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The Relevance of the *Frankfurt Triangle* for Critical Media Literacy and Digital Citizenship

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Abstract

The paper examines the ambivalence of digital capitalism, contrasting the economic dominance of big tech giants with the promise of diverse digital literacy experiences. Using digital citizenship education as a case study, the paper introduces the Frankfurt Triangle model, a framework that encourages a multi-perspective approach to the phenomena of digitality. This model broadens traditional technological perspectives by incorporating cultural, societal, and interactional aspects. It aims to address the lack of cultural, societal, and interactional perspectives in educational discourses on digitality.

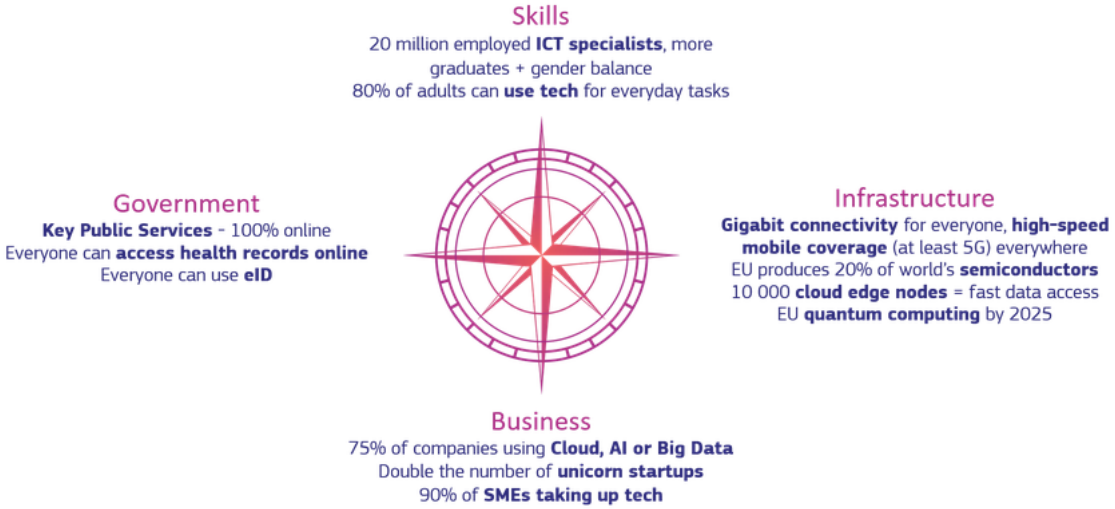
Keywords: digital capitalism, diversity, digital citizenship, digital literacy, Frankfurt Triangle, Digital Decade, participation, democracy

Status quo of digital literacy as a project of digital capitalism

While digital technologies are now widely integrated into education, critical reflection that incorporates empowerment, diversity, and the ability to shape digital media for democratic purposes remains insufficient. Programs like the European Commission's Digital Education Action Plan 2021-2027 (European Commission, 2020) largely focus on technical skills, neglecting the broader societal and democratic implications of digital technologies. As the papers in the 2021 issue of this journal on digital capitalism, datafication, and media education make clear, commercially interested actors are pushing into the sector of education, teaching and learning, installing capitalist digital infrastructures in these fields (Dander, Hug, Sander & Shanks, 2021). As early as 1994, Anthony G. Picciano coined the term *education-industrial complex* to describe this situation which remains relevant today, as commercial actors increasingly shape the educational sector (Picciano in this issue, 2025). Digital-capitalist configurations in public education are becoming normal and influence its organisation, infrastructure and content. While education became a source of data, money and therefore influence for these actors, they also indirectly shaped and still shape educational concepts and goals (Giró Gràcia & Sancho-Gil, 2021). In this context, digital learning and teaching in the digital world are often confused with learning with and through digital technologies. Criticising and reflecting on the individual, socio-cultural, political and structural consequences of digital change must be just as much a matter of course as expertise in the operation of devices and digital services of these stakeholders has been negotiated to date. Only then will we be able to engage in an open and creative process of social negotiation about how we as a society want to shape the digital future.

The Digital Decade 2030, presented by the Council of the EU in March 2021, frames digital literacy through the metaphor of a compass. While the EU's initial commitment to digital literacy emerged in the early 2000s because of the Lisbon Strategy (2000) which focused on economic growth and workforce adaptation to make the EU the most competitive and dynamic knowledge-based economy. At that time the emphasis was predominantly on professionally relevant skills. While digital literacy programmes have made significant progress since then, it is important to note that continued efforts are needed to ensure they comprehensively address diversity, democratic participation, empowerment, and the challenges posed by emerging technologies. Yet, among the Digital Decade's four compass dimensions – infrastructure, public services, companies and skills – (see Fig. 1), the emphasis on digital skills risks reducing citizens to data-driven economic actors, while neglecting the social, cultural, and democratic dimensions of digital engagement. The EU aims for at least 80% of Europe's population to possess the basic 21st century digital skills outlined in this framework by 2030. The Digital Decade's focus on digital skills, while important, primarily targets economic participation and reduces diversity to representation within the ICT sector, overlooking the broader, more inclusive perspectives required for true digital citizenship.

Fig. 1:

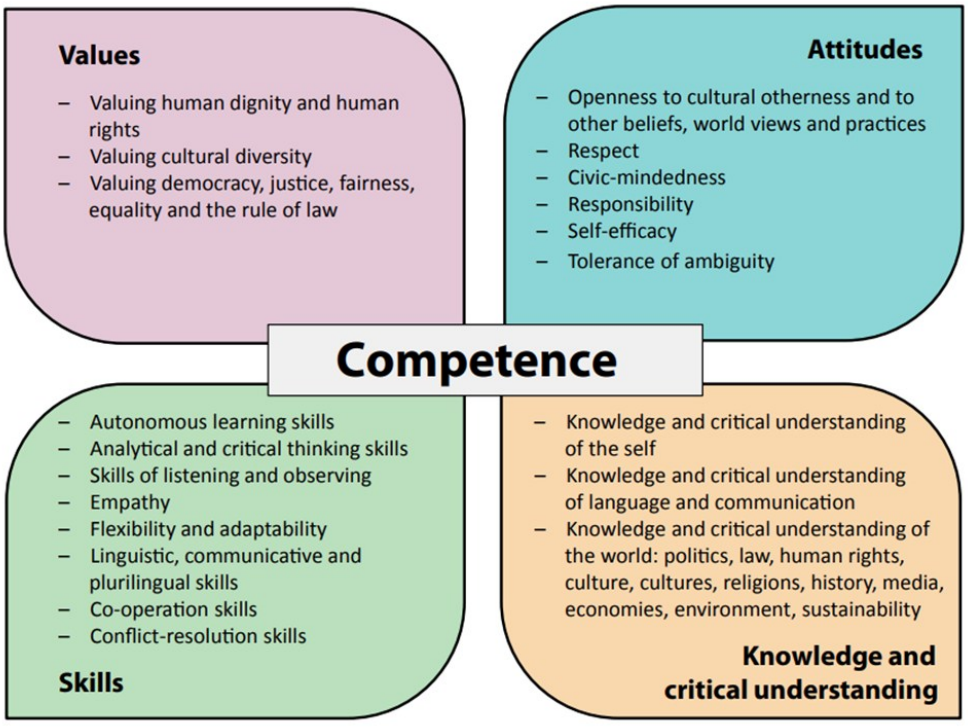


Main goals as compass dimensions of the EU's Digital Decade 2030 (European Commission, 2025).

Digital citizenship

Digital citizenship education (DCE) is a high priority, with a view to ensuring active participation in democratic societies. Skills, abilities, critical understanding and media literacy should also contribute to strengthening values and attitudes (see Fig. 2), according to the 'Digital Citizenship Education Handbook' (Council of Europe, 2022).

Fig. 2:



"The 20 competences for democratic culture" (Council of Europe, 2022, p. 12).
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When you think about citizenship as a subject taught in schools, you might think of it as a combination of citizenship studies and how to become a citizen. This includes the rights and responsibilities of citizens, but also focuses on *duty-based citizenship* (Almond & Verba, 1963), meaning being active in society. In recent decades, the scope of citizenship has broadened to include issues like diversity, inequality, human rights, fair trade, climate change and bullying. The concept of *engaged citizenship* (Dalton, 2008) is based on the ideal of a *strong democracy* designed for a network of civil society-organised, well-informed and interested citizens (Barber, 2004/1984). This brings a broader concept of participation into the discussion, which also changes the understanding of citizenship: *engaged citizenship* is better suited to the immigration societies of the 21st century and allows non-voters to experience political self-efficacy.

While the study of digital citizenship has long been characterised by issues of empowerment and accessibility (bridging the digital divide), this concept has changed significantly in recent years. The pandemic has promoted a new understanding of digital citizenship worldwide (Bignami et al., 2023). The start of the pandemic made it clear how important digital media is in the everyday lives of citizens. Citizenship was visibly shaped during this period by the impact of datafication, platform elements and dynamics on national regulatory efforts (ibid, p. 145).

Thus, the issues of data extractivism and algorithmic surveillance (Zuboff, 2019) in relation to digital citizenship have become evident. The digital tech giants of surveillance capitalism have already taken over many functions previously associated with the state, such as the mapping of territories, by rescaling them. Authors like Shoshana Zuboff (2019), Luciano Floridi (2014) and Benjamin Bratton (2016) provide insights into how digital platforms are redefining traditional territorial boundaries and state functions. This rescaling, in turn, seems to detach citizenship from a specific territory. The digital practices of technopolitical democracies thus create a need to analyse their potentials and challenges. In his contribution on digital citizenship in teacher training, Alex Örtegren also emphasises the political nature of technologies and points to the danger of ignoring socio-technological aspects, which is why DCE must also consistently address infrastructure, data availability and governance (Örtegren, 2024).

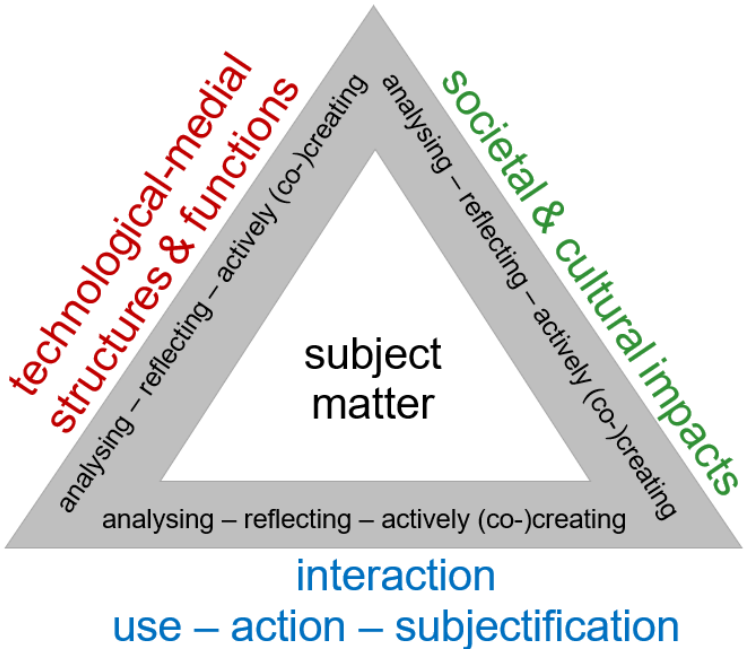
As digital citizens, we are confronted with biometric technologies and electronic ID cards, but we also have claims to digital rights such as data protection in response to extractivism. This results in a new, not only physical, but also digital or algorithmic vulnerability of the digital citizen, which manifests itself, for example, in access restrictions (Dumbrava, 2017). Örtegren therefore points out that digital citizenship education must conceptually consider openness to development, plasticity and temporality to respond to these technological dynamics (Örtegren, 2024, pp. 4279f.).

The Frankfurt Triangle and its relevance for digital citizenship

To develop educational approaches to the phenomena, artifacts, systems, and situations of the digital networked world, we need to consider different interdisciplinary views. The Frankfurt

Triangle (Brinda et al., 2020) provides a framework that helps to create a holistic understanding of the world under the aegis of the digital, with the insights from media education, computer science and media studies. It provides three key perspectives: technological-medial, socio-cultural, and interactional. All perspectives are related to analysing, reflecting and actively (co-)creating a particular subject matter. This can be an artefact or a phenomenon of the world shaped by digitalisation. The point is that a full picture of the complexities of a digital world requires all three perspectives. If you take only one perspective, you must realise that something is missing. If we rely on only one perspective, we might gain a simpler, more manageable view, but we also risk overlooking key dimensions or drawing misleading conclusions. Complexity may be more demanding, but it's the only way to do justice to the layered and entangled nature of digital media in today's world.

Fig. 3:



The Frankfurt Triangle (Brinda et al., 2020 p. 159; translation Petra Missomelius)

To grasp the complexity of digital media phenomena and digital change as a whole, it is crucial to examine them from multiple perspectives. A single-perspective approach may offer analytical clarity, but it often obscures essential interconnections and leads to reductive or misleading conclusions. Digital infrastructures should serve as an example to illustrate this: On a subjective level, it is useful and necessary to have appropriate technical infrastructures, and it is valuable to be aware of their existence to make consumption decisions.

Analysing them solely through a technological lens may highlight efficiency and innovation but neglects the societal and cultural impacts of platform governance or the ecological costs of data centres and resource extraction. Only by integrating diverse perspectives can we begin to understand the full spectrum of consequences and responsibilities entailed in the digital transformation.

In the following, I will use digital capitalism as an example and look at it from different perspectives of the Frankfurt Triangle.

The *technological and media perspective* focuses the structures, principles, and underlying biases embedded in media systems. This perspective emphasises the operational competencies, technical skills, and tool-centred training rather than critical engagement with their societal implications. Moving beyond the predefined and tool-oriented technological ecosystems of digital capitalism allows for an understanding of the commodification of user behaviour, opaque mechanisms limiting user agency and transparency. Opening this perspective to digital citizenship means a deeper understanding of digital infrastructures, algorithms, and power dynamics.

The perspective on *societal and cultural impacts* focuses on power dynamics and economic interests. It addresses issues of equity, access, and representation in media spaces. This perspective shows that digital capitalism perpetuates inequalities through unequal access to technology and opportunities for participation. It is essential for looking behind the scenes of the technological ecosystem. Platforms serve as cultural spaces shaped by corporate interests, influencing norms, values and behaviours. On the one hand, educational practices can reproduce capitalist ideals by aligning digital literacy with employability. This is the most prevalent practice to date, as it is less complex, but it has the potential to facilitate the establishment of a cybernetic socio-technical system.

Conversely, critical approaches to the contemporary role of the digital can engender collective agency for societal transformation by promoting civic engagement, facilitating critical activism and cultivating innovative forms of participation that may also challenge the concept of nation-state citizenship. In this context, technological dystopias can function as a catalyst for expanded understanding, thereby facilitating the exploration of the ambiguities and ambivalences inherent in digital transformation.

However, further work is required to ensure the availability of didactic approaches and educational materials.

The *interactional* perspective helps to explore how identity and subjectivity are affected by interactions with digital systems. It focuses on the interaction between humans and digital systems. In digital capitalism, agency is constrained by the affordances of digital platforms, where users adapt to pre-designed interactions and are reduced to consuming services and producing data. In this perspective, interactions with digital systems should be named, described and made reflectable, so that they are no longer taken for granted and natural, but can be shaped in the next step. One approach that could be adopted in this direction is a critical interface analysis that considers the aesthetic, haptic and sensory demands of diverse groups and opens up the possibility of digital alternatives. Another approach involves exploring non-profit and community-promoting applications, moving beyond market-driven configurations.

To counter the digital capitalism that subliminally but strongly influences digital literacy and digital citizenship, active critical approaches are important. Citizens must be understood as more than mere users and developers within the narrow technological framework. The structures themselves

need to be challenged. These approaches are at odds with the conventional understanding of digital education as technological proficiency, employability and industry readiness. Without critical approaches, users remain passive consumers who adapt to these systems without questioning their implications. Active, critical thinking fosters agency, enabling individuals to challenge biases, resist exploitative practices, and reshape technologies for equitable purposes. A critical lens reveals how mechanisms like algorithms, data harvesting, and surveillance perpetuate inequalities, consolidate corporate power, and shape behaviours. Understanding these dynamics is essential for reforming them. The pace of digital transformation requires users to navigate rapid technological changes. It may sound simpler than it is. But it is a necessity that future-oriented competences enable learners to anticipate and shape future developments, rather than just react to them. Transformative approaches can promote sustainability, resist cultural homogenisation, support democratic principles, and create space for collective alternatives like cooperative platforms, open-source technologies, and developments aligned with the public good. Using the Frankfurt Triangle as a framework for digital citizenship enables holistic participation in digitally mediated societies.

The outlook

At this point, two alternative approaches to digital citizenship should be mentioned.

In view of current developments, Wessel Reijers, Liav Orgad and Primavera De Filippi (2023) propose the term *cybernetic citizenship*. Cybernetisation is based on the normativity of the digital, culminating in the Chinese social credit system. Citizens live in a conglomerate of loose cybernetic socio-technological systems that cannot be assigned to a particular political ideology. Cybernetic citizenship can be applied in both neoliberal and communist states. The central point is that datafication is given a quasi-metaphysical status in the respective society.

In a paper on the post-Corona and post-Brexit changes in the understanding of digital citizenship in Northern Ireland, Igor Calzada and John Bustard (2023) suggest that an *algorithmic citizenship* should be considered that transcends national identity. Using Northern Ireland as an example, Calzada and Bustard present a model of dual citizenship and cross-connections between supranational areas of the EU, regions and countries. This in turn offers digital horizons of opportunity for the networking of interest groups, can combine critical awareness with digital activism and thus enable experimental forms of democratic participation, a liquefaction of nation-state citizenship through dialogue and conceptual participation (ibid., p. 286).

In retrospect, the question arises as to whether the operability and efficiency of educational administration should take precedence over tolerance of ambiguity and ambivalence in dealing with digital transformation. This is a pertinent consideration in the 21st century, particularly with respect to civil society negotiation and participation processes. These times are characterised by excessive demands, a longing for comfort and a tendency towards polarising simplifications. This is precisely why we need to be able to look at issues and problems from multiple perspectives. Additionally, tolerance for ambiguity, contradictions, and indecisiveness is needed. It remains to

be seen whether the tolerance for ambiguity mentioned in the DCE handbook (Council of Europe, 2022, p. 12) will find its way into educational institutions.

Digital citizenship cannot be limited to the digitalisation of bureaucracy. A rethinking of forms of participation is also advisable in this context. Dealing with technical dystopias, non-profit applications and the social, community-promoting, aesthetic, haptic, creative and sensory demands of diverse target groups should be on the agenda. The understanding of technology must be broadened to address these aspects.

There is a risk of succumbing to techno-solutionism (Morozov, 2014) when social change is equated with technology and digitalisation. Technical myths, utopias, and dystopias must therefore be analysed and named as such, instead of constantly celebrating innovations as 'revolutions', 'dam breaks' and so on. Otherwise, these educational policy programmes risk becoming mere political control instruments, losing acceptance, and overlooking valuable alternatives in digital change. Social negotiation processes, a focus on the common good, and empowering neglected and marginalised interests remain politically neglected voids. These gaps will persist unless ambiguities and ambivalences of digital change are given space.

Media and technology-related research must continue to challenge techno politics, e.g., through transdisciplinary research on digital rights, privacy, and cross-border civil society data cooperation. Topics like algorithmic transparency, data sovereignty, data donation, and broad social participation in decision-making processes regarding technological futures must also be addressed. We can only speak of a broad interdisciplinary field that is opening, and hope that political digitalisation strategies engage with these scientific positions and changing regimes.

To address these challenges, it is crucial to move beyond technocratic and market-driven approaches to digital education. The Frankfurt Triangle provides a valuable framework for achieving a broader, more balanced view on digital literacy and citizenship. By integrating critical reflection, empowerment, and participatory design into educational concepts, this model encourages a deeper engagement with the ethical, social, and cultural dimensions of digitality. Such an approach not only counters the narrow focus of digital capitalism but also fosters the competencies needed to actively shape a fairer and more inclusive digital society.

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