

**SESSION M16 - Digital Transformation and Democratic Regeneration:
The essential Role Of Critical Education In The Age Of Algorithmic Capitalism**

**Educating in the Platform Space:
School, Digital Capitalism and Critical Reconstruction of the Public Sphere**

Giacinto Matarazzo, Aurea Studium, Rome
Cosimo Dolente, Fondazione Ugo Bordoni, Rome



Objectives

- This paper examines how digital platforms shape the conditions of democratic life and schools by organising access to information, capturing attention and mediating social interaction.
- It focuses, very briefly, on four interconnected issues:
 - The structural power of Big Tech
 - Platform business models and the capture of time
 - Platformisation and changing media diets
 - The role of schools in rebuilding critical and democratic public spaces

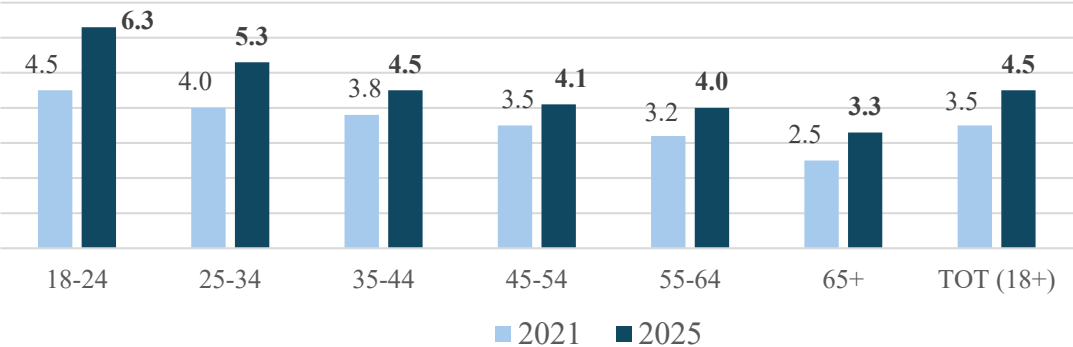
The structural power of Big Tech

Source: adapted from van Dijck et al. (2018).

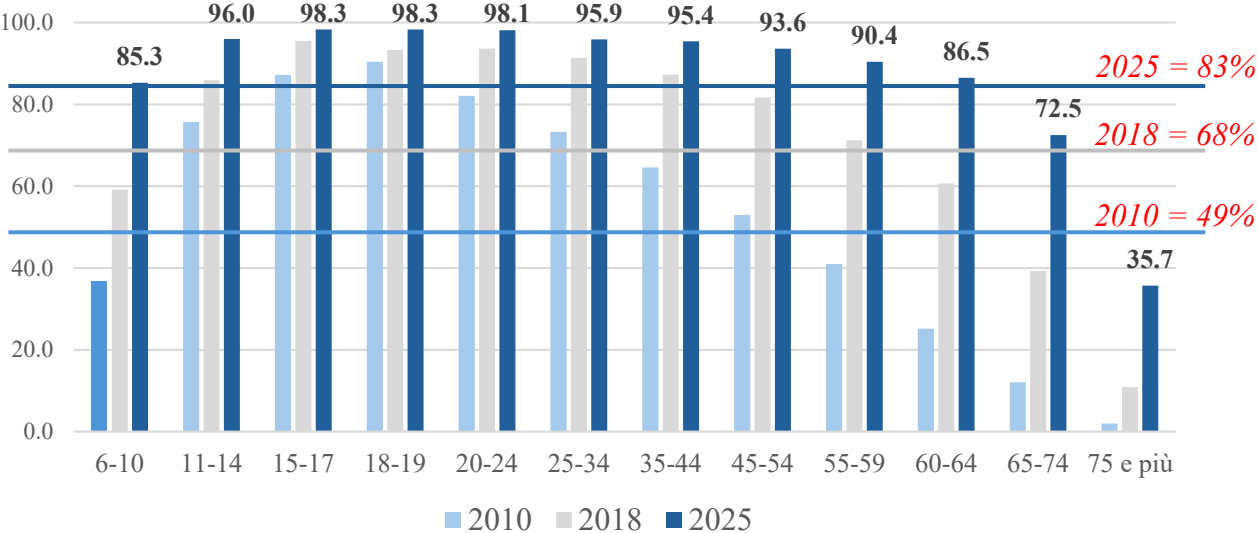
Functional levels	Sub-levels	Key Actors (examples)
Raw materials and physical infrastructure	Raw materials: energy resources such as oil; precious resources such as gold and silver; industrial materials such as rare earth elements, cobalt and lithium	Extractive industries; states and resource-producing countries
	Physical infrastructure: terrestrial, submarine and satellite backbone networks; local and regional networks, including LANs, MANs and WANs	Telco companies, satellite network (Starlink/SpaceX); OTT providers , including Google, Meta Amazon
Invisible infrastructure	Networking and content delivery networks: CDNs, software-defined networks and data-centre networking	Akamai, Cloudflare, Amazon CloudFront, Fastly
	Cloud-computing infrastructure: hyperscale, data-centre and edge-data-centre infrastructures	Amazon-AWS, Microsoft-Azure, Google Cloud , IBM Cloud, ...
	Hardware acceleration: graphics processing units for data centres, AI chips and edge AI	NVIDIA , AMD, Intel
	Artificial intelligence and big data: large language models, machine-learning pipelines and data analytics	OpenAI, Google, Microsoft, Meta, Palantir
Visible infrastructure (Platforms)	Search and information retrieval	Alphabet, OpenAI/ChatGPT, Amazon
	Audio and video-content provision and streaming	Alphabet, Apple, TikTok, Netflix, Amazon, Spotify
	Social communications and networking	Meta/Facebook, TikTok, Instagram
	Online purchasing and marketplaces	Amazon, Alibaba, eBay, Shopify, Airbnb, Booking
Access and security	Network-access devices: PCs, laptops, smartphones and mechanical, electrical and thermal sensors	Samsung, Apple, HP, Dell, Asus, Honeywell,, Siemens and Microsoft
	Digital security: cloud security, endpoint protection and identity management	Palo Alto Networks, CrowdStrike, Fortinet and Cisco Security
Political dimension	Economic sustainability and externalities: positive effects, such as network effects and innovation; negative effects, such as environmental impact and the erosion of privacy	Big Tech firms, UN and EU, national governments and Telco regulators

- Digital platforms lie at the **heart of the ICT ecosystem**. They are not simply communication services: they are economic, material and cultural infrastructures that organise access to information, extract data, direct attention and shape the conditions of democratic participation.
- The ICT sector generates more than **USD 6.1 trillion** in value added, roughly **6% of global GDP**.
- The digital economy accounts for more than **15% of global GDP**.
- In 2026, the seven largest US technology companies — NVIDIA, Apple, Alphabet, Microsoft, Amazon, Meta and Tesla — reached a combined market capitalisation of approximately **USD 23.6 trillion**, close to **one fifth of global GDP**.
- *Market capitalisation is not a measure of annual output; it illustrates the extraordinary concentration of financial resources and expected future profits.*

The Platform business model in action: time, engagement and data



Average daily time (hours) spent online by UK adults by age group. 2021 and 2025. Source: based on Ofcom data.



Italian people aged 6+ (percentage) who used the Internet, by age group. Source: based on Istat data.

- **Time as a Platform Resource.** In short: the core of the business model – at least for data-driven platforms - is to "keep users online as long as possible" with the goal of profiling them and sending them personalized advertising messages thus increasing advertising profits.
- Data on usage and time spent online seem to confirm this.
- In the United Kingdom, average daily time spent online rose from **3.5 hours in 2021** to **4.5 hours in 2025** among adults aged 18+.The increase appears across all age groups, including adults aged 65+.
- In Italy, Internet use among people aged 6 and over increased from **49% in 2010** to **83% in 2025**. By 2026, everyone aged 11 to 65 will be online, a revolution in just 15 years.

Digital platforms and media diets in Italy

	Total	14-29	30-44	45-64	65+
TV news	47,7	22,5	38,9	54,2	68,2
Facebook	36,4	25,6	49,8	36,7	32,2
Internet search engine	23,3	24,1	25,4	23,1	21,1
24-hour news TV	18,9	9,5	17,3	18,6	29,7
News websites	17,2	14,3	22,9	16,9	14,5
Instagram	16,7	31,2	20,0	13,1	6,5
YouTube	15,5	22,8	14,8	14,1	12,1
TikTok	14,4	29,7	13,6	10,6	7,8
Radio news	13,9	5,5	12,3	15,8	20,0
Online newspapers	11,3	8,9	10,8	11,9	12,9
News aggregators	8,1	6,5	7,3	9,9	7,1
Smartphone apps	7,6	7,3	9,9	6,4	7,6
Telegram	6,0	6,6	6,9	6,7	3,5
Print newspaper	5,4	3,4	3,3	5,1	10,0

Main information sources used during the previous 7 days, by age group. Percentages, year 2024. Source: based on Censis data 2025.

- Media diets are the relatively stable combinations of media sources, platforms and informational content through which people encounter news, public issues and social reality.
- In platformised environments, media diets are shaped not only by users' choices, but also by algorithmic recommendation, personalisation and commercial incentives.
- Key finding:** Italian, regardless of age, access news and public issues through a hybrid repertoire in which social platforms, search engines and audiovisual services have a central role.



Italy: platform exposure is the norm for 11-19

85%

Italian 11–19-year-olds with at least one social-network profile (2023)

97%

Share among 17–19-year-olds

49%

11–19-year-olds online or on the phone with friends continuously or several times a day

For school policy, this means that **“non-use” is not a realistic default**: students arrive at school with platform-mediated habits and social networks.

Source: Istat (2024). Indagine bambini e ragazzi — Anno 2023. <https://www.istat.it/it/files/2024/05/Bambini-e-ragazzi-2023.pdf>

What can schools do?

- Schools and other intermediary institutions need to develop **critical digital education**: the capacity to understand how platforms organise data, attention, visibility and participation - and to question their social and democratic consequences. In this light, in the table some topics are reported reported:

<i><u>Topics</u></i>	<i><u>Core Concept</u></i>	<i><u>Action for Schools</u></i>
1. <i><u>Infrastructures & Models</u></i>	<u>Move from teaching how to use platforms to understanding how platforms use us in an attention-based economy.</u>	Analyse <u>hidden mechanisms</u> (terms of service, data <u>extraction</u> , user <u>interface design</u>).
2. <i><u>Media, Data & AI Literacy</u></i>	Shift <u>digital literacy</u> from purely technical skills to a systemic understanding of platforms' impact on democracy .	<u>Deconstruct AI and machine learning models behind platforms</u> (datasets, training, <u>visibility</u> , and <u>algorithmic bias</u>).
3. <i><u>Source Evaluation</u></i>	Equip students to evaluate sources in an <u>environment where platforms reward outrage and emotional engagement</u> .	Teach " lateral reading " (checking a <u>platform credibility on independent sources</u>) and build <u>awareness on their own digital traces</u> .
4. <i><u>Bias & Inequalities</u></i>	Understand that platforms are not neutral ; they reflect and <u>amplify systemic biases and inequalities</u> .	Explore case studies on algorithmic discrimination , <u>gendered harassment</u> , and <u>advocate for safe technology</u> .
5. <i><u>Democratic Inquiry</u></i>	Counter platform-driven polarization and filter <u>bubbles by using the classroom as an antidote to fragmentation</u> .	<u>Transform disagreement into structured inquiry</u> , <u>active listening</u> , and <u>evidence-based democratic dialogue</u> .

Platforms, media diets, gender and democratic challenges: a research agenda

- Digital platforms help define the informational and relational environments within which social actors operate. Their effects should not be understood in deterministic terms; they emerge from the interaction among platform design, business models, social inequalities, political contexts and users' practices.
- Aurea Studium Association is exploring and developing some research activities on these topics and in particular:
 - The economic and financial concentration of platform power
 - Time spent online and the distribution of platform use across age groups
 - The transformation of media diets and information repertoires
 - Gendered inequalities and algorithmic bias
 - The influence of platforms on public agendas