comes to share concrete personal data, others (and even the state) seem to be a bit more trustworthy. For AI in education as a field that affects young people vitally, the following picture emerges:

WHO SHOULD DECIDE ON HOW ARTIFICIAL INTELLIGENCE USED IN EDUCATION?

▶ Source: Gagrčin et al. 2021, p. 23 | n=3.000 (DE, FR, GR, IT, PL, SV), age group: 18-30

Assuming that the youth of Europe, when they have to make a decision only in favour of one stakeholder, are more likely to trust the educational institution to co-decide for them, the question arises if this organisation can fulfil these expectations. How should different education sectors organise the participation of young people in such decisions and in control of technology? What needs do young people have? Who are their supportive contacts for questions and concerns? Here youth work comes in.

RIGHTS AND POWER TOWARDS PLATFORMS

European Digital Rights (EDRi 2023) asked young people about data protection and privacy needs in the digital dimension.

43% of respondents called for alternative measures to internet harms as "Improving media literacy and training of young people under 18 on the risks and appropriate responses."

37% asked for "Improving the mechanisms for young people to report cases of grooming and ensuring that they are adequately and effectively followed-up."

▶ Source: EDRi (7/3/2023)

FACILITATORS OF THE DAILY USE OF TECHNOLOGY

79 % cybersecurity and better protection and safety in the digital technologies

74 % human support to help accessing and using technologies

72 % more education and training to use digital services

▶ Source: Eurobarometer 551 QC 3.3 (2024); n=26.346; Europeans older than 15

CONCLUSIONS 3.1 – TRUST

BLANK SPACE

Whom we trust depends on our picture of the relevant actors. It is not about a superficial "business versus politics versus NGOs versus media". All play a confidence-building role in a democratic civic culture. We need to take a closer look and adopt a **view that is neither naïve nor too critical of power**: Who are the NGOs and lobbyists who make public statements? What is the difference in interests between Nextcloud and TikTok, for example? How do populist or liberal politicians view regulations? For regulation it is crucial to decide, who should become trusted to exert the power that regulations give to them.

While a critical attitude is important in order not to be taken in by the promises of the respective actors and to get to the bottom of one's own needs, youth work should not be satisfied with the diagnosis ‘everyone is dirty’. Rather, it's about developing ideas about who should have which specific tasks, control options and decision-making powers. In other words, how the **architecture of digitalisation governance** should be structured systemically.

While companies are granted an important role as actors at European level, **civil society** is completely overwhelmed when it comes to getting involved in debates on regulation and monitoring implementation at the right time and with sufficient resources, the question arises **which actors actually (should) take up the interests of young people** and what conditions they need in order to do their job well.

A deeper aspect is the question of **social trust** and the conditions for its success. In other words: How must organisations or sectors behave so that trust can arise in the sense of the democracy paradox (trust in democracy arises in a balance of effective opportunities for mistrust and trust). In particular, this question must be **applied to the actors in digitalisation** itself: To platforms, but also to their services.

The aspects of **democracy, rights and governance** seems to be underrated in practices. Some stick to privacy, data protection and harm-minimisation and create a limited picture of the rights in digitality. Other activities, in example those that focus on ‘digitalisation that we want’, tend to ignore a systemic view and governance. Youth work and youth education are requested to address these contradictions and to support youth in finding their position toward regulations but also discuss their ideas and criteria for trustworthy governance structures of the future.

3.2 BRINGING ORDER INTO INFORMATION DISORDER

The polarisation of public discourse is changing the public space that is essential for democracy. The media sector itself is also changing in its relationship to other areas of the system. Business models and professional profiles are changing – journalists, PR professionals, platform architects, content creators and average users are co-creating the infosphere and boundaries between the media-related professions become blurry. Professional standards, consumption habits and information needs change.

Last but not least, in several European countries, we witness how media policy has been used to restrict pluralism and the rule of law. The Polish example illustrates how long-lasting the interference with media freedom is, how great the structural damage is. On

the other hand, Portugal and also Bulgaria, although the latter on a still low level, show that positive development is possible.

FREEDOM OF PRESS: WORLDWIDE RANKING

	2024	2019	2014
NL	4 →	4	2
PT	7 ↑	12	30
DE	10 ↑	13	14
ES	30 ↓	29	35
IT	46 ↓	43	49
PL	47 ↑	59	19
BG	59 ↑	111	100
HU	67 ↑	87	64

"Press freedom is being put to the test by the ruling parties in Hungary (67th), Malta (73rd) and Greece (88th), the EU's three worst-ranked countries. Giorgia Meloni's Italy (46th) has also fallen five places."
Reportes Withouth Borders (2024)

▶ Source: Reporters without Borders

More than ever and brought about by digitalisation, **intermediaries play an essential role**. They are not just neutral platforms but have goals themselves, emphasizing some content while treating others as less relevant. Thus, a fundamental understanding of platform capitalism and social networks becomes essential.

Because information opportunities and open to all public spaces that reflect the plurality of society are a basic prerequisite for democratic societies, the importance and conditions of quality journalism and media as pillars of **democratic resilience** must also be addressed and the **structural change in the media landscape** must be understood.

YOUTH: SOURCES FOR INFORMATION ON SOCIAL & POLITICAL ISSUES

▶ Source: European Union 2024b | Q7, n=25.863, EU citizens, age group: 16-30

In all European countries, **public broadcasters** have long since lost their dominant role in entertainment. However, this does not apply to their role in political information. At their best, they fulfill a role that profit-oriented media players are increasingly less able to fulfill the more they face economic pressure: **balanced and professional reporting**. At the same time, public broadcasters are under pressure. There are funding issues.

Governing parties repeatedly attempt to appropriate them for their purposes. Different countries have taken different measures to prevent political occupation and to maintain broader representation in public media. Public broadcasters are in competition with established and new media players (such as platforms or creators) but from a democratic perspective, they (and their digital extensions) play an important role.

POLITICAL AND SOCIAL INFORMATION: FAVOURITE PLATFORMS

	highest	lowest
1. **Instagram 47 %**	IT 59 %, PT 56 %	BG 28 %, LT 27 %
2. **TikTok 39 %**	AT 50 %, HU 49 %	CZ 20 %, EE 23 %
3. **YouTube 37 %**	IR 46 %, PL 45 %	ES, NL, PT, SK 32 %
4. **Facebook 27 %**	LT 56 %, HU 55 %	ES 11 %, DE 15 %
5. **X 21 %**	IR 37 %, ES 36 %,	SK 8 %, AT, HU 10 %

▶ Source: European Union 2024b | Q8, n=25.863, EU citizens, age group: 16-30

Acknowledging that “the emergence of the internet and social technology have brought about fundamental changes to the way information is produced, communicated and distributed” (Wardle & Derakshan, 2017, p. 11) and that the term"fake news” is too vague, instrumental or narrow, Wardle & Derakshan introduced the concept of **information disorder**.

INFORMATION DISORDER

MIS-INFORMATION

Information that is false, but not created with the intention of causing harm.
Examples: false connection of elements, misleading content...

DIS-INFORMATION

Information that is false and deliberately created to harm a person, social group, organization or country.
Examples: false context, imposter, manipulated, fabricated content...

MAL-INFORMATION

Information that is based on reality, used to inflict harm on a person, organization or country.
Examples: public harassment, hate speech, (private) leaks...

HARMFUL

▶ Source: Wardle & Derakshan 2017. Information Disorder

Furthermore, the fact that **harmful actors or anti-democrats** take advantage of the opportunities offered by the rules of the game on the platforms must be addressed. It is not just about recognizing "fake". Democracy-related media education is particularly concerned with understanding, as Wardle put it, the "weaponization of context" and the intentions to harm (Wardle & Derakshan, 2017).

"Hate speech is understood as all types of expression that incite, promote, spread or justify violence, hatred or discrimination against a person or group of persons, or that denigrates them, by reason of their real or attributed personal characteristics or status such as 'race', colour, language, religion, nationality, national or ethnic origin, age, disability, sex, gender identity and sexual orientation" (CoE, 2022).

Concretely **fact-checking skills** are a crucial condition to deal with malinformation and disinformation. Surveys reveal a different picture for Europe: 32 % of the 16-19 years old in the survey from 2023 checked during the last 3 months "the truthfulness of the information or content they found on the internet news sites or social media". However, the bandwidth is very broad between countries. One can conclude that the effectiveness and scope of formal education in the member countries as well as the civic awareness among parents and peers (as elements of informal education) is different.

FACT-CHECK PRACTICE OF YOUTH

Checked truthfulness of media:

Finland	**62 %**	(highest value)
Portugal	**37 %**	
Spain	**36 %**	
Austria	**33 %**	
EU 27	**32 %**	
Belgium	**30 %**	
Germany	20 %	
Bulgaria	11 %	
Serbia	5 %	(lowest value)

58% believe, that news will find them.

▶ **Gagrčin et al. 2021, p. 40**

▶ Source: Eurostat: Evaluating data, information and digital content (2021 onwards) isoc_sk_edic_i21__custom_14948721

ACCEPTANCE OF AN AI DECIDING ABOUT NEWS RECOMMENDATIONS

47 % comfortable **27 %** indifferent **26 %** uncomfortable

▶ Source: Gagrčin et al. 2021, p. 33 | n=2.807 (DE, FR, GR, IT, PL, SV), age group: 18-30

The Weizenbaum Institute's study from 2021 let assume that youth is trusting the algorithms **that news would find them** and is consequently putting less efforts in active exploration of the media landscape: „As social media platforms are steadily replacing traditional media channels, a considerable number of respondents (58%) in all six countries believed they could be well informed even without actively seeking news (Gagrčin et al. 2021, pp. 40). This goes inline with youths **relatively small investment** in media or e-books.

Another aspect related to the changes is the **ability of persons to process and evaluate news**. Reuters News Institute points out, that during the last years the share of persons saying, "they feel worn out by the amount of news" increased in Europe: 18 % increase in Spain, 9 % in France (Reuters News Institute, 2024, p. 27)

THE BIGGEST IMPACT OF EU DIGITAL REGULATION ON CITIZENS

Misuse of personal data	23%
Fake News	20 %
Insufficient protection of minors	14 %
Not trustworthy online seller	10 %

▶ Source: Eurobarometer 551 QC 5a (2024); n=26.346; Europeans older than 15

Regards media policy, with "fake news" and "insufficient protection of minors" are two topics on the list of top issues on which citizens trust the EU to regulate. This recognizes the work completed in 2024 on the EU's Digital Services Act/Digital Market Act package. In this sense, digital education on misinformation and harmful information must focus on the European level and regulatory issues.

CONCLUSIONS 3.2 – INFORMATION DISORDER

INFORMATION DISORDER

As indicated in the identity chapter, there are legion of practices, initiatives and projects that deal with hate speech, fake news and fact checking. Despite the fact that this is in our democracies a vitally important topic, there is one major points of criticism to issue: Projects mostly **look on the phenomena, not on the structural causes**. Thus the perspective of systemic regulation and of accessing and defending digital rights are crucial. From a digital rights and governance perspective these projects clearly **lack the systemic level**. For the platforms and intermediaries it does not necessarily matter what is propagated, as long as users stay on the platform. This leads to a further exploration: why platforms became a game-changer in media and information? What are their political and business models?

PRACTICE: INFORMATION DISORDER

Game: Influence. Inc. Strategy-simulation game on how to manage a digital influence agency by Curious Bird → LINK

Open the Box The project brings media, data literacy and AI literacy into schools in Italy → LINK

Fake it to make it. Fact or fake? A game by Curious Bird → LINK

Who Targets Me makes online political ads more transparent → LINK

Guides: InEdu Project. On information disorder, stereotypes and hate, published in the project IN-EDU. → LINK

Handbook: Digital Resistance. For Teachers on how to support their students to recognise fake news and false information found in the online environment by the Digital Resistance project (English, French, Georgian, German, Greek). → LINK

DEMOCRATIC AND INDEPENDENT JOURNALISM

The media has long been undergoing structural change, which generally makes the work of those committed to independent, democratically conscious journalism more difficult. At the same time, social recognition of the media has declined in recent decades (see Edelman, 2025). Young people, in particular, are less likely to obtain information from paid media, print media, or websites, but rather from contributions curated and distributed on social media platforms. Therefore, education and youth work must convey the relevance of independent journalism, its working conditions, and its role in democracy, embedded in digital media pedagogy.

PRACTICE: MEDIA AND JOURNALISM

Newswise. Programme by the Guardian Foundation. Including resources and lessons plans for the ages 7-11 to be conducted across Europe. → LINK

Journalismus macht Schule. Association run by journalists for the support of news and information competence in schools, offering classroom visits, workshops and a resource base (German). → LINK

Guidebook: Media and Information Literacy. Extensive guidebook for trainers by Deutsche Welle (English, Spanish and French). → LINK

REUTERS INSTITUTE DIGITAL NEWS REPORT

The 2024 report shows the growing importance of platforms for news consumption and production. It explores audience attitudes towards the use of AI in news, the role of creators and news Influencers, how much people pay for news and more. → LINK

CONSPIRACY

In response to increasing climate change denial in the infosphere and boosted by the Covid-19 pandemic, youth work and civic education started (again) to take up the topic of conspiracy theories, conspirational world-view. One path of practice focuses on detection of conspirational thinking in texts or imagery, similar like the dominant education related to "fake news". Another approach is to deconstruct it – reasoning about elements of conspiracy narratives, distinction between world views, theories, narratives. The latter connects learning about conspiracy with reasoning about democracy – the function and role of conspiracies in societies and the threats caused by them.

MATERIAL: CONSPIRACY

Effectively counter conspiracy narratives and fake news. Educational material by aktuelles forum (German) → LINK

Unravel the Conspiracy behind Conspiracies. The Good Guidebook. Guide on essentials of conspiracy narratives, amplification, language by Dare to be Grey (Dutch, English). → LINK

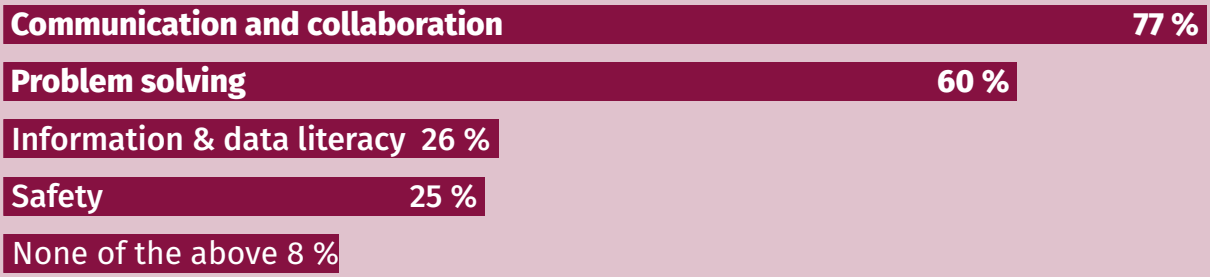
Addressing conspiracy theories: what teachers need to know. Published in 2022 by the United Nations Educational, Scientific and Cultural Organization.→ LINK

Observatory on conspiracy by author Jacopo Di Miceli (Italian). → LINK

MEDIA AND INFORMATION LITERACY

In many non-formal educational and youth work projects communication and collaboration and tool mediation (and respectively skills development to use these) are more in focus than information competence. Only few practices however foster digital competences development in a more sophisticated way aligned to the intentions of MIL or DigComp.

DIGITAL KNOWLEDGE ACQUIRED IN ERASMUS + YOUTH PROJECTS



▶ Source: Horta Herranz et al. 2024, figure 63

The starting point of all media education approaches (from an EDC/HRE perspective) must be to convey how media, platforms, NGOs and fellow human beings in various public spaces **influence young people's ideas about socio-political issues and about others**. In this sense, resilience against fake and malinformation and a polarised and toxic discourse is the general aim of media education. The UNESCO MIL approach in particular can serve as an inspiration to give more weight to democratic aspects.

UNESCO MIL

"A set of competencies that help people to maximize advantages and minimize harms. Media and information literacy covers competencies that enable people to critically and effectively engage with: communications content; the institutions that facilitate this content; and the use of digital technologies. Capacities in these areas are indispensable for all citizens regardless of their ages or backgrounds."

►UNESCO 2021

DIGCOMP: INFORMATION AND DATA LITERACY

Browsing, searching and filtering data, information and digital content (1.1)

Evaluating data, information and digital content (1.2)

Managing Data, information and digital content (1.3)

► Source: Vuorikari et al., 2022, p. 9ff.

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Regards fact checking and disinformation EDC/HRE brings a **democratic and systemic perspective** into the learning: It explores how single messages relate to the larger phenomenon of societal polarisation. As such the goal/intention of a post and its contribution to a resilient democratic infosphere – or to information disorder – become relevant aspects of learning. As previously described, research has already shown that young people themselves pay little attention to the societal relevance, which emerges from the sum of all fake and hate messages for democratic culture (Gemkow, 2024).

Aside developing means to proof and validate information (fact-checking), the question arises, how **information disorder and polarisation influence youth identity** – their very personal ability to show trust to others, their perception of others and of themselves, and how it affects them in societal roles (I. e. consumers and producers of messages, as a citizen taking also political relevant decisions and offering opinions...).

To learn what promotes polarisation, hate speech, and information disorder on the **platform side**—algorithms, value metrics, dark patterns, political goals of operators... This also includes understanding the possibilities to influence who is available to **protect and support young people** (trusted flaggers, NGOs, police...).

3.3 WORKING WITH DATA

Organizations, academics and public bodies collect data and analyse the state of democracy, civil society, Fundamental Rights, the Internet or any other social development. Their data and reports inform and help democracy and human rights education practitioners in manifold ways.

Informed use and analysis of data provides **insight into ongoing developments** in society, e.g., how discourses develop in social media and which groups are gaining influence in public discourse. Population statistics, traffic or environmental data inform citizens about developments and problems in their community.

Data provide also **evidence** about socio-political issues and justify or falsify assumptions, as such contributing to critical and systemic thinking.

Initiatives, NGOs and educational institutions also collect and analyse **data from the bottom-up** for their own purposes. Data help them to measure and present impact in reports or to present their case in an evidence-based way.

Data has always been highly political, too. Data-driven research was intended to justify or denounce discrimination. Environmental data, after the Chernobyl nuclear disaster, helped independent citizens find out what really happened. The environmental movement in the Warsaw Pact countries had to laboriously and illegally acquire or build measuring devices to measure the concealed extent of environmental pollution. And, of course, politics is made through data interpretation. Since much of the information and research is funded by companies (either as primary coordinators or collaborators), as well as by governments, it is essential to **contrast sources**, in example with independent studies.

SOCIAL MEDIA MONITORING

Measures for the systematic, thematic, local or group-specific collection, processing and analysis of social media communication using real-time data.

Social Media Monitoring is in the public context part of “Open Source Intelligence" (OSINT).

The more communication takes place on platforms, the more interesting it becomes to analyse these data streams in order to find out, what people think, post, and feel. **Real-time tracking of social discourse**, identifying trending topics of disinformation or hate news, learning who and what is gaining and loosing influence in the Internet – monitoring social media is becoming a more and more relevant working field for civil society, public authorities and businesses.

Freedom House publishes the Freedom of the Net Report looking especially critically on "**government intrusion into the digital public sphere**" as a potential for abuse of power, in example, limiting free speech and assembly, violating rights of certain groups etc. "Justifying their efforts in the name of enhancing security, limiting disinformation, and ensuring public order, governments have effectively co-opted social media platforms" (Freedom House, 2019). Especially the use of AI is raising concerns.

Others say it is only with monitoring that **democratic rules of the game and non-discrimination** can be enforced nowadays. The European Centre for Electoral Support hints on the danger of unmonitored social media discourse for free and fair elections: "To ensure the respect of the free will of the voters, it is essential to observe and analyse media coverage all along the electoral process. Not only during the election campaign, but also beforehand. It is equally important to monitor the institutional communication of Electoral Management Bodies, to keep a track of how their perception and portrayal is in the media" (ECES, 2022, p. 2). In order to combat hatred and harmful information, the EU has also deliberately ensured that civil society and academia are involved in monitoring and data analysis. The so-called **trusted flaggers** are to be given uncomplicated and privileged access to the platforms' complaints mechanisms in order to report cases. Civil society expertise is necessary in order to recognize and analyse the dynamics of hate speech and group-focused misanthropy and to (also) inform educational professionals on this basis.

OPEN DATA

"Open (Government) Data refers to the information collected, produced or paid for by the public bodies (also referred to as Public Sector Information) and made freely available for re-use for any purpose. The licence will specify the terms of use."

▶ Source: data.europa.eu

OPEN DATA MATURITY: TOP 5 EU COUNTRIES

France Poland Slovakia Ireland Spain

▶ Source: Open Data Maturity Index, data from 2024

An important condition for achieving the ESD goal of "open education for all" and for opinion-forming in a pluralistic society are freely accessible findings from research (for example through **Open Access**), open educational materials – **Open Educational Resources** (OER) – and generally openly published findings that serve the general public as **Creative Commons.** Digital culture has shown the way: **Free and Open Source Software**

(FOSS) are an integral part of the plural and (still) open ecosystem that is the Internet and a prerequisite for its success.

CONCLUSIONS 3.3 – DATA

USING REPORTS, SURVEYS AND ANALYSIS

On the one hand, data offers a wide range of opportunities to bring real-world context into the learning environment, for example, through opinions and attitudes, the state of democracy, or one's own environment. This also includes so-called open data from public bodies such as administration or statistical institutions such as Eurostat. Youth workers also need **training opportunities in data reading and processing**. There are few opportunities for this.

The importance of **open and free software, open educational materials and open knowledge**, both for the pluralistic internet and often as a less questionable alternative to the apps and services of data-hungry platforms, is almost never communicated.

EXAMPLES: REPORTS, SURVEYS, ANALYSIS

Our Data is our Ally. Data on the experiences of young people by FRA → LINK

Democracy Index. By EIU – Economist Intelligence Unit → LINK

Global State of Democracy Report. By IDEA - International Institute for Democracy and Electoral Assistance (IDEA) → LINK

EU Fundamental Rights Reports. Annual reports by the European Union Agency for Fundamental Rights (FRA) → LINK

CIVICUS Monitor. Tracking Civic Space. Online tool providing data from CIVICUS. → LINK

Freedom of Press Report. By RSF – Reporters without Borders → LINK

Ecological Threat Report. By Vision of Humanity/Institute for Economics and Peace (IEP) → LINK

Reuters Institute Digital news report. → LINK

YOUTH WORK WITH DATA

Young people can also work with data. **Mapping** projects work with geographical data. **Open source** projects, such as those based on Open Street Map, also offer opportunities to do this in an ethical manner with regard to data collection.

EXAMPLES: YOUTH WORK WITH DATA

uMap Map building tool on the basis of OpenStreetMap, the Open Source alternative to Google Maps. → LINK

This is not an atlas. Inspiration for artistic-activist-feminist maps (also a book) → LINK

Wikimedia. Contribute top the Open Source project voluntarily or in groups. → LINK

Data School. Empowers non-profit organisations to understand data and technologies in order to use them in a targeted way. By Open Knowledge Foundation Germany. → LINK

Dear Data. An analog data drawing project. The participants collected weekly a particular type of data about their lives and used this data to make a drawing on a postcard-sized sheet of paper. → LINK

SOCIAL MEDIA MONITORING

Findings from social media monitoring for professionals often focus on forms of group-related xenophobia and radicalization prevention. Despite this limitation due to a narrow thematic focus, they still offer the opportunity to gain an understanding of what is happening in society, which influencers are gaining importance, and which topics and campaigns are virulent.

EXAMPLES: SOCIAL MEDIA MONITORING

KN:IX plus. Information for pedagogues and youth workers about the communication of Islamist online actors. By Competence Network “Islamist Extremism” (German). → LINK

Democracy Reporting International. Examines influence on election processes worldwide. → LINK

ENVIRONMENTAL DATA

In environmental education, there are various approaches to collecting environmental data and thus supporting nature and environmental research. This goes in the direction of citizen science. Or there are apps that allow plants and animals identification. Users take photos and share their locations. Other projects present environmental data so that it can be used in educational processes.

EXAMPLES: ENVIRONMENTAL DATA

KlimaDatenSchule. An educational programme on data usage by BildungsCent e. V. The respective app provides data. → LINK

Practical Guide: Access to Environmental Information. Information is power, and this guide delves into the regulation of access to data, explains how to request information, what types of information can be requested, and the policies and regulatory frameworks. By Ecologistas en Acción (Spanish). → LINK

Collection: Green Apps. Overview over different 'green' apps presented by the German Environment Ministry: → LINK

Project: Proyecto Libera. Citizen Science project (citizens contribute to environmental data collection) on litter in the environment: → LINK

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There is a lack of **training and tools** to help youth workers access datasets relevant for them and process and analyze this data in a comprehensible manner. Also youth work itself is lacking to produce valid data and create an imagery, and frame for action.

Regarding **social media monitoring and other forms of OSINT**, questions arise as to which is socially desirable and under what conditions. Should a school be allowed to know what its students post on social media? Should citizens also have access to the survey data that the state commissions and pays for with taxpayers' money? Which form of discourse monitoring helps young people feel taken seriously as legal subjects, and which do they perceive as a threat to their privacy that, in their view, should be prohibited?

3.4 CIVIC COMPETENCE AND DIGITAL SKILLS

Digital competencies understood as key competencies describe a broad range between specific abilities to deal with (new) technology to the broad abilities to apply technology and digital forms of collaboration and information in classical professional, social or cultural activities.

DIGITAL COMPETENCE

The ability to use, shape and apply information technology for different purposes and in manifold societal contexts.

Understanding of 'the digital' as transformation and social, economic, cultural determinant, in particular in its connection to democratic principles and Human Rights. The ability to actively co-shape the transformation in this sense.

Observing the current development of digitalisation in Europe and the myriad demands that education must prepare the citizens for the digital age, it is becoming evident that critically assessing digital transformation (critical thinking), understanding of the positive and negative impacts of it (systemic thinking) and the ability to co-create transformation and digitality as a culture (participation) are needed.

"Evidence shows that to keep up with digital developments, simply improving digital literacy is not enough. The ESJ survey data show adults in jobs requiring at least moderate-level ICT skills also require a strong level of complementary skills, such as foundation skills (literacy, numeracy), soft skills (planning and organisation) and behavioural skills (communication and teamwork)" (Cedefop, 2017, p. 3).

Such a concept goes beyond a media or information competence and links strongly to other competences such as learning to learn, proactivity, or other social abilities such as problem-solving, conflict resolution and reconciliation skills. Digital competences, then, should be considered as transformative competences. The challenge is to overcome an overly-close association with computer literacy or digital literacy as a mere development of traditional literacy (OECD, 2019).

Other aspects must be included in education promoting digital competence, for example data literacy, the crucial ability "to derive meaningful information from data, the ability to read, work with, analyse and argue with data, and understand what data mean". Communication and living together in our society are affected by the generation of data that is increasingly diverse, on information extraction from this data by algorithms, and on the application of this information via machine-mediated assistance (OECD, 2019).

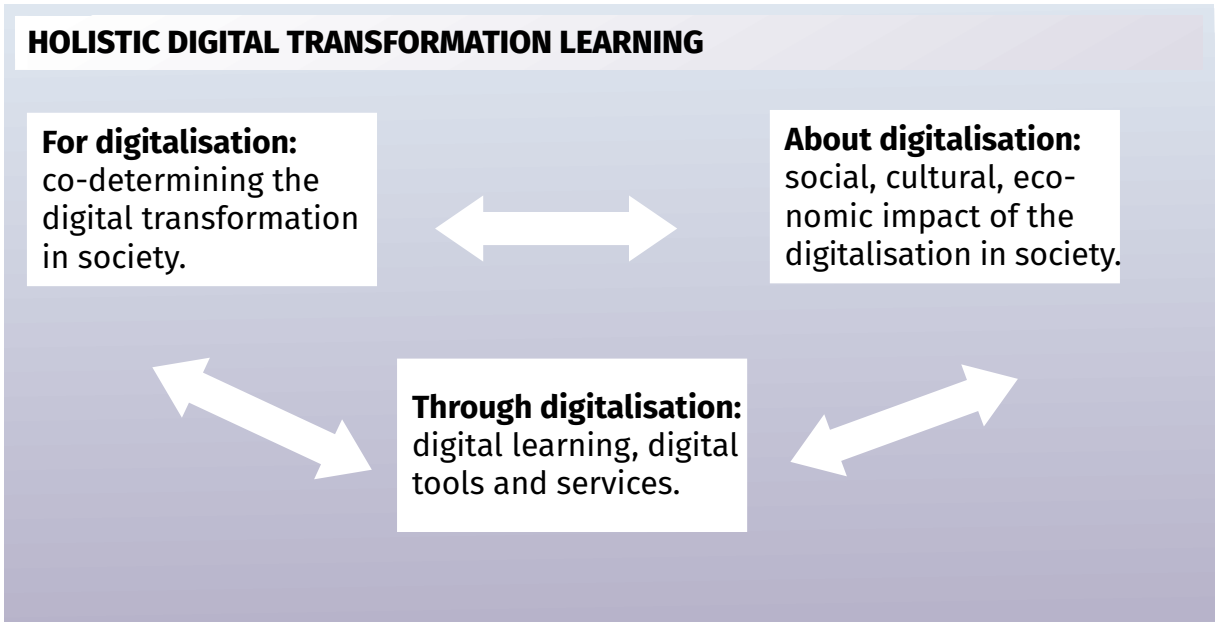
DIGITAL CITIZENSHIP EDUCATION

"Empowerment of learners of all ages through education or the acquisition of competences for learning and active participation in digital society to exercise and defend their democratic rights and responsibilities online, and to promote and protect human rights, democracy and the rule of law in cyberspace."

Council of Europe CM/Rec(2019)10.

Democracy and human rights education are approaches that bridge the gap between a systemic understanding of society and the concrete empowerment of learners in a specific (local) context. The points of reference are a democratic culture and its foundations, civic participation and human rights. Therefore, they not only offer the normative reference of digitalisation to democracy that other approaches often omit, but also train important competences: judgment, critical thinking and self-reflection.

In this sense, **ethical perspectives** become a core of future-proof learning. "Ethical aspects involve a cross-cutting area in the comprehensive training of individuals who are meant to benefit from the immense opportunities offered by the current digital and virtual context. Ethical reflection, ethical sensitivity, and self-regulation of current information and communication systems in the digital environment, from ethical perspectives, respond to a shared sensitivity widely agreed upon in the social and professional sphere. This urgent need for reflection and action goes beyond the financial interests of companies and other partisan political interests" (Translation by the editors, de Andrés del Campo et al., 2018).



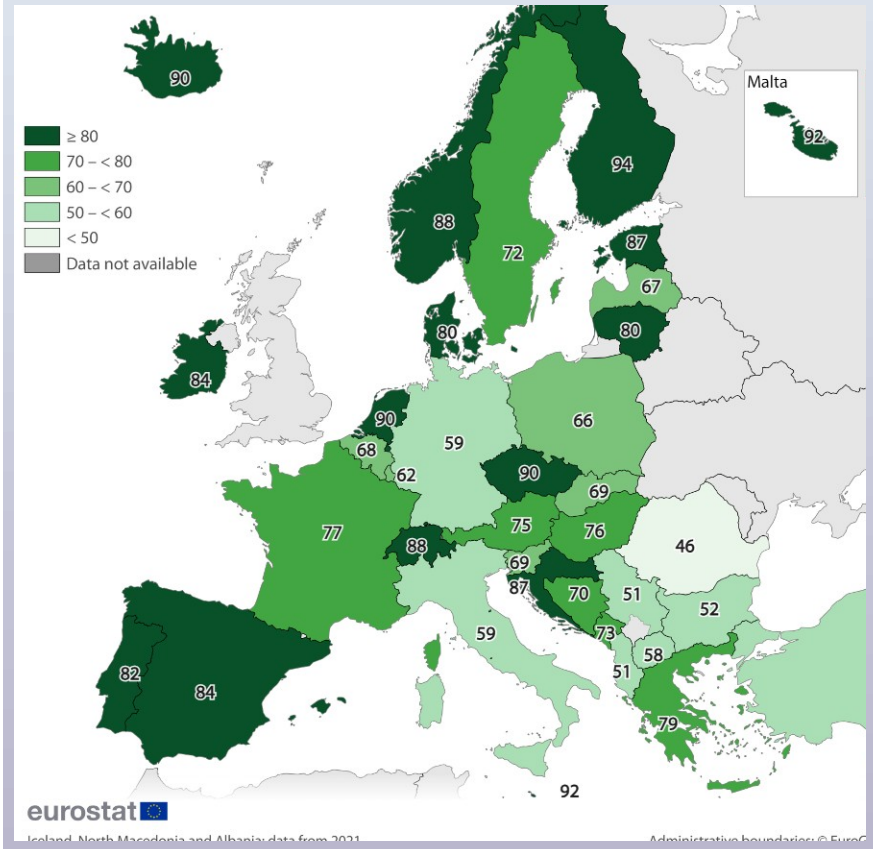
The perspective of democracy and human rights related youth work is, that youth work for/about/through digitalisation will have a higher and lasting impact if, in addition to imparting digital skills, it also consistently incorporates the sociopolitical dimension and ethical aspects.

Conversely, this also obliges forms of youth work aiming to address democracy and rights to more strongly integrate digital technology.

All in all we need to underline, that youth work is whether analytical learning of democracy nor coding. (Digital) youth work addresses many competences: It is about having one's own independent opinion, learning together, a lot of practical experimentation and exploration. Understood as empowerment for young people, it also means engaging in exchange with others, representing interests, and being able to join forces as young people, if digitally or in presence.

An important contextual factor for Youth Work is is to actively asking the extent to which young people themselves acquire digital and civic competences, as well as the extent to which this happens in formal education.

DIGITAL SKILLS OF YOUNG EUROPEANS IN 2023



Share of 16-29 year old with basic or above basic skills in %

▶ Eurostat isoc_sk_dskl_I21; Individuals' level of digital skills (from 2021 onwards). 16-29 years

The acquisition of digital skills is also **linked to acquisition of 'classic' basic skills,** while the widespread idea that the young generation consists of “digital natives” negates this. Those who have “basic knowledge (reading, writing, arithmetic), soft skills (planning and organization) and certain behavioural skills (communication and teamwork)” also perform significantly better in terms of digital skills (Cedefop, 2017, p. 3). The OECD concludes that increased use of digital devices at school “often has a negative impact on reading performance” (OECD, 2021, p. 142). This applies all the more to those who find barriers to books and analogue texts. Digital literacy must therefore be taught in relation to other transversal skills: Otherwise the competence to fact-checking, reading and evaluating longer articles decrease – or even writing appropriate messages if language AI is more and more used for creating messages.

The digitalisation of the learning space and process has an impact on the transversal and digital skills of young people. Longer texts, complex argumentation and also reading and writing skills cause problems (among others confirmed also by Accenture, 2022,p. 16 ff.). The use of AI for various purposes is especially to mention here.

In terms of methods, content and work, non-formal education can (more) specifically address competences that are important for a critical understanding of the world and society co-shaped by digitality. Irrespective of the competence focus, the ability to express oneself, to communicate, is a key feature for identity development.

The interviews support the critique of the term 'digital nativism'. Access to and use of digital technologies is strongly linked to issues of affordability and competence to use the devices depends on the availability of devices:

"The smartphone is the primary access to digital services for the young people we work with. Young people from our target groups often do not have the financial means to buy a computer. So our seminars are often the first time they learn how to turn on a computer, laptop or other device. The technical sphere of the Internet is quite complicated to understand and far away from the reality of their lives. Their point of entry into digitality is to create a nickname or an avatar on a social media application, on a game, or to set up accounts and profiles on applications for various purposes. Email is not the primary means of communication, so identification is a nickname, a password, a phone number. A smartphone is a signal of social status. This is our entry point to work on socio-economic issues and digitality. Young people who are active in gaming communities have very interesting communication skills. The young people in our seminars come from very different national backgrounds, so the issue of access to information and validation of information is very relevant – often they get information mainly from news, portals, media in their mother tongue." M., youth worker

The inequalities in the use of computers with higher computing power than smartphones is confirmed by several studies. Children living in smaller towns or in families with low incomes use more smartphones. (Accenture, 2023). From this perspective, holistic and democracy-oriented digital youth work is not just about what it teaches and how it does it. It must also advocate for the **prerequisites** — accessibility or good hardware — and not take digital inequalities for granted.

GENERAL CONCLUSIONS

THREE GENERAL APPROACHES

In the practice of youth work there are different approaches. There is a general approach one could characterise as a **phenomenon-based view** – in example on AI, apps, certain social media, games, consumption. This means that if there are issues that are related to the everyday digital lives and experiences of young people, youth work will take them up, explore them and integrate them. it. It is a bit like "outreach" youth work understood as going into the trending platforms and fields of application that young people are (currently) involved in. While this approach ensures that youth work is 'up to date' it risks getting educationally lost in the ever new forms of digital daily life.

Another approach can be characterised as **skill focused**. This includes often a rather technical perspective of developing **specific** competences related to issues such as mental health, addiction, cyber bullying, hate. This trains behaviours and routines relatively accurately, but only involves a limited strengthening of young people's reflexive understanding of not only being a user, but also understanding how the processes in which young people are embedded as a user function.

A third approach can be described as the **systemic-political perspective on digital transformation.** It seems to play a subordinate role in youth work. It aims to integrate the economic and political framework (digital policy, technology policy, digital business models, digital capitalism, why and how dark patterns work etc.). A democratic and human rights perspective guides this approach, which delves into interests, governance, rights involved in a context, access, participation or openness.

This perspective is also curious to understand datafication, network expansion or globalisation in their **broader and also historical** lines. As this would contribute to a better understanding of the bigger picture behind individual digital phenomena or trends, a deepening and better approaches and materials on this would be desirable.

AI AS CHALLENGE AND PHENOMENON

With regard to **AI and big data**, young people are affected in various dimensions and roles (as students, interacting with bots, as consumers...) Such, a pedagogy of learning with digital tools is on the one hand very motivated to keep up: Experimenting with AI and interfaces that are currently available. Young people are trying things out for themselves.

The problems and challenges from the **cultural perspective** include the exposition to datafication, learning and unlearning of competences and techniques, data protection and privacy, results based on existing (mainstream) data, copyright, inaccuracy/uncon-

trollability of the results etc. Digital Youth Work as a field is valuable since it is a space for free experimenting and using AI (in contrast to school contexts).

As a **socio-political dimension of AI knowledge**, we underline that people can understand and assess the variants and effects of analysis and prediction systems. For example, which rights are affected by AI in which application context. The ability to make judgements about different use cases of AI and its governance (e.g. who decides what is prohibited). Unfortunately, there has been little practice in this area to date. In general, EDC/HRE would have the approach and methodology to change this.

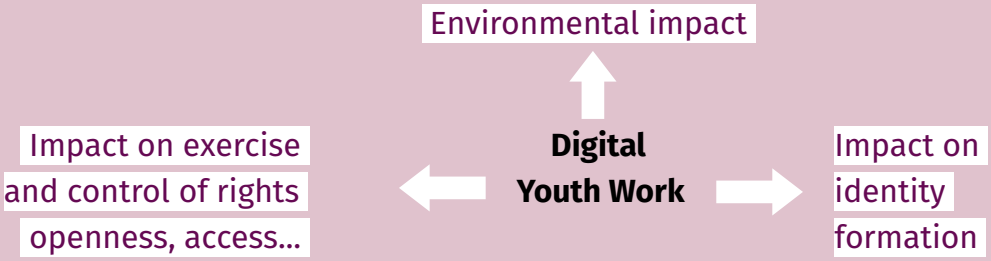
EMPOWERMENT

There is a contradiction in some of the arguments put forward by youth workers. The reason provided for the fact that the "complex" and socio-political aspects of digitalisation are not handled often are argued with the aim to work participant orientated. Which means mean that a youth worker should not simply impose learning objectives on and in extracurricular youth work settings. At the same time, the mission to promote critical thinking and self-reflection is taken very seriously.

Given the complexity of digitalisation, there is a clear need for guidance and accessible pathways for youth workers and education professionals to take this a little further.

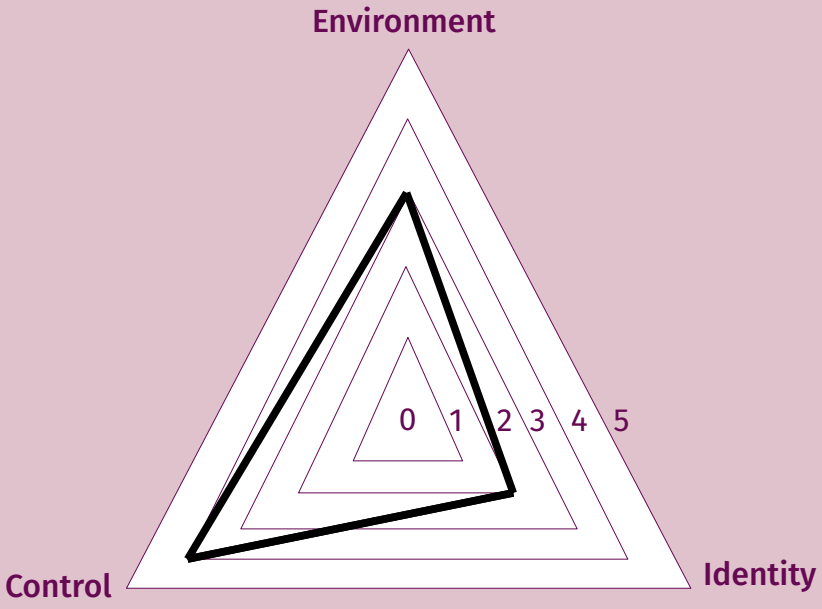
"This lack of holistic approaches is mirroring the difficulty of youth work to paint a holistic picture of digitalisation which is often perceived as over-complex, too technical etc. With most of the identified practices, young people are the beneficiaries rather than co-creators of the developed platforms, which makes it difficult to evaluate the extent to which these tools directly cater for young people's needs and interests, particularly for groups at risk of exclusion (EU-CoE youth partnership, 2020). Informed and meaningful youth digital participation requires young people to have sufficient digital and data literacy skills and the ability to exercise their human rights both offline and online (Pawluczuk, 2020). In other words, young people should be supported to navigate and manage their digital and non-digital lives in a pro-active and informed way – this is where youth work could make a greater contribution". Pawluczuk & Șerban, 2020

Linking back to the three key fields of this analysis, from a perspective of EDC/HRE there is a simple but challenging message to draw. **Make digitality itself the subject of any digital youth work approaches!**



In all three fields – environment (climate change as mega-transition), identity formation (undergoing a key transition to technical co-determination), governance (democratic and demographic) - digitality puts major questions to young people's future paths and – from a democracy perspective – on their democratic involvement in key decisions about digitalisation.

If the practice of digital youth work (as an approach, as a structure, politically) feels responsible, it could **assess and align** its practice along these key dimensions:



Overall, we believe that digital youth work, as outlined in this analysis, should be recognized and understood as an important element for the development of young people. In the EU's own interest as a federation of political entities with far-reaching competences in the area of digital and infrastructure policy, this socio-political, democracy-related education must be given greater consideration.

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