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Invited Papers

The prison beyond the prison: Learning Warfare and educational control over civil society

Il carcere oltre il carcere: Learning Warfare e controllo educativo della società civile

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Abstract

The study analyses the ways in which adult learning initiatives are part of new models of warfare and how these develop through social media. The analysis of the new doctrines of hybrid warfare and cognitive warfare identifies learning warfare as the strategic component that aims to direct adult learning processes through various aggressive, informative and persuasive devices. The analysis of learning warfare considers the educational strategies adopted to utilise the digital world and particularly social media. Attention is directed towards the possibilities of implementing protection and defence strategies through a conscious management of the learning processes that develop in the relationship between consumer audiences and digital educational objects. Consumers can fully exercise their role as prosumers if appropriate educational strategies are put in place. The study attempts to identify various possibilities for action starting from the educational practices already in place, in particular, in the world of adult learning. It concludes with a focus on civic engagement initiatives and digital media consumer communities.

Keywords: Prisoning; Learning warfare; Critical learning; Social media; Civic engagement.

Sintesi

Lo studio analizza le modalità con cui le iniziative di apprendimento degli adulti si inseriscono nei nuovi modelli di guerra e come questi si sviluppano attraverso i social media. L'analisi delle nuove dottrine della guerra ibrida e della guerra cognitiva identifica la guerra educativa come la componente strategica che mira a orientare i processi di apprendimento degli adulti attraverso diversi dispositivi aggressivi, informativi e persuasivi. L'analisi della guerra educativa considera le strategie di apprendimento adottate per utilizzare il mondo digitale e in particolare i social media. L'attenzione è rivolta alle possibilità di implementare strategie di protezione e difesa attraverso una gestione consapevole dei processi di apprendimento che si sviluppano nel rapporto tra pubblico di consumatori e oggetti educativi digitali. Tuttavia, i consumatori possono esercitare appieno il loro ruolo di *prosumer* se vengono messe in atto strategie educative appropriate. Lo studio cerca di identificare diverse possibilità di azione a partire dalle pratiche educative già in atto, in particolare, nel mondo dell'apprendimento degli adulti. Si conclude con un focus sulle iniziative di impegno civico e sulle comunità di consumatori di media digitali.

Parole chiave: carcerazione; guerra educativa; pensiero critico; reti sociali; protezione dei consumatori.

1. Learning warfare and educational control over society

The prison has served as a prefiguration of how informal educational processes are managed to dominate civil society. There is a profound relationship between the management of carceral punishment inflicted on civilians and the learning warfare strategies promoted by states through an army of learning professionals. These professionals operate using both new and old communication tools, within and outside various public and private ideological apparatuses.

The prison, historically understood as a mechanism for correction and segregation, has transformed into a cutting-edge laboratory for developing biometric monitoring technologies, predictive algorithms, and conditioning protocols. These form the backbone of modern mass education operations promoted by states in league with technocratic oligarchies, directed in every direction: toward their own citizens and the citizens of foreign states.

The carceral institution has always represented the ultimate expression of the state's bio-political power (Foucault, 1994) – the capacity to manage the lives and bodies of subjects for the purposes of social order. However, the current paradigm of learning warfare has required a qualitative leap: transferring the informal learning devices practiced in prison onto civil society to map and alter the decisional architecture of broad population segments.

The roots of this transfer of models date back to experiments such as the Stanford Prison Experiment (SPE), conducted in 1971 and funded by the U.S. Office of Naval Research, which aimed to understand the dynamics of conflict between guards and prisoners in military contexts (Haney, Banks, & Zimbardo, 1973). The experiment demonstrated how situational variables and symbols of power can induce individuals to commit antisocial acts and suffer emotional collapses. The value of such research has been absorbed into military doctrines that today view the brain as the primary battlefield of the 21st century.

Learning warfare models aim to expand the processes of forced adaptation to informal codes – practiced through imprisonment, or *prisonization* (Clemmer, 1968) – to the entire population. What is of interest in the carceral environment is its ability to degrade executive functions, regulate emotions, and exert cognitive control over individuals. The modern prison can be seen as a laboratory for constructing a society based on totalitarian control.

It is in this context that studies led to the formulation and use of *pre-crime* algorithms and predictive policing – such as those conducted by Palantir for the U.S. Department of Defense and Homeland Security, and later for Immigration and Customs Enforcement (ICE) (Ferri, 2024; Moro, 2026). Through these, the state claims to preemptively identify and neutralize individuals who may pose a threat before that threat translates into physical action.

Furthermore, in connection with the carceral context, models for controlling and managing behaviours and emotions are being developed through direct neural interventions. Projects like *Cognify* (Ait Sidhoum, 2024) propose replacing long sentences with the implantation of artificial memories designed to induce remorse or correct antisocial behavior. With these types of projects, the state no longer limits itself to punishing the individual but re-educates them by rewriting their identity and personal history. The prison ceases to be a physical building and becomes an imposed neural architecture – an *educational prison* where the subject is a captive of their own manipulated perceptions.

This capacity for human *bio-hacking* is the ultimate goal of learning warfare. Once a state can alter the memory processes and decisional heuristics of a population, its dominance

becomes total and irreversible.

The relationship between the management of civilian carceral punishment and state-promoted learning warfare outlines a new form of digital and neural authoritarianism. The prison is no longer an exception to the rule of civil liberty, but the point of maximum concentration for a power that is diffusing throughout society. The technologies tested on inmates – from biometric monitoring to predictive policing, from cognitive restructuring to the most invasive forms of informal education – constitute the arsenal with which modern states fight for the mastery of human education. This is aimed at producing a population that is not only obedient but cognitively incapable of conceiving dissent.

The prison is not made of concrete and bars, but of technologies that act upon our learning processes, aiming to transform the entire social body into a vast, permanently monitored, and modulated apparatus of learning detention. Learning warfare – both internal and external to the state – is its operational mode.

2. Methodological remarks

This study aims to analyse the ways in which adult learning initiatives are part of new models of warfare and, in particular, how these develop through social media. The question concerns how consumer audiences can actively defend themselves against different forms of cognitive warfare and, among these, learning warfare. The aim is to identify systemic and educational actions through which to develop the critical digital learning skills of young people and adults.

The study takes the theories of hybrid warfare as a reference with the aim of identifying degrading educational strategies. The attempt to formulate answers in the field of adult learning is based on two theoretical approaches.

The first goes back to Deweyan critical thinking theories. The attempt is to update these theories in relation to the specificity of the position of consumers of digital education contents and the educational dynamics in which they are immersed. On the basis of these assumptions, the search for appropriate educational actions is guided by the theories of self-directed learning of an emancipatory (and not simply transformative) nature from the tradition of critical andragogy.

For the analysis of the role that the consumer public can play with respect to the products of the digital economy, the theoretical framework of reference is that relating to the theories of consumption (i.e. the interdependent relationship between production-distribution-exchange and consumption). These theories have been taken up to their most recent formulations in terms of prosumption.

Methodologically, our work is based on the selection and analysis of a wide range of studies and empirical research relating to cognitive warfare, critical thinking, educational actions developed in the field of digital media and civic engagement in customer communities.

The method followed can be associated with Integrative literature review. An integrative review has a different purpose, with the aim to assess, critique, and synthesize the literature on a research topic in a way that enables new theoretical frameworks and perspectives to emerge. The idea of learning warfare is relatively unexplored. While some aspects of it are the subject of a large amount of doctrinal studies and empirical research conducted from different disciplinary perspectives. Due to our assessment of having to work on a relatively

newly emerging topic (at least as far as educational research is concerned), we have adopted the method of integrative literature review. As Snyders suggests, when adopting this method "the purpose is rather to create initial or preliminary conceptualisations and theoretical models, rather than review old models. This type of review often requires a more creative collection of data, as the purpose is usually not to cover all articles ever published on the topic but rather to combine perspectives and insights from different fields or research traditions" (Snyder, 2019, p. 335).

3. Cognitive war and *mind superiority*

Russia's recent invasion of Ukraine has directly confronted the world of adult learning with the meaning and consequences – also on an educational level – of the new military doctrines governing war. Today, the interrelationships between adult learning and war appear more directly and no longer limited to propaganda, initial or continuing military education.

The nature of war has not changed. It remains a form of political violence or intervention between political communities. Its character has changed. War is no longer merely an action aimed at gaining superiority and control of sky, land, sea and information (Roncolato, 2022). It has also taken into account the human factor with a tendentially holistic approach: "the human mind becomes the battlefield. The aim is to change not only what people think, but how they think and act" (Johns Hopkins University & Imperial College London, 2021, p. 2).

This is a change in warfare doctrine. In the past, the idea prevailed that the outcome of a war was determined by the next technological development. Even as technology offers stunning new capabilities (and threats), the human element remains essential (Roncolato, 2022).

As a function of these new doctrines, research institutes have for decades started to develop approaches of unconventional or hybrid warfare, unrestricted warfare and finally the so-called Gerazimov doctrine that adopts the holistic strategy of New Generation Warfare (Clark, 2020; Defence General Staff, 2023).

This doctrine designs a coercion strategy with a holistic intent that accompanies the use of military force with a series of complementary interventions: from cyber attacks to campaigns of all kinds. These actions are aimed at directing the processes of shaping public opinion and acting on their vulnerabilities.

In fact, New Generation Warfare is part of a strategy already initiated in China by the People's Liberation Army called *cognitive domain operations* and known as *cognitive warfare*.

This type of warfare "seeks to use information to influence an adversary's cognitive functions, spanning from peacetime public opinion to wartime decision-making. What began as fundamentally a wartime concept focused on impacting the adversary's military decision-making process now extends to peacetime operations against entire societies-enabled by the wide reach of modern information technology, and especially social media" (Beauchamp-Mustafaga, 2019, p. 25).

The goal of cognitive warfare is *mind superiority* (Zeng & Shi, 2014), to shape or even control the enemy's cognitive thinking and decision-making.

4. The cognitive space as war theatre: areas

Cognitive warfare integrates cyber, information, psychological, and social engineering capabilities. It takes advantage of the internet and social media to target specific groups, and large numbers of citizens selectively and serially in a society to generate effects in the cognitive dimension and influence human behaviour (Beauchamp-Mustafaga, 2019). In the Chinese strategy, *cognitive space* is defined as "the area in which feelings, perception, understanding, beliefs, and values exist, and is the field of decision-making through reasoning. It includes many 'intangible factors' such as leadership, morale, cohesion; training level and experience; situational awareness and public opinion" (Zhu & Zeng, 2017 – cited in Beauchamp-Mustafaga, 2019, p. 1). Zhu and Zeng (ivi, p. 2) identified four tactics to win *mind superiority* in the cognitive space:

1. *Perception manipulation* through propaganda narratives;
2. *Cutting off historical memory* so that targets will be open to new values;
3. *Changing the paradigm of thinking* by targeting elites to change their ideology;
4. *Deconstructing symbols* to challenge national identity.

It must be said that this strategy is common to all large military organisations. North Atlantic Treaty Organization (NATO), for its part, includes in its doctrinal approaches to crisis management the behaviour-centric approach aimed at influencing the audience, i.e. actors, stakeholders and population (Johns Hopkins University & Imperial College London, 2021).

5. Learning warfare campaigns

The new strategy is played out directly on the terrain of adult learning. In the past, adult learning campaigns were launched by the victorious countries in the countries of the vanquished and only after the end of the war (we refer to the initiatives launched in Germany and Japan after the end of World War II).

The way cognitive warfare is conceived today is different in that, as we have seen, it responds to two main objectives: to affect someone's ability to think and function and to drive person's underlying emotions, knowledge, willpower and beliefs.

The first form of warfare aims to degrade the cognitive capabilities of the adversary. It aims to inhibit the perceptive and logical capabilities of the individuals on whom the attack is focused. To this end, it uses and develops different types of technologies (from electromagnetic to chemical).

The second form of warfare is characterised by the use of content and narratives to build learning processes. This type of warfare acts through information campaigns and persuasion campaigns. The information contents – true or false – constitute the narrative part of the initiatives. They have a single core function: to push individuals to generate learning outcomes that reproduce as faithfully as possible the sense of what was conveyed to them and make them acquire new understanding, knowledge, behaviours, values, attitudes.

The campaigns implemented make use of complex devices, are guided by short, medium and long-term plans, operate according to the dissemination of predefined, albeit flexible, content, and employ staff specialised in the management of learning processes. In other words, with the launch of this type of campaign, a fluid and parallel learning system is

introduced in a country that carries out its own hidden curriculum.

6. Social media as a permeable terrain for campaign actions

The widespread use of social media and smart device technologies is the current favourite terrain of learning warfare campaigns. This is certainly due to the fact that through social media platforms there is the possibility of direct access to a large amount of content and the opportunity to interact with an increasing number of people. In addition, the technologies adopted have developed the ability of digital platforms to personalise (through profiling algorithms) the content offer by taking into account users' preferences and attitudes. This favours the possibility of targeted campaigns.

The choice of social media as a terrain of aggression does not only depend on the ease of incursion due to their connotations of freedom of access and expression.

The modes of consumption imposed by social media have pushed audiences to access, interact, have seemingly personalised paths and participate in various ways in the production of content. All this, however, is conditional on the public's acceptance of being guided by social media stakeholders. This has resulted in the weakening of the role of the public and its subalternity to such stakeholders.

The subjugation of the user public to the interests of production is the condition of entry. As soon as they enter, the media applications track what we like and believe; our smartphones track where we go and who we spend time with; our social networks track who we associate with and whom we exclude. And our search and e-commerce platforms use these tracking data to turn our preferences and beliefs into action - by offering stimuli to encourage us to buy things we might not otherwise have purchased (Johns Hopkins University & Imperial College London, 2021).

The information the public gives to media applications is used by others, translated into consumption needs, in order to induce behaviour that does not necessarily conform to their own growth interests and initial wishes.

The forced acceptance of these conditions has an educational impact in that the information ceded is used by stakeholders to generate processes that steer the consumer public towards becoming accustomed to receiving constant confirmatory input of their own biases.

News feeds and search engines that serve results which align with our preferences increase confirmation bias, whereby we interpret new information to confirm our preconceived beliefs. Social messaging apps rapidly update users with new information, inducing recency bias, whereby we overweight the importance of recent events over those of the past. Social networking sites induce social proofing, wherein we mimic and affirm others' actions and beliefs to fit in with our social groups, which become echo chambers of conformism and groupthink (Johns Hopkins University & Imperial College London, 2021).

These dynamics create an audience willing to follow the construction of meanings decided by others as they are based on their own biases inferred from surfing the net.

It is therefore not the ease of access and the freedom of expression that can be exercised on social networks that make them privileged terrain for learning warfare campaigns. It is rather the presence of a public that is passivised and subjugated to the network's pedagogical powers that increases the vulnerability of a population.

7. How to enhance the users' awareness

Successful defence against learning warfare depends on consumers being able to identify and manage the learning processes they are exposed to in the digital world.

Recent statistics show that the percentage of unintentional fake news spreaders (people who share fake news without the intention to mislead) over social media is five times higher than intentional spreaders. As a result, we can deduce the lack of human awareness about the ascent of fake news (Aïmeur, Amri, & Brassard, 2023).

But the ability to consciously manage their activities as consumers of digital content depends on the quality of the set of learning opportunities, digital and non-digital, formal and informal in which they are immersed.

Some research narrows this down to the fact that it is not only the level of schooling achieved that counts, but what counts is knowledge.

"Higher education in combination with domain knowledge increases the ability to detect fake news. Without domain knowledge, education does not always contribute to performance in detecting fake news" (Zrnec, Poženel, & Lavbič, 2022, p. 16).

Since it is not possible to make everyone an expert in everything, the viable solution seems to us to be to increase awareness of the learning processes to which everyone is exposed.

This strategy involves the adoption of concrete systemic and educational actions. The objectives of a *first line of active advocacy* focused on the self-determination of citizens' learning processes could be identified in the following:

- Knowing the extent of people exposed to the risk of learning vulnerability;
- Identifying and disseminating information on hostile learning warfare campaigns;
- Training critical digital learning skills;
- Fostering civic engagement in customer communities.

7.1. Measuring learning vulnerability

Awareness of the extent of learning vulnerability risks is the basis for the growth of conscious consumer behaviour and their ability to deal with situations that present learning vulnerability risks.

In order to measure the risk of vulnerability, it is necessary to define a number of possible indicators relating to the key competences that an adult must possess to exercise control and direction over the educational processes that take place when using a digital educational object.

Possessing the ability to exercise *critical thinking*, understood as *careful goal-directed thinking*, as well as *reflective thinking* are perhaps ill-suited to highlighting the skills that the user of digital education content is called upon to bring to bear.

According to Dewey's definition reflective thinking is the ability to practice "active, persistent and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it, and the further conclusions to which it tends" (Dewey, 1910, p. 6; Dewey, 1933, p. 9).

The special feature of this type of informal educational situation is that the audience is not in a process of gaining an in-depth and critical understanding of a subject-specific topic. The learning outcomes of informal learning are not linked to a syllabus nor to the goal of

increasing personal knowledge with respect to a specific field. The educational objective is not the acquisition of the scientific fundamentals of the subject matter. The actual educational objective is simpler: to experience the meanings.

As we have seen, a campaign tending to deny the national identity of a country (e.g. Ukraina) does not have the educational goal of teaching historical truth, but of "cutting off historical memory" so that targets will be open to new values. This might be the meaning to be discovered when confronted with such content.

More transparent and direct are the examples of campaigns tending "to propagate [...] content designed to dehumanise or incite hatred against Ukrainians, women, or LGBTQ communities. These [...] campaigns also attempt to interfere with the ability of citizens in the EU to speak freely and receive verifiable information about the war" (European Commission, 2023, p. 11).

Adults exposed to this type of campaign cannot aspire to construct an alternative truth through an analysis of the grounds that support the arguments encountered in the relationship with digital educational objects (be it on the effectiveness of vaccines or the effect of sanctions on the Russian economy). Not everyone may be able to assess whether medical or economic information is well-founded or not.

The competence that is required of the audience is metacognitive. It manifests itself in the ability of the audience of users of the various Information and Communication Technologies (ICT) devices to guide their own sense-making processes and experience the meanings present in each event by understanding the meaning and direction of the learning processes in which each is involved. On the basis of this awareness, each individual must also be able to assess whether this direction corresponds to his or her own ethics and expectations regarding the future. In this sense, it would perhaps be more appropriate to speak of critical learning.

Empirical research in this field is at an advanced level. Measuring critical thinking seems to be easier than other skills.

It is easier to measure critical thinking skills or abilities than to measure dispositions (Hitchcock, 2022b).

The research was mainly developed in formal education contexts and produced interesting results also due to the possibility of conducting Meta-analyses based on the examination of data from a number of independent studies of the same subject, in order to determine overall trends.

In the field of adult education, the results of some of the surveys already regularly conducted by international bodies such as the Programme for the International Assessment of Adult Competencies (PIAAC) of the Organisation for Economic Co-operation and Development (OECD) could already be used for this purpose.

7.2. Identification of campaigns

Rapid identification of current campaigns would allow them to be addressed with awareness and help understand the specific learning goals of their promoters. This is possible thanks to the use of machine learning and pattern recognition algorithms helping quickly to identify and classify emerging campaigns. It is possible to know all their specific characteristics: from the locations, both geographic and virtual, in which social media posts, messages, and news articles originate to the topics under discussion; shares,

comments, interactions between social media accounts and their timing.

A study carried out on content posted by more than 2200 accounts working on synergy on Facebook, Instagram, Twitter, YouTube, TikTok, and Telegram and focused on Russian state-sponsored campaigns provides a first picture of how operations are organised and conducted and the type of learning objectives chosen (European Commission, 2023):

- Actors. The accounts belong to two categories of actors. The first from actors directly and explicitly connected to the Russian government (to which belong over 1200 accounts operating in EU languages). The second to actors that self-identify as ideologically aligned with the Kremlin (accounts of media or news websites and Influencers, to which over 1100 accounts belong);
- Dissemination techniques. To disseminate their content, they adopt amplification tactics through which they disseminate content on and across different online platforms. Amplification always involves some level of inauthentic coordination (executed using automated accounts or through coordinated networks of accounts) and is often aimed at directly manipulating platform algorithms. Amplification may take up passive forms (liking or sharing content) and active forms (mass posting);
- Countering techniques. System actors deploy suppression techniques to combat accounts that diverge from their narratives. Suppression tactics are mostly carried out against individuals and can often take a significant psychological toll – particularly because affected individuals may be threatened and attacked both on – and offline simultaneously. Targets of these tactics are often blocked or restricted by platforms;
- Content. The research identified two types of harmful content that have been identified as problematic across all online platforms: hateful/violent content and deceptive content. The former includes:
    - Content made to glorify war and war crimes, exonerate any war crimes or invalidate any proof of such crimes;
    - Content depicting violence in graphic detail (e.g., murder, rape), inciting violence against specific groups or individuals or promoting violence in general. This includes cyberstalking, public or private online threats, or the distribution of sexual images without consent.

    Seconds include:

    - Content aimed to confuse and deceive audiences about war crimes. This also involves planting false evidence to shift the blame to others;
    - Manipulative, misleading, or outright deceptive content aimed at gaining political advantages, including election disinformation and disinformation about staged referenda;
    - Decontextualised audiovisual content, low-threshold manipulated content.

Monitoring reports provide a great contribution to the knowledge of this fluid and hidden system of informal learning. The monitoring system created by the European Commission within the framework of the Digital Service Act (European Union, 2022) forms the basis for risk assessment and mitigation compliance measures. However, it is also necessary to introduce measures that strengthen the possibilities of direct and immediate identification by the public of the characteristics and intentions of their interlocutors. A dashboard or forms of independent labelling of different accounts could be adopted.

7.3. The development of critical capabilities in educational organisations

The main field of action is the strengthening of the public's critical and conscious capacities.

Critical learning is not an innate ability. It can be the result of educational actions. Educational research of the last century has provided clear indications in this regard. Although it has mainly focused on critical thinking. It is therefore possible to think of anticipation actions, carried out in the formal education system, of reinforcement actions carried out, for example, through workplace learning, and of actions carried out in direct support of users.

With regard to formal education, empirical research has shown that educational interventions can have an impact on critical thinking abilities. Research has also highlighted the conditions that make this possible. Namely, that such learning outcomes can be achieved according to the degree to which the educational action involved dialogue, anchored instruction, and mentoring. Researches found that each of these factors increased the effectiveness of the educational intervention, and that they were effective when combined (Hitchcock, 2022a).

Other research has also highlighted the importance of Team-based Learning. The study conducted by Branson, Boss, and Fowler (2016) had shown statistically significant differences when comparing the posttest results with the pretest results across two groups, which showed that Team Based Learning was more effective than traditional lecture-based learning (Zhang, Tang, Zhao, & Wang, 2023).

The possession of critical skills must be exercised within the digital experience and, moreover, within the context of social relations and aspirations, visions that inspire individual and collective actions.

A series of contributions that have applied the idea of critical thinking on the digital terrain make a specific contribution to the deepening of this dimension to demonstrate how critical digital literacy is essential to the active participation of critically autonomous and well-informed citizens in society. This idea "facilitates civic engagement on the basis of incorporating utopianism/dystopianism" (Polizzi, 2023, p. 1216).

In this regard, Polizzi proposes a framework in which critical digital ability "intersects with the other critical and functional dimensions of digital literacy, [...] from the critical ability to evaluate online content and knowledge about Internet corporations to functional digital skills, knowledge of digital affordances and general dispositions towards the Internet" (ibidem). The achievement of functional digital literacy to become critical digital literacy must combine with other digital skills and, in particular, with utopian/dystopian imaginaries of the Internet and of civic life. This means that learners "might be able, for example, to use social media platforms to raise awareness about the environment or individual economic freedom, while using fact-checking websites to corroborate information" (ivi, p. 1218).

For formal education, we can say that we know what factors can foster the development of learners' critical thinking. Conversely, we also know that the absence of dialogic educational practices has negative consequences. We also know that without critical digital literacy it is difficult to enable users to pursue civic opportunities online.

In the workplace, critical thinking is generally regarded as a skill that helps employees solve problems and build strategies increasing their performance.

Critical thinkers are regarded as those who are able to make the best decisions about how to complete tasks, communicate information, relate with coworkers, and develop strategy. Critical thinking is considered as the most important skill set in what it furnishes for the workplace management like effective communication, powerful decision making, substantial judgements, problem-solving and also improves personal management by instilling indispensable abilities like self-reflection, compassion and creativity (Tripathy, 2020).

Even in the workplace we know that it is possible to manage workplace learning processes in order to foster the presence of critical thinkers. We also know that this is not true for all work positions and that this depends on the corporate culture, work organisation and the type of production activity, more or less knowledge intensive.

With respect to the vast field of adult and continuing education we can use historical evidence to state that this has been the field in which practices generating critical thinking and learning skills have been developed for the benefit of all ages – including the elderly. These results are due as much to the action of membership organisations as to libraries and all kinds of cultural infrastructure. This has been the case from the very beginning both in the USA and in Europe. It has to be said that also depending on the political contexts, the functions of adult and continuing education have been bent to perform functions of reproduction of dominant ideas. In these cases, this occurred when it was used to generate and spread exclusively biased and reproductive or subjugated thinking among the majority of the population.

8. Digital media consumers and their civic engagement in customer communities

The key problem posed by the challenges of learning warfare must also be addressed directly in front of the desktop, when using digital education content both for individual purposes and to pursue civic opportunities online.

Digital consumers have been defined as prosumers, i.e. as by definition active participants in the production process: a product becomes a real product only through consumption.

As noted in Rayna and Striukova (2021) “Web 2.0 technologies have considerably lowered the barriers to user creation and, in fact, many Web 2.0 services derive their value almost exclusively from the content created by users” (p. 228).

The problem is that Internet stakeholders have made choices to reduce this role, to contain it and integrate it into the co-production of various types of products and services.

On the educational level, consumers play a further active role as they activate their learning processes. This occurs whether they reproduce the educational values and meanings intended by the digital educational objects they have used or develop their own response based on an autonomous construction of meaning.

Despite the active and essential role of consumers in the digital economy, their role is, however, obscured and dominated by the producers and operators of this system. The intention is to subject it to their control (through the centralisation of the communication system in large and expensive hubs) and to constantly subject it to commodification processes. Probably also for this reason, the research is predominantly focused on the role of the consumer as purchaser of products.

Despite these limitations, some evidence can be gathered that shows how, even in the current situation, consumers can practise their critical digital literacy skills and pursue civic opportunities online. Let us take three documented examples due to the initiative of governments, participants in conflicts, and participants in actions for the defence of citizenship rights.

There are government policies aimed at actively incorporating young people into their public education campaigns, and young people are enlisting themselves as media literacy advocates. In Italy, for example, young people are engaged in the promotion of digital culture and perform their service (civil service) in thousands of libraries. Similar experiences exist in several countries around the world (Lim & Tan, 2020). In some cases, this is a semi-professional functional media literacy service aimed primarily at the expansion and customer base of the digital economy (Arin, 2023).

A further field of civic engagement under investigation is the use of social media during the pandemic, or electoral campaign, or in conflicts and during insurgencies. All these studies have shown the importance of Twitter, Facebook, etc. in mobilising protesters and influencing public opinion. Studies have shown that Twitter or social media in general can be important instruments for identifying – through content analysis – different perspectives in a conflict, in particular, for capturing the wishes of young people who are used to expressing themselves via digital channels (Gabel, Reichert, & Reuter, 2022).

These are research that help us understand the times and problems that emerged from the analysis of messages on Twitter. In the case of the Kashmir Conflict, for instance, "the lack of awareness among people in the region regarding the motivations of the new generation of militancy emerging in Kashmir after 1990" (ivi, p. 523). An in-depth analysis could enable us to learn about the educational actions that can be carried out to increase people's awareness of the meaning of their communication in relation to their goals (their utopia).

The third example is the use of social as civic engagement of customer communities to address environmental contents. The study we refer to concerns "civic participation in informing, educating society about the environment and shaping the environmental agenda [...]). The object of the study is protesting communication practices of conflict mobilisation [...] 2012-2021 in Russian-language social networks, bringing participants together around an environmental problem [... *for*] the formation of public consciousness" (Rebrina, 2021, pp. 1-2).

The study describes "the practices of conflictual environmental mobilisation in social media as an integrative hyper-genre: polyfunctional (informing, evaluating, inciting, agitating and propaganda), combining features of different discourses (media, political, everyday, internet discourse), stylistically and genre-syncretic (bookish and colloquial speech, signs of open writing and internet forum)" (ivi, p. 4).

The study also analyses "thematic dominants to identify frequent constructs of environmental threats from the observer perspective (ordinary citizens - group participants); describing strategies and tactics for problematising fragments of environmental reality; identifying regular means of creating/maintaining online solidarity in communities" (ivi, p. 7).

The analysis describes the characteristics of a typical discussion of a large group of people, enriched by the tools and languages of digital technology, which takes place over an extended period of time. From the educational perspective, it poses methodological problems, typical of conducting the analysis of a topic (in this case environmental issues) through the dialogue and work of a large group, unstable in its composition. The complexity

and richness is given by the variety of participants, the variety of sources used, the use of participants' expertise, the choice of linguistic registers that ensure the circulation of communication in the group. It would be interesting to understand how discussion is self-regulated and whether there are forms of pedagogical power sharing among peers. Other aspects remain to be investigated, such as the stages through which the discussion passes, its dialogical character, the management of conflicts and the roles assumed by the participants, the management of the process of analysis and synthesis, and even the evaluation of the community's activities and the participants' learning outcomes.

Conclusion

The construction of an active defence against learning warfare requires a consumer audience capable of becoming the author of the educational content it generates and making sense of it according to its own utopia.

The formation of a public opinion with critical digital learning requires an educational strategy extended to all ages of life (think of the role of the elderly in the dissemination of fake news).

Probably the biggest obstacle to overcome is the lack of critical digital thinking skills. There are objective obstacles. Educational institutions at all levels, are the products of technology infrastructure and social culture of the past.

A further obstacle is the resistance encountered by the dissemination of educational practices oriented towards the development of critical thinking and critical digital learning. In this respect, the difficulty may be both cultural and related to the consumer control and commodification strategies adopted by the digital economy.

Lin, Liu, and Pham (2023) point out that critical thinking is considered by various authors to be a Western concept and that in fact learners with a non-Western background usually lack critical thinking skills. This would mean that critical digital learning would only be practicable by a minority of the world's population today. This could be an advantage, but also a risk.

We live in a historical moment of geopolitical tensions, in which it has been said "I genuinely believe that over the next decade the world will get more insecure and more unstable" (Wallace, 2023, p. 2).

The hope is that the conduct of cognitive and learning warfare will not lead to a passivising counter-strategy, based on denying young people and adults the opportunity to develop their own critical thinking with respect to all content, including education.

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