

***Addressing conspiracy theories through Media and Data Literacy Education.  
An exploratory case study***

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**ABSTRACT**

Lately conspiracy theories (CT) are increasingly hovering over Education Studies, mostly as problems in search of a solution. This paper problematizes this educational solutionist discourse by reflecting critically on different framing of CT (i.e., epistemological and ethico-political) and some related educational responses, ranging from pre/debunking strategies to democratic discussion. In addition, Media Data Literacy Education (MDLE) is presented as a viable educational approach to address CT circulating online. The approach is empirically explored through an online workshop with a small group of social workers attending a course for socio-pedagogical educators at the University of Florence. A qualitative mixed methodology is used to explore the pedagogical relevance of the MDLE intervention in addressing the educational challenges posed by CT and to highlight a possible critical rethinking of participants on the CT and their data. Results suggests that participants see MDLE as a valid pedagogical strategy to guide different learners (adolescents, general public and themselves) in the critical evaluation of media (dis)information. In addition, although the workshop seems to have enhanced participants' critical thinking about mediatisation and datafication of CT further research is needed to develop and evaluate this pedagogical strategy, especially in relation to multiperspectival thinking and democratic discussions of CT in formal educational contexts.

**Keywords:** *media literacy education, data literacy, conspiracy theories, critical thinking, qualitative research.*



## INTRODUCTION

In 2021 the WHO adopted the term infodemics to describe the spread of online disinformation and conspiracy theories (CT) about COVID-19 pandemic. In this regard, one striking example of CT amplifying the COVID-19 infodemic is the short documentary *Plandemic: The Hidden Agenda Behind Covid-19* by Mikki Willis who successfully spread online it via some major social media platforms (Nazar & Pieters, 2021). In brief, the film's narrators argued that the COVID-19 virus was planned by global elites as a means of controlling the population. It further argued that vaccines are harmful and that wearing facial masks "activates" the coronavirus – meanwhile suggesting pseudoscientific treatment alternatives, such as "healing microbes" found in the ocean.

In the light of the potential threat of this kind of conspiracy media narratives to citizens' health, education has been increasingly seen as a fundamental response to make citizens aware of the dangers of infodemics. For example, UNESCO launched the online campaign #ThinkBeforeSharing - Stop the spread of conspiracy theories consisting of the circulation of tips and infographics to help citizens identify and to recognize CT and verify their reliability, as well as how to refute them logically and empirically by proving their falsity<sup>1</sup>.

In this scenario, a number of national surveys in the US (Will, 2020), preliminary findings from research studies (Dyrendal & Jolley, 2020; Peters & Johannesen, 2020) and analyses of how to respond to CT in the context of education (Beene & Greer, 2021; Harambam, 2021; Saltman, 2020) showed that educators are generally torn about whether or not they should address CT in the classroom or attempt to "correct" the misinformation on which conspiracy beliefs are grounded. Generally, educators find difficult to handle CT either because they are unsure how to do it or because there are too many risks involved, therefore, they prefer to avoid touching the topic.

The present study aims to explore the effectiveness and relevance of the potential integration of media literacy with data literacy in navigating the complex landscape of CT, providing educators with a novel tool to address this issue in today's information disorder era. On the theoretical level, we propose an integrated

critical approach to media and data literacy (Buckingham, 2020; Pangrazio & Selwyn, 2019) to address CT on multiple grounds, including epistemological, aesthetic, economic, ethical and political dimensions. On the empirical level, we present and discuss findings from an introductory Media Data Literacy Education (MDLE) workshop focused on CT, conducted with adult educators, specifically social workers.

The research study aims at exploring how social workers make sense of MDLE and CT in relation to their educational needs, pedagogies and learning. The primary objective is to determine whether and how our educational intervention contributes to promoting critical thinking skills in interpreting data and understanding CT spread through digital media. The study also seeks to explore the educational gaps arising from this approach, both in terms of educators' expressed needs and those perceived concerning the broader audience they engage with. Additionally, the study delves into the implications of the research findings for the assessment and development of MDLE strategies specifically designed to address the challenges posed by CT. By examining the educational relevance of this approach from several perspectives, the article aims to contribute a theoretically grounded experience to the ongoing discourse on combating misinformation and promoting a more critical and discerning public in the contemporary social media saturated society.

## LITERATURE REVIEW

### Conspiracy theories and the role of education

CT are attempts to explain a phenomenon or an event in terms of actors secretly abusing their power to accomplish their own goals with the result of depriving the people of rights, freedom, prosperity, health or knowledge (Sunstein & Vermeule, 2009; Uscinski & Parent, 2014). More articulated definitions seek to distinguish conspiracy theories from real conspiracies consisting of actual events (e.g., Watergate) and CT, which are, by definition, unproven. According to Van Prooijen (2018), the defining features of CT are 1) the establishing of non-random connections (or patterns) between actions, objects and people to explain events; 2) the intentional orchestration of the suspected event by

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<sup>1</sup> #ThinkBeforeSharing - Stop the spread of conspiracy theories (unesco.org):  
<https://en.unesco.org/themes/gced/thinkbeforesharing>

intelligent actors, that is the agency behind the CT; 3) the coalition or group of multiple actors, usually but not necessarily humans (“alien lizards” are an example of nonhuman CT); 4) the tendency to assume that the suspected coalition pursue evil, selfish, or otherwise not in the public interest, goals; 5) the continued secrecy of the operations of the evil coalition.

However, regardless of whether a conspiracy theory is proven or unproven or discounted as “paranoid”, CT can have important epistemic, ethical, and political consequences. As Zembylas explains:

certain types of conspiracy theories may undermine rationality and logic, because they suffer from ‘unreasonableness’; or, certain morals could be at stake, since some conspiracy theories can be harmful (e.g., about global warming), given that their acceptance influences people’s behaviour, misleading the public and thereby undermining the public good; or, certain conspiracy theories may even have adverse effects in democratic societies, if their acceptance threatens the functioning of democracy by cultivating a culture of distrust, animosity, division, and prejudice against particular groups such as for example immigrants or Jews. (Zembylas, 2021, p. 2)

In recent years, even before the pandemic, education has been increasingly pointed out as a promising response to tackle or mitigate the “dangers” of CT. Educational responses to CT tend to differ according to the way CT are framed.

Generally, the framing of CT as an epistemic problem emerges as the most common in the literature (Brotherton, 2015). From this perspective, learners are invited to evaluate CT on epistemic terms and develop epistemic thinking (Chinn & Rinehart, 2016), that is to achieve knowledge and truth. In this respect, prebunking and debunking of CT are seen as valuable pedagogical strategies. Prebunking (or “inoculation”) consists of making people preemptively aware that CT might be misled. There are two elements to prebunking: (1) an explicit warning of an impending threat and (2) a refutation of an anticipated argument that exposes the imminent fallacy (COMPACT Education Group, 2020, p. 12). As for debunking of CT, basically it means to show that they are false. Nevertheless, several studies show that often conspiracy theories can’t simply be “corrected” by providing additional evidence, especially with committed individuals who are devoted to one or more CT (Compact Education Group, 2020; Zollo et al., 2017). Indeed, a major feature of CT is their self-sealing quality, namely, proponents of conspiracy theories reject ‘expert’ (e.g., scientific) opinions accusing them of being part of the plot (Sunstein & Vermeule, 2009). This is what makes conspiracy theories very hard to

debunk on epistemic grounds (Harambam, 2021). In addition, in some cases attempting to correct conspiracy beliefs may not only be insufficient, but could also backfire, because it makes proponents even more committed to their beliefs; in this sense, corrections could actually further consolidate the original beliefs (Zollo, 2017).

Some scholars suggest (Cassam, 2019) that, since CT are non-falsifiable they should not be treated – exclusively or predominantly – as an epistemic or cognitive problem. CT should be rather seen as forms of political propaganda and not as not attempts to tell the truth. Hence, ideological and political motivations become crucial in the formation, spread and containment of CT. Along these lines, Zembylas (2021) proposes an ethico-political framing of pedagogical strategies as a more viable option to address CT on the educational ground. An ethico-political framing for tackling CT consists of

“a pedagogical framework that is the insights of openness, agnostic tolerance and healthy scepticism to non-unreasonable CT, and the use of ethical unreasonableness instead of narrow epistemology as a criterion to guide pedagogical engagement with ‘bad’ CT” (Zembylas, 2021, p. 10).

From this perspective, CT are problematic and should be contained when they are unreasonable in an ethical sense, that is when they undermine the fundamental political value of equal respect of other citizens as equals (Nussbaum, 2011). In this regard, for example, the white-supremacist theory of Big Replacement according to which minorities are ‘replacing’ Whites is a clear example of ethical unreasonableness as it urges people to think and act in ways that dehumanise others and deny all people are equal (Dave & Ebner, 2019). Nonetheless, Cfbik and Hardos (2020) observe, applying the criterion of the ethical unreasonableness in the classroom to guide pedagogical response to CT is far from straightforward and it should be anchored to already existing policies and practices against hate speech, racism, etc. in schools and universities.

Considering that, openness in democratic discussion is still considered more appropriate to respond to CT in the context of democratic societies (Räikkä, 2018). Starting from the assumption that healthy scepticism is one fundamental aim of education, Peters (2020) suggests that not all conspiracies should be rejected by default and treated as irrational and dangerous. In addition, Uscinski (2018) claims, CT can be also examined as warnings against abuse of power, as the

main concern of CT is who has power and what is done with it. Cfbik and Hardos (2020) invite to address non-unreasonable CT by maintaining an “agnostic tolerance”, which involves putting up with beliefs or practices we may consider wrong, silly or epistemologically problematic. Finally, attention should be paid also to the role of affects and emotions in conspiracy thinking in educational settings. Specifically, this entails a situated “affective pedagogy” that is conducive to explore how conspiracy beliefs have ethical and emotional consequences that are experienced differently by different people and communities (Zembylas, 2021). From this perspective, Been and Greer (2020) observe that showing empathy to the believers of CT rather than labelling them as “paranoid” or “stupid” entails recognising their feelings of uncertainty, anxiety and alienation. Of course, this is not a blind and uncritical empathy as the “ethical reasonableness” criterion mentioned earlier suggests.

### **Toward a Media Data Literacy Education approach to address conspiracy theories**

Generally, research shows that education in media literacy can have positive outcomes on students’ knowledge, skills and attitudes in analyzing and critically understanding news media and disinformation (Kahne & Bowyer, 2017; Jeong et al., 2012; Vraga & Tully, 2015). However, few empirical studies have hitherto focused on the educational relevance and effectiveness of MLE to address CT. Furthermore, research results are rather mixed.

Guan and colleagues (2021) carried out a between-subjects experimental study with 607 adult participants to evaluate the effectiveness of five approaches to reduce conspiracy beliefs related to COVID-19. Interestingly, here media literacy, along with inoculation and science- and fact-focused correction, is understood as a content-based method to debunk CT. The fourth and the fifth method experimented, instead, are considered more human-focused and are centred on the improvement of an individual’s psychological condition, as well as their sentiments on specific out-groups.

Consistently with the framing of media literacy as a content-based debunking strategy one group of participants ( $n = 102$ ) were asked to watch a video containing conspiracy narratives and then answer some questions regarding the production, message, and language of the conspiratorial media content. Questions were specifically selected to reflect on the objectivity,

credibility and neutrality of the conspiracy narratives. Following this manipulation, participants rated their beliefs in the conspiracy theory through a dedicated survey. Findings demonstrated that media literacy intervention and inoculation approaches were ineffective at reducing audiences’ beliefs in COVID-19 induced conspiracy theories. Conversely, the science- and fact-focused corrections were able to effectively mitigate conspiracy beliefs and, more crucially, audience-focused methods, which involve decoding the myth of conspiracy theory and re-imagining intergroup relationships, were effective in reducing the cognitive acceptance of conspiracy theory.

Another empirical investigation with 397 adult participants focusing on the impact of news media literacy on the inclination to endorse conspiracy theories (Craft et al., 2017) obtain completely different results. The research examined the overlapping traits between those who are news-literate and those who believe in conspiracy theories and the relative political orientation. In this study, Potter’s (2004) cognitive approach to media literacy has been adapted in research conceptualising and testing measures of news media literacy (Vraga et al., 2015). Relative to other conceptualizations of media literacy, Potter’s (2004) model of media literacy places a great emphasis on the “conscious processing of information” and “preparation for exposures” knowledge in five domains, media content, media industries, media effects, the real world, and the self. Findings showed that both liberals and conservatives with greater news literacy skills were not persuaded by the conspiracy theories aligned with their political beliefs. Hence, researchers conclude, that greater knowledge about the news media predicted a lower likelihood of conspiracy theory endorsement, even for conspiracy theories that aligned with their political ideology.

Although the two studies differ in both research design and CT at stake, both seem based on a similar understanding of media literacy in which the underlying conception of critical thinking is fundamentally a rationalistic/cognitive one associated with the ability to identify or debunk a CT. However, as we noted above, debunking is a strategy that predominantly treats CT as an epistemic problem while underestimating their social, ethical and political dimensions.

Conversely, a more socio-critical conceptualization of (media) literacy seems more appropriate to address CT also in ethico-political terms. In this regard the notions of critical media literacy (Kellner & Share, 2007, 2019), civic media literacies (Mihailidis, 2019)

and dynamic literacies (Potter & McDougall, 2017) offer some crucial insights.

Critical Media Literacy with its emphasis on the critical understanding of “how power, media, and information are linked” (Kellener & Share, 2007, p. 8) concentrates on ideology critique through the analysis of politics of representation of gender, race, class; alternative media production; and expanded textual analysis to include issues of social context, control, and pleasure. This crucial and agentive understanding of Media literacy seems particularly helpful to look at CT as a site of struggle that needs to be contextualised within the wider “modern/colonial capitalist/patriarchal world-system” (Grosfoguel, 2006).

Mihailidis’s model of civic media literacies (2019) refocuses media literacy from a set of skills and competencies (access, analyse/evaluate, create, reflect, act) to a set of value-driven constructs (caring, imagination, critical consciousness, emancipation) that support civic intentionality in media literacy practice. In this respect, media literacy seems suitable to evaluate critically also the “ethical reasonableness” of CT and to take individual and collective action accordingly in the onlife public sphere.

The concept of dynamic literacies (Potter & McDougall, 2017) further stresses the agentive, social and situated nature of literacy by paying attention to the socio-materiality of digital media in our everyday life. From this perspective, CT can be seen as an informal literacy practice located in the first space (e.g., digital filter bubble, home, group of peers) that can be critically explored through the conceptual tools and pedagogies located in the second space (e.g., school and academia). In this regard, also online CT can be used to create a dynamic third space to learn about the digitalization of CT and its implications for democratic societies. Crucially, this dynamic approach is not normative or solutionist one. Conversely it is:

deeply situated in cultural, geo-po-litical and media ecosystem contexts seeks to avoid universal, ‘neutral’ solutionism and to understand tensions and nuances, such as the ways in which media literacy interventions in response to “information disorder” relate to freedom of expression, civic agency and epistemological value systems. (Rega & McDougall, 2023, p. 50)

Interestingly, along these lines, Barzilaia and Chinn (2020) suggest how addressing the post-truth condition implies also the acknowledgment and coordination of multiple epistemologies.

Critical/civic/dynamic literacies help to clarify how ML should not be understood exclusively as a set of individual and cognitive competences for students to develop but also as a dimension of civic agency based on democratic values and attitudes (McDougall et al., 2018; Mihailidis, 2019), as well as on equity and social justice (Mihailidis et al., 2021). This comprehensive and engaged vision for MLE includes communal sense making and empowerment to engage with media as critical citizens (Buckingham, 2020; Hobbs, 2010; Hobbs, 2017).

In our view, this sociocritical understanding of media literacy can be further expanded to grasp the ongoing datafication of CT. Data and the resulting technologies and applications – such as Big Data, AI and algorithms – also play an increasingly relevant role in the dynamics of re-production, negotiation and contestation of propaganda and conspiracy theories in the onlife public sphere (Van Audenhove et al., 2020). Contemporary media practices are not limited to the sphere of action of the individual, as a consumer even if ‘critical’, but are intrinsically networked and require proactive skills related to one’s social and communication on experiences (Bateman, 2021). The manipulation of data and information often underlying the media products through which CT are disseminated aims to provide distorted or misleading interpretations of real information. The reference to data literacy to counter this phenomenon is part of a updated conception of ML, in which the digital information traces represented by data are seen as something situated and necessarily understood in relation to other social practices (Dencik et al., 2019).

The theoretical framework of data citizenship, developed by Carmi et al. (2020), emphasizes the need for citizens to develop the capacity to act critically and actively with regard to data, outlining three progressive levels of meaningful participation in their communities: (i) data thinking - the attribution of meaning about the critical reading, collection and understanding of data, (ii) data doing - the actions that can be actively taken, such as requesting the deletion of personal data and using acquired data in an ethical manner, and (iii) data participation - proactive engagement in the form of collective activism and support for the spread of data literacy. At this last level are the Open content movement, within which practices of transparent and democratic use of open data are encouraged, and data justice initiatives, in favour of fair and unbiased representation of society (D’Ignazio, 2017; Pangrazio & Selwyn, 2019). Hence, although a critical approach to

data as part of a broader ethical orientation for digital citizenship is promoted and encouraged (Atenas et al., 2023), to date there is no research exploring the role of data literacy in relation to CT.

Our exploratory Media Data Literacy Education approach (from now on MDLE) to address CT employs four intertwined MLE concepts (production, representation, language and audience) (Buckingham, 2003; Kellner & Share, 2019) to frame critical learning both about media and data. In addition, as Figure 1 illustrates, social/data justice crucially relates to each concept in order to maintain an ethico-political perspective on CT.

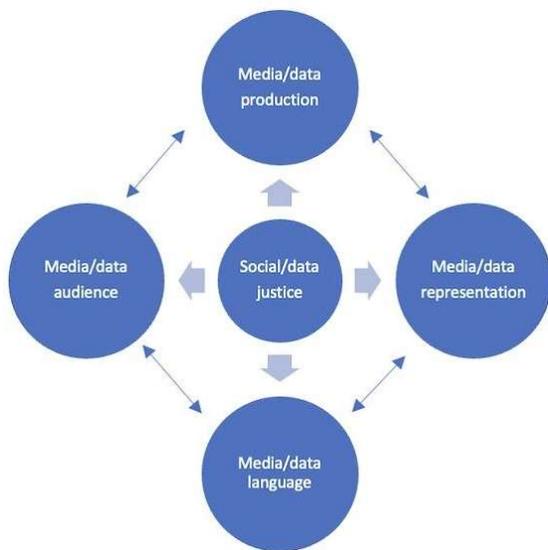


Figure 1. *Media Data Literacy Education framework*

The concept of representation is particularly useful to shift the focus of critical thinking from the logical fallacies of CT, as is the case with debunking techniques, to the ideological nature and the political aims of the theories themselves. This shift in perspective is crucial to inquiry into the ‘politics of representation’ underlying conspiracy narratives which, as van Prooijen (2018) observes, are characterised by the representation of mutually antagonistic social groups (us vs them). In this sense, the representation of social identities in conspiracy narratives is a crucial aspect to explore - particularly in terms of social class, gender, age, ethnicity, religion and sexual orientation - in order to understand which power relations are reproduced and which are contested (Ranieri & Fabbro, 2016). From this perspective, not even digital data are unbiased representations of reality. Indeed, digital data are not

neutral and objective portions of information per se, but are socially constructed elements (Pangrazio & Selwyn, 2019). Hence, as partial and reduced representations of information, data are an intentional simplification of a more complex reality (D’Ignazio, 2017).

In the current media ecosystem dominated by platform capitalism (Srnicek, 2016), the critical analysis of media and data production processes should raise awareness of the specific ways in which platform-owning companies create their profits, through the extraction of economic value from the media practices of users who are both consumers and producers (prosumers) of digital contents. In this scenario, it is also interesting to understand how few users benefit economically from platform capitalism, including those who disseminate conspiracy theories online. The intentionality behind the collection and production of data plays a crucial role in determining the relevance of different topics for different social actors. The absence or under-representation of certain data often refers to issues that are particularly critical or sensitive for marginalised social groups (Onuoha, 2018). Furthermore, the same dataset can be used for different purposes and interests and even the mathematical algorithms underlying Big Data can be formulated and adapted according to the most influential interests (O’Neil, 2016).

Focusing on the linguistic (or socio-semiotic) dimension of media is important to understand the persuasion techniques conspiracy theories rely on. The multimodal and interactive nature that conspiracy narratives tend to assume online undoubtedly makes them more attractive in the eyes of the general public and increases the likelihood that they will go viral. Hobbs’ (2020) observation regarding the hybridisation between genres that characterises contemporary propaganda can be extended to conspiracy theories, as they are often made up of a combination of even very different media genres, for example documentaries, memes, pseudo-scientific publications, political manifesto. Hannah (2021) explored the QAnon conspiracy theory’s use of information visualization. To communicate its message and recruit followers, QAnon uses complex, interactive visualizations of misinformation to lend it credibility. The author highlights the difficulty in effectively addressing the spread of conspiracy theories that mimic data analysis and information literacy methods. In this regard, a deeper knowledge of data semiosis is also crucial to question CT.

From a media education perspective, the concept of audience is useful in bringing attention to how different audiences are reached and targeted by the media, but also to the different ways in which individuals and social groups in turn use, interpret and participate in the creation of media content and its online dissemination. With respect to conspiracy theories, the concept of audience invites us to consider to what extent people are confined in their echo chambers or filter bubbles and how this affects their interpretations of the world and their media practices that could contribute, more or less intentionally, to the dissemination of conspiracy theories on the web (Mihailidis & Viotty, 2017). In addition, in the context of promoting “data justice” as a demand for equity, justice and civil rights in the datified society, there is an educational need to raise awareness and work on understanding the distribution of the benefits and burdens of collecting, managing and using data (Dencik et al., 2019). While promoting transparency and accessibility to data can help prevent the spread of misleading information, today’s scenario does not seem encouraging: Colborne and Smit (2020), identified several risks that could undermine the quality, integrity, and authenticity of open data. These include closing open data repositories, achieved either by removing the data entirely or by defunding open data initiatives, or diluting the quality of open data by introducing biased data (e.g., from poor science).

Consistently with socio-critical conceptualisations of media and data literacy, MDLE crucially combines an epistemological and an ethico-political framing of CT to support their critical understanding and a civic agency based on equity and social justice.

## METHOD

### Workshop design, content and delivery

The online workshop “Data literacy for citizenship: critical education on data and conspiracy theories” was designed to introduce a Media Data Literacy Education (MDLE) approach to CT. The authors co-led the workshop in March 2021 at the University of Florence as part of the Course for the qualification of socio-pedagogical educator attended mainly by social workers with at least three years of professional experience. Adult learners freely chose the workshop among different options. The workshop and the teaching activities were designed and conducted by two researchers (1 male and 1 female, average age 40 y.o.)

acting respectively as pedagogical tutor and instructional designer throughout the Course.

The workshop was aimed at providing participants with theoretical and methodological tools for approaching CT from a media-educational perspective, with a focus on how data literacy can be used to critically understand their onlife propagation, as well as to question them. The educational objectives of the workshop consisted of a) a critical understanding of media practices of representation, production and dissemination of conspiracy theories and b) increasing awareness of the skills required to interpret and use data, as well as their relevance in terms of civic participation and critical data literacy. The three-hours workshop combined direct teaching and collaborative activities in an online setting, specifically the Zoom platform. Firstly, the topic of CT was introduced and discussed through a media education lens, with a particular emphasis on the relationships between social/data justice and the concepts of production, representation, language and audience. Afterwards, key elements of data literacy were illustrated through examples and guided exercises on the implications of data collection, access and representation. Finally, participants in small groups analysed and discussed, on the basis of the MDLE framework illustrated above, an example of data storytelling about the Great Replacement Theory.

### Research design

The purpose of this exploratory case study (Yin, 2018) is to understand how educators make sense of MDLE approach and how this latter can enhance critical learning about CT, media and data. The following research questions guided the empirical study:

- RQ1: What educational needs does the MDLE approach to conspiracy theories intercept according to social workers?
- RQ2: What did social workers learn about data/media, conspiracy theories and their intersections?
- RQ3: What are the implications of the study for the development of MDLE to address CT?

The study adopted a sequential qualitative mixed method design (Morse, 2010). Data were collected through pre-post online surveys conducted on the intervention day and a subsequent focus group with some of the participants. The workshop, attended by 18 participants, involved pre- and post-surveys administered shortly before and after the training

session, respectively. Respondents used identification codes to link their responses. Out of the 16 pre-surveys and 13 post-surveys collected, 11 had matching codes. Information about the 11 respondents (F=6; average age 44.2) corresponding to the sample of this study are shown in Table 1.

The surveys, ad-hoc instruments designed by the authors, aimed to gather demographic information and participants' perceptions of the educational experience. The pre-survey included prompts for associating three words with "data" and "conspiracy theory". These prompts were repeated in the post-survey, accompanied by five open-ended questions about the educational experience and its potential implications for their roles as social workers.

Table 1. *Characteristics of the participants*

ID	Age	Sex	Professional context	Focus group participant
P1	49	M	Social services	Yes
P2	48	F	Social services	Yes
P3	34	F	School	Yes
P4	48	M	Correctional facility	Yes
P5	46	M	Youth at-risk	No
P6	43	F	School	No
P7	26	F	School	No
P8	46	M	Social services	No
P9	45	M	Healthcare	No
P10	57	F	Healthcare	No
P11	45	F	Healthcare	No

In addition, four social workers (2 females and 2 males, average age 45 y.o.) (P1, 2, 3, 4), engaged in both pre- and post-surveys, further participated in a subsequent two-hour online focus group led by the authors. The focus group delved into social workers' perspectives on the network of topics linked to the research questions, while also allowing for additional themes to emerge from the discussion (Wilkinson, 1998). The semi-structured interview was audio-recorded, transcribed, and conducted with the participants' consent, which was obtained through an

online form outlining the study's purpose and data collection procedure.

The transcript of the focus group and the answers to the open-ended items of the post-survey were subjected to thematic analysis (Braun & Clarke, 2006) while only some answers to discourse analysis (Fairclough, 1989; 2011; Gee, 2011). Specifically, to answer the RQ1 an inductive thematic analysis of the focus group's transcript and of two questionnaire's open answers ("Can the topics addressed in the workshop be relevant in your professional context? Why?" and "Did your participation in the workshop inspire you to propose some didactic activity to the beneficiaries of your educational interventions? What could it be?") were carried out. As for the RQ2 about learning, the qualitative analysis focused on two specific sources of evidence and two different methods of data analysis. Participants' sentences or words to complete the questionnaire's prompt "Through the workshop I learn..." were subjected to an inductive thematic analysis to detect participants' self-reported learning. Words associated with the terms "data" and "conspiracy theories", instead, underwent a discourse analysis to uncover possible traces of learning from participants' language use (Rogers, 2011).

As far as thematic analysis is concerned, texts were analysed with the support of the QCMap software (Mayring, 2019) whilst discourse analysis was carried out manually. One author carried out the thematic analysis related to the educational needs (RQ1) and the other author the thematic and discourse analysis focused on learning (RQ2). Throughout the analysis the authors discussed and refined their respective codebooks and interpretations of data. To answer RQ3, a triangulation of the results of the different methods was carried out.

## FINDINGS AND DISCUSSION

### Educational needs intercepted by the MDLE approach

The goal of this thematic analysis was to understand how social workers identify competences linked to educational intervention and who these competences are associated with. Thus, on the one hand, themes emerged concerning the different skills and knowledge that the participants perceive as learning needs elicited by the MDLE approach, categorized into information literacy, media literacy, data literacy and critical awareness. On the other hand, three areas of intervention (educational, professional and civic) were defined on the by grouping

the beneficiaries of the MDLE approach identified by participants, for example social workers, citizens or students.

The first area is concerned with the educational needs of the intervention's beneficiaries, the second with professional development needs and the third with the development of critical and aware (digital) citizenship of the entire population. The results are presented in the order of the themes, with an emphasis on the intervention areas towards the conclusion.

The plurality of disciplinary positions and perspectives on different literacies is widely recognised in the field of research (Wuyckens, Landry & Fastrez, 2022), which is why the following definitions of the themes are specified as a result of the analysis. We define information literacy as the acquisition of skills related with the use of news media research tools, as well as the ability to generate, evaluate and distribute information. We define media literacy as the ability to access, comprehend, analyse and create media products. Data literacy refers to the abilities connected with data, such as understanding the limitations and biases of a data set and collection tools, performing analyses and being able to correctly read and interpret results. Finally, critical awareness refers to knowing and reflecting on the cultural, social and historical contexts of the use of technology and knowledge production instruments. To one respondent, the topic and approach used in the MDLE workshop was deemed irrelevant in the professional context.

The initial theme, concerning information literacy, is associated with the identified gaps revealed by the MDLE approach to CT. Often the need is traced back to beneficiaries, particularly adolescents who struggle to rebuild the dynamics of news media production and transmission. This skill has been identified as a prerequisite for other types of interventions, such as preventing incidents of discrimination and violence on the internet:

“I found myself in an attitude that you also brought forward about prevention, about reflection of inviting criticism, therefore also about deepening information that in theory should then prevent hate speech” (P2).

Furthermore, information literacy is linked to adult beneficiaries and social workers, personally and in reference to co-workers. One participant comments:

“This had come up a little while ago, just the idea of Bill Gates<sup>2</sup> [...] as the cause of our current situation in one of these groups, so I felt that there was a need to bring back some clarity but also an ability to reason about things. [...] It would be interesting if this could be done within the organization as well, so not only for the beneficiaries because certain things have come up [...] among colleagues. So, also try to think about moments of internal self-training with respect to this. [...] It's more difficult to think about having to train on something like that however now it becomes crucial for us as operators as well” (P4).

Secondly, the analysis highlights how participants identified the theme of media literacy with both educational needs for beneficiaries and citizens. Critical web surfing and communication in social networks are recognised as relevant to the education of students in relation to the analysis of their media practices:

“I would like to bring to the schools in my area a project proposal next year on this topic, as an output from this training course. To propose the possibility of tackling addressing with high school students or perhaps in the 3rd year of middle school [...] an analysis of communications in the social network sites” (P1).

Participants also identify CT and more generally “toxic narratives” as topics that should be addressed with critical analysis tools in interventions for citizens. Finally, one participant emphasises the importance of developing training programmes with experienced media educators who can also give appropriate teaching approaches for social workers and teachers.

Data literacy was mentioned by participants to support the beneficiaries of educational interventions, both in the school setting. For example, participants refer to data literacy in regard to the development of independent thinking for adolescents and as critical data comprehension skills for adults with specific mental health problems, such as ludopaths. Data literacy is related with the social work profession in terms of understanding of open databases, enhancement of the use of statistical information for intervention planning and an objective and unbiased approach to data:

“the data may be incorrect; one can somehow debate the process that led to that. I believe that it should be carried forward, explored and deepened by competent people who have a non-ideological approach, then everyone of course brings their own story, but so that somehow we can tell this experience maybe by comparing points of view” (P1).

Finally, it was mentioned by one participant as a skill that can data-informed guide policy decisions.

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<sup>2</sup> The reference is to a CT associating Bill Gates with the COVID-19 pandemic:

<https://populationmatters.org/news/2023/01/conspiracy-chaos-coronavirus-bill-gates-the-un-and-population/>

The last theme relates to critical awareness, which as one educator exemplifies as the ability “to look, to criticize, to observe from viewpoints and to see that there is always other possible truth” (P4). This theme underscores the identified gap or necessity in schools and broader contexts for cultivating informed citizenship, as well as the emotional components that, if not addressed propaedeutically, may impede critical understanding of CT s. The role of social workers then becomes to support this process to

“make people aware of the choices they make from all points of view, whether it is adhering to an idea rather than even making a choice of any kind, even just a purchase, [...] to make choices that start from reflection” (P2).

Acquiring such competence would enable social workers to critically analyze events first-hand and in turn become role models by applying this ability in their own professional context.

Figure 2 was created to illustrate the relationships between three dimensions: the educational needs identified through the MDLE approach, the specific group for which these gaps are perceived and the scale of the intervention required. Within each dimension, diverse categories are presented and organized based on

the frequency of mentions by the participants (the top category with the tallest bar was mentioned more frequently). Flow fields connect these dimensions, indicating the proportionate association with the categories in the subsequent dimension (respectively group and area). Interestingly, the needs that emerged are linked with many target audiences, while, social workers primarily referred to their beneficiaries in terms of educational needs prompted by the MDLE approach they experienced in the workshop. Furthermore, civic needs are more closely tied to the broader transversal abilities of critical awareness and media literacy, whereas educational needs particularly pertain to the capacity to read and comprehend media news and data, recognized both on a personal and organisational level.

The results also show that educators focused primarily on individuals, both beneficiaries and professional figures but also as citizens, and only in one case was the role of educational and social policies represented by policy-makers in addressing these issues. Finally, it is noted that CT s have rarely been recalled in terms of educational and professional development needs. In fact, social workers have focused on fundamental abilities to identify requirements for wider concerns perceived to be more complex.

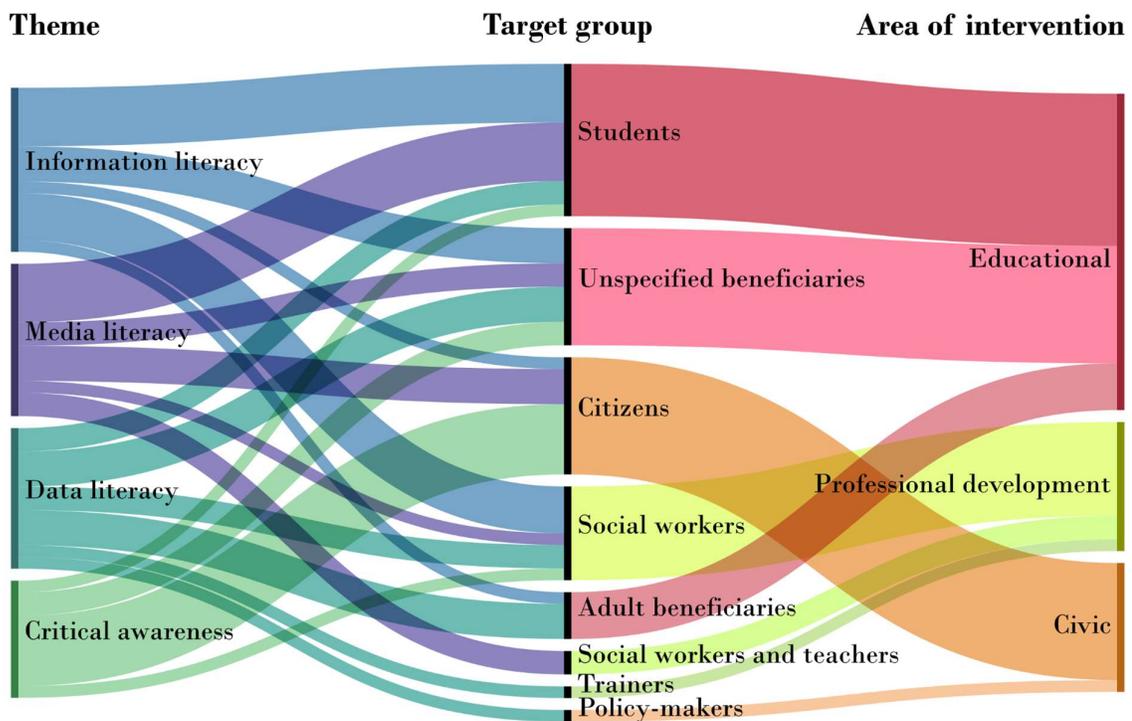


Figure 2. Educational needs, target groups and intervention's scale intercepted by MDLE approach

## Learning about data and conspiracy theories

Thematic analysis of the responses to the questionnaire prompt “Through the workshop I learn...” brought to the identification of five themes, namely 1) data understanding; 2) data understanding applied to CT; 3) CT; 4) critical observation; 5) collective reflection. Most themes explicitly deal with one or more key topics of the educational intervention, namely data (theme n. 1), and CT (theme n. 3) and/or their relations (theme n. 2). Overall, the answers of 8 respondents out of 11 relates to one of such themes. Table 2 illustrates the evolution of words associated with “data” before and after the workshop.

Table 2. *Words associated with “data” before and after the workshop*

ID	Before the workshop	After the workshop
P1	information	information, representation, perspective
P2	information, reflection, solutions	information, readings, interpretations
P3	evidence, reality, numbers	relative, sources, vision
P4	numbers, observations, examples	numbers, networking, organisation
P5	knowledge, analysis, frame	knowledge, information, use
P6	statistics, value, number	numbers, information, statistics
P7	information, numbers	database, numbers, high
P8	information, analysis, expanding	tool, analysis, research
P9	bank, delivered	collection, interpretation, dissemination
P10	understanding, knowledge, broadenings	knowledge, interpretation, reading
P11	private, official, formal	primary, secondary, qualitative

The theme *data understanding* indicates a critical thinking about data and datafication processes. Participants’ responses point to an initial critical awareness of data by recalling some key concepts or

reasonings of the workshop. For example, one social worker claimed to have learnt “the importance of the missing data” (P4) while another one stated to have learnt how to look at data through the four media concepts, namely language, representation, production and audience (P7).

The theme *data understanding applied to CT* includes accounts of learning in which understanding data serves the purpose of countering conspiracy theories. The answer “[I have learnt] the importance of reading and using data to dismantle conspiracy theories” (P2) is emblematic of this instrumental use of data literacy. However, this kind statement seems to suggest a basic understanding of the relationship between data doing and CT (“The importance of...”) rather than an actual ability to interpret and use data to question CT.

As for the theme *CT*, the participant’s telegraphic response – “[I have learnt] conspiracy theories” (P11) – is not sufficiently informative of how s/he make sense of her/his learning. Considering the contents of the workshop, this generic answer might refer to the basic understanding of CT, the discovery of a specific CT, or a more advanced knowledge of how CT are produced and disseminated online. Nevertheless, here the meaning of self-reported learning remains quite obscure.

The theme *critical observation* comprises participants’ statements on some observation skills of relevance in terms of media and visual literacy. One respondent values a multi-perspective taking: “[I have learnt] to observe from multiple angles” (P5). Another one, instead, points to a more aware way to look at media, that is, in participant’s words, learning “to observe a video or text more consciously” (P9).

The theme *collective reflection* was built on the single answer “[I have learnt] to pay special attention to the collective reflection on a particular topic” (P1). Although collective reflection can be seen as a crucial pedagogical strategy in both the MDLE approach and adult education more broadly this statement is not particularly informative of the specificities of the learning at stake of as it does not clarify neither the actors (e.g., educators, students, citizens, etc.) nor the topic of the collective reflection.

Further clues of what participants may have learnt can be found in the ways participants discursively construct data and CT by choosing specific words to be associated with these terms.

Starting from the assumption that texturing of the answers – and the related words’ choice – is integral to learning (Fairclough, 2011), responses were analysed to detect continuities and discontinuities in the ways of

representing and evaluating data and conspiracy theories before and after the workshop. Specifically, the present discourse analysis concentrates on the experiential and expressive value of the words (Fairclough, 1989). Experiential value reflects the way in which the writer represents her or his experience of the world whilst expressive value indicates the way in which the writer evaluates the aspect of reality it relates to.

Hence, representations and evaluations through words' choice are interpreted to uncover possible changes in participants' knowledge and beliefs about data and CT, as well as in the subject positions they occupy when they evaluate. From this discursive perspective, learning can be understood as shifts in ways of representing and being over time (Rogers, 2003). Consistently, our analysis focuses on the social languages from which the participants' words are drawn upon and how words' choice entails different positions in relation to CT.

Overall, both before and after the workshop the words associated with "data" continue to draw upon a specific social language<sup>3</sup> (Gee, 2011), that is scientific language. This is quite evident in Table 1, for example, in the reiteration of words such as information, numbers, analysis and statistics (see P 5, 6, 1, 2, 8, 10 and 4).

However, the vocabulary employed after the workshop also incorporates several new words widely used during the workshop to teach the basics of data literacy, particularly interpretation (P2, 9 and 10), collection and dissemination (P9), primary and secondary and qualitative, sources (P3). This change can be seen as an example of intertextuality (Fairclough, 1992) as the "new" lexical realisations echoes the more specialist technical terms used in the workshop. Here, intertextually can be interpreted as a sign of progress in learning about data as the use of terms derived from the scientific debate is indicative of the transition from "spontaneous knowledge" based on common sense to "scientific knowledge" (Vygotsky, 1978). On the other hand, the new data vocabulary seems to testify the acquisition of a more "scientific" metalanguage rather than a more critical understanding of data and related economic and socio-cultural processes.

An insight on the critical understanding of data can be seen in a more frequent use of the word interpretation and other semantically analogous terms (readings,

vision and perspective) after the workshop. In this regard, some paradigmatic cases of rewording are the integration of the word information with representation and perspective (P1); the replacement of the words database, delivered and entry with collection, interpretation, and dissemination (P9) and the disappearance of word evidence or reality. Although data are constantly depicted through a scientific language, the new linguistic choices contributes "to move from a highly empiricist repertoire to a more contingent one" (Potter & Wetherell, 1987, p. 150), that is a from a view of data as an neutral medium through which empirical phenomena make themselves felt to an understanding of data as a medium of representation of the reality, dependent on contingent processes of production, circulation and interpretation. In this respect, the rewording seems to point to the emergence of a renewed understanding of data as systems of representation of the reality that need to be interpreted.

In general, words associated with data have scarce expressive value. Words with expressive value – broadenings (P10) and solutions (P2) – can be found only before the workshop. After the workshop, no word is expressive of a clear evaluation of data, neither in positive nor negative terms. Interestingly, words expressing a negative evaluation of data (e.g., surveillance) are absent from both the old and new vocabulary. The disappearance of any expressive value from the new vocabulary could be read as indicative of a more careful positioning in relation to data that are ultimately not beneficial or harmful per se or, considering that most participants were not familiar with data literacy, even as uncertainty or prudence to evaluate data.

Table 3 displays the lexical shifts in words related to "conspiracy theories" pre- and post-workshop. In general, both before and after the training the chosen words to depict CT can be traced back to one main recognizable social language, specifically political language. For example, the reiterated words populism (P6) and suprematism (P4) clearly belong to the language of politics. Nevertheless, after the workshop an increased use of the language of Media Studies has been detected, for example in the replacement of the words such as denial and lies with "disinformation" which became – along with "distortion" – the more frequent

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<sup>3</sup> The term "social language" applies to specific varieties of language used to enact specific identities and carry out specific sorts of practices or activities (Gee, 2011).

word associated to CT after the workshop. This shift from “everyday words” to a more specialist media language coupled with political language can be interpreted mostly as a sign of meta-language acquisition about the mediatization of conspiracy theories, as well as a political framing of CT.

Table 3. *Words associated with “conspiracy theories” before and after the workshop*

ID	Before the workshop	After the workshop
P1	reliability, unreliability, confusion	distortion, ambiguity, fiction
P2	fear, misunderstanding, unawareness	fear, distortion, disinformation
P3	fake, uncertainty, internet	strategy, internet, audience
P4	QAnon, suprematism, populism	obcurantism, suprematism, politics
P5	uselessness, self-absolution, internet	self-absolution, cheating, inactivity
P6	populism, illiteracy, anger	populism, violence, anger
P7	terrorism, denial, war	war, disinformation, money
P8	deviation, denial, alteration	instrumentalisation, means, alteration
P9	ignorance, disinformation, doubt	disinformation, mistification, advantage
P10	Ignorance, lies, curiosity	falsehood, disguise, deflect
P11	political, social, natural	groups, events, social

Traces of learning about CT, instead, can be seen in the replacement of words such as ignorance, unawareness, insecurity, misunderstanding and confusion with distortion, deviation, mystification, strategy and personal profit (P 1, 2, 3, 9, 10). Indeed, this rewording seems to re-signify CT, specifically from an individual, cognitive or psychological problem of the individuals (Cibik & Hardos, 2020) to a socio-political phenomenon.

As for the expressive value of the chosen words, a negative evaluation of CT is quite evident in the vocabularies used both before and after the workshop. In this regard, the representation of CT as an

“undesirable phenomenon” is constructed through the repetition of words such as disinformation, fear, war and rage, sometimes coupled with populism and suprematism (P 6 and 4). A closer look at the rewording after the workshop suggests how sometimes this negative evaluation is even reinforced across time. For example, the only two words with a positive connotation (curiosity and reliability) were indicated only before workshop (P 1 and 10). Interestingly, also before the workshop these words were present along with other words with opposite meanings (antinomies), specifically reliability and unreliability, curiosity and falsehood. Moreover, also the non-judgemental word “doubt” is replaced with more assertive and judgmental words (disinformation, mystification and personal profit) (P9). The disappearance of any antonym between words or non-judgemental words after the workshop results in non-dialogical texts. These latter suggest a weaker orientation toward difference, which is considered a constraint for the emergence of learning (Fairclough, 2011), as well as for addressing conspiracy theories in the classroom as the concept of “agnostic tolerance” (Cibik & Hardos, 2020) seems to imply.

### **Implications of the study for the development of MDLE to address conspiracy theories**

Educators’ educational needs and their reconsideration of key concepts from the workshop (data and CT), allow us to provide an initial evaluation of the MDLE approach and its potential developments.

In general, a good response is observed in terms of the pedagogical relevance of the intervention. The educational gaps identified by the social workers for their own professional category, as well as for the beneficiaries and the general public, reflect their perceived interest and importance of discussing these issues for the different segments of society. Indeed, a critical dimension of the approach to thinking data (Carmi et al., 2020; D’Ignazio, 2017) was detected through our analysis. From the perspective of social workers, adolescents need guidance in the use and evaluation of media to prevent the spread of misinformation (Kahne & Bowyer, 2017), however, this need is not confined to them, extending instead to themselves and the general public (McDougall et al., 2018). The MDLE approach proposed in this study seems to support the achievement of the workshop’s educational objectives, as well as to respond effectively to the different needs and requirements of the social workers involved. In sum, in the face of a complex

educational landscape and a highly diversified target audience, the results highlight a progressive stratification of potential educational objectives, ranging from critical awareness to media and data literacy with which it is also possible to address the issue of conspiracy theories, but in the background of increased aware and critical civic participation (Buckingham, 2020). This result is consistent with a progressive approach to data citizenship (Carmi et al., 2020), starting with a paradigm shift from understanding and critically observing phenomena to concrete actions such as educational interventions and data activism. An implication of these findings for the development of MDLE is its strategic use to address progressively CT without focusing on the CT first, which is usually discouraged as it may inadvertently reinforce it (UNESCO, 2022).

Examining conspiracy theories through the lens of data and media literacy led the study participants to re-evaluate and contextualise certain past preconceptions and considerations. This is consistent with the main objective of the MDLE approach to foster a critical and context-aware understanding of the discussed topics.

As for learning about data, the identification of “data understanding” as the prevalent theme, the use of a more accurate vocabulary in relation to data and the renewed critical understanding of data as systems of representation of reality detected through discourse analysis seem to confirm a quite clear improvement of participants’ data literacy.

As far as critical learning about CT is concerned, the results are more mixed. Indeed, only a partial alignment between the second prevalent theme *data understanding applied to CT* (theme analysis) and a more critical understanding of CT (discourse analysis) was detected. On the one hand, following the MDLE workshop participants learnt to reframe CT as a socio-political phenomenon rather than as an individual, cognitive or psychological problem of the individuals (Cibik & Hardos, 2020). In this regard, the multidimensionality of the MDLE framework coupled with a strong concern for social/data justice might have fostered a wider socio-technological and political contextualisation of CT. On the other hand, the inherently negative evaluation of CT might represent a constraint in addressing CT in the classroom because it risks preventing any open democratic discussion (Räikkä, 2018) about them. In this respect, the negotiation of different political and epistemological value systems in the educational settings could be a crucial challenge to address CT in the future.

## CONCLUSIONS

The post-pandemic context and new technological and socio-political conditions make CT more available to different audiences and thus it is a timely issue that is closely connected to education and the school environment (Dyrendal & Jolley, 2020). Of course, this does not suggest that the sole responsibility for addressing the dangers of CT lies with education. On the contrary, an effective response is likely to require combined regulatory, social, technological, and educational measures (Buckingham, 2019; Wardle & Derakhshan, 2017). In this regard, it is crucial to emphasise that MDLE should not be seen as a “solution” to the dangers of CT. Instead, it should be regarded as a dynamic pedagogical strategy to address CT from a multiple perspective (epistemic, cognitive, socio-cultural, economic, political) informed by a social justice-oriented form of critical thinking.

The conclusions drawn from the study suggest a pedagogical and social relevance of MDLE, providing an adequate foundation for its integration into the media education practices to address the proliferation of CT. The participants in the study show a better understanding of the data and the way they represent reality, through the use of more accurate language and a new critical understanding of data and CT. Moreover, social workers prioritised fundamental literacies whilst CT were seldom mentioned concerning educational and professional development needs for both adults and young people.

Another reflection pertains to the limitations of the study, primarily the small and non-representative sample. However, this limitation provided an opportunity to capture a target group that is often overlooked in media education research, such as social workers. This has offered a unique chance to explore the perspectives and needs of educators working with traditionally excluded groups and communities, contributing to the development of a more inclusive and comprehensive approach suitable for various contexts.

Ultimately, MDLE emerges as a valuable resource in promoting critical awareness and media data literacy. Its targeted and contextualised application can serve as an effective tactic to tackle CT while fostering a more informed and engaged civic participation. To achieve its effective implementation, careful consideration of educational contexts is essential, tailoring MDLE to meet the specific needs of recipients. Only through systematic evaluation of its effectiveness and adaptability can we develop a robust and constructive

pedagogical strategy to confront the emerging challenges in the onlife public sphere.

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#### REFERENCES

- Atenas, J., Havemann, L., & Timmermann, C. (2023). Reframing data ethics in research methods education: a pathway to critical data literacy. *International Journal of Educational Technology in Higher Education*, 20(1), 1-27. <http://dx.doi.org/10.1186/s41239-023-00380-y>
- Barzilai, S., & Chinn, C. A. (2020). A review of educational responses to the “post-truth” condition: Four lenses on “post-truth” problems. *Educational Psychologist*, 55(3), 107-119. <https://doi.org/10.1080/00461520.2020.1786388>
- Bateman, J. A. (2021). What are digital media?. Discourse, *Context & Media*, 41, 100502.
- Beene, S., & Greer, K. (2021). A call to action for librarians: Countering conspiracy theories in the age of QAnon. *The Journal of Academic Librarianship*, 47(1), 102292. <http://doi.org/10.1016/j.acalib.2020.102292>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, 3(2), 77-101.
- Brotherton, R. (2015). *Suspicious Minds: Why We Believe Conspiracy Theories*. Bloomsbury.
- Buckingham, D. (2019). Teaching media in a ‘post-truth’ age: Fake news, media bias and the challenge for media/digital literacy. *Cultura y Educacion*, 31(2), 213-231. <https://doi.org/10.1080/11356405.2019.1603814>
- Buckingham, D. (2003). *Media Education: Literacy, Learning and Contemporary Culture*, Polity Press.
- Buckingham, D. (2020). *The Media Education Manifesto*. John Wiley & Sons.
- Carmi, E., Yates, S. J., Lockley, E., & Pawluczuk, A. (2020). Data citizenship: rethinking data literacy in the age of disinformation, misinformation, and malinformation. *Internet Policy Review*, 9(2), 1-22. <http://dx.doi.org/10.14763/2020.2.1481>
- Cassam, Q. (2019). *Conspiracy Theories*. Polity Press.
- Chinn, C. A., & Rinehart, R. W. (2016). Epistemic cognition and philosophy: Developing a new framework for epistemic cognition. In J. A. Greene, W. A. Sandoval, & I. Bråten (Eds.), *Handbook of epistemic cognition* (pp. 460–478). Routledge.
- Cibik, M., & Hardoš, P. (2022). Conspiracy theories and reasonable pluralism. *European Journal of Political Theory*, 21(3), 445-465. <http://dx.doi.org/10.1177/1474885119899232>
- Colborne, A., & Smit, M. (2020). Characterizing disinformation risk to open data in the post-truth era. *Journal of Data and Information Quality (JDIQ)*, 12(3), 1-13.
- Craft, S., Ashley, S., & Maksl, A. (2017). News media literacy and conspiracy theory endorsement. *Communication and the Public*, 2(4), 388-401. <https://doi.org/10.1177/2057047317725539>
- COMPACT Education Group (2020). *A guide to conspiracy theories*. Cost (European cooperation in science and technology).
- Dencik, L., Hintz, A., Redden, J., & Treré, E. (2019). Exploring data justice: Conceptions, applications and directions. *Information, Communication & Society*, 22(7), 873-881. <https://doi.org/10.1080/1369118X.2019.1606268>
- Davey, J., & Ebner, j. (2019). *The ‘Great Replacement’: the violent consequences of mainstreamed extremism*. Institute for Strategic Dialogue. <https://www.isdglobal.org/isd-publications/the-great-replacement-the-violent-consequences-of-mainstreamed-extremism/>
- D’Ignazio, C. (2017). Creative data literacy: Bridging the gap between the data-haves and data-have nots. *Information Design Journal*, 23(1), 6-18. <http://dx.doi.org/10.1075/idj.23.1.03dig>

- Dyrendal, A., & Jolley, D. (2020). Conspiracy theories in the classroom: Problems and potential solutions. *Religions, 11*(10), 494.
- Fairclough, N. (1989). *Language and power*. Longman.
- Fairclough, N. (1992). Intertextuality in critical discourse analysis. *Linguistics and Education 4.3*, 269-293. [https://doi.org/10.1016/0898-5898\(92\)90004-G](https://doi.org/10.1016/0898-5898(92)90004-G)
- Fairclough, N. (2011). Semiotic Aspects of Social Transformation and Learning. In R. Rogers *An introduction to critical discourse analysis in education*. 2nd Edition (pp. 119-127). Routledge.
- Gee, P. (2014). *How to do Discourse Analysis A Toolkit*. 2nd edition. Routledge.
- Grosfoguel, R. (2006). World-systems analysis in the context of transmodernity, border thinking, and global coloniality. *Review (Fernand Braudel Center)*, 167-187.
- Guan, T., Liu, T., & Yuan, R. (2021). Facing disinformation: Five methods to counter conspiracy theories amid the COVID-19 pandemic. *Comunicar, 29*(69), 71-83. <https://doi.org/10.3916/C69-2021-06>
- Hammer R., & Kellner, D. (2009). *Media/Cultural Studies: Critical Approaches*. Peter Lang Publishing.
- Hannah, M. N. (2021). A conspiracy of data: QAnon, social media, and information visualization. *Social Media+ Society, 7*(3), 20563051211036064.
- Harambam, J. (2021). Against Modernist Illusions: Why We Need More Democratic and Constructivist Alternatives to Debunking Conspiracy Theories. *Journal for Cultural Research, 25*(1), 104-122. <https://doi.org/10.1080/14797585.2021.1886424>
- Hobbs, R. (2017). Teach the conspiracies. *Knowledge Quest, 46*(1), 8-24.
- Hobbs, R. (2010). *Digital and media literacy: A plan of action*. Aspen Institute and Knight Foundation. [https://www.knightfoundation.org/media/uploads/publication\\_pdfs/Digital\\_and\\_Media\\_Literacy\\_A\\_Plan\\_of\\_Action.pdf](https://www.knightfoundation.org/media/uploads/publication_pdfs/Digital_and_Media_Literacy_A_Plan_of_Action.pdf)
- Hobbs, R. (2020). *Mind over media: Propaganda education for a digital age*. W.W. Norton and Company.
- Jeong, S. H., Cho, H., & Hwang, Y. (2012). Media literacy interventions: A meta-analytic review. *Journal of communication, 62*(3), 454-472. <http://dx.doi.org/10.1111/j.1460-2466.2012.01643.x>
- Kahne, J., & Bowyer, B. (2017). Educating for democracy in a partisan age: Confronting the challenges of motivated reasoning and misinformation. *American educational research journal, 54*(1), 3-34. <http://dx.doi.org/10.3102/0002831216679817>
- Kellner, D., & Share, J. (2007). Critical media literacy, democracy, and the reconstruction of education. In D. Macedo & S.R. Steinberg (Eds.), *Media literacy: A reader* (pp. 3-23). Peter Lang Publishing.
- Kellner, D., & Share, J. (2019). *The Critical Media Literacy Guide. Engaging Media and Transforming Education*. Brill sense.
- Lazer, D. M. J., Baum, M. A., Benkler, Y., Berinsky, A. J., Greenhill, K. M., Menczer, F., Metzger, M. J., Nyhan, B., Pennycook, G., Rothschild, D., Schudson, M., Sloman, S. A., Sunstein, C. R., Thorson, E. A., Watts, D. J., & Zittrain, J. L. (2018). The science of fake news. *Science, 359*(6380), 1094-1096. <https://doi.org/10.1126/science.aao2998>
- Lewandowsky, S., & Cook, J. (2020). *The Conspiracy Theory Handbook*. <http://sks.to/conspiracy>
- Mayring, P. (2019). Qualitative Content Analysis: Demarcation, Varieties, Developments. *Forum Qualitative Sozialforschung/Forum: Qualitative Social Research, 20*(3). <https://doi.org/10.17169/fqs-20.3.3343>
- McDougall, J., Zezulkova, M., Van Driel, B., & Sternadel, D. (2018). *Teaching media literacy in Europe: evidence of effective school practices in primary and secondary education, NESET II report*. Publications Office of the European Union.
- Mihailidis, P. (2019). *Civic media literacies. Re-Imagining Human Connection in an Age of Digital Abundance*. Routledge.
- Mihailidis, P & Viotty, S. (2017). Spreadable Spectacle in Digital Culture: Civic Expression, Fake News, and the Role of Media Literacies in “Post-Fact” Society. *American Behavioral Scientist 2017, 61*(4), 441-454.
- Mihailidis, P., Ramasubramanian, S., Tully, M., Foster, B., Riewestahl, E., Johnson, P., & Angove, S. (2021). Do media literacies approach equity and justice?. *Journal of Media Literacy Education, 13*(2), 1-14. <https://doi.org/10.23860/JMLE-2021-13-2-1>
- Morse, J. M. (2010). Simultaneous and sequential qualitative mixed method designs. *Qualitative inquiry, 16*(6), 483-491.
- Nazar, S., & Pieters, T. (2021). Plandemic Revisited: A Product of Planned Disinformation Amplifying the COVID-19 “infodemic”. *Frontiers in Public Health, 9*. <https://10.3389/fpubh.2021.649930>

- Noula, I. (2018). *I do want media literacy...and more. A response to danah boyd*.  
<https://blogs.lse.ac.uk/medialse/2018/06/21/i-do-want-media-literacy-and-more-a-response-to-danah-boyd/>
- Nussbaum, M. C. (2011). Perfectionist liberalism and political liberalism. *Philosophy & public affairs*, 39(1), 3-45. <https://doi.org/10.1111/j.1088-4963.2011.01200.x>
- O'Neil, C. (2017). *Weapons of math destruction: How big data increases inequality and threatens democracy*. Crown.
- Onuoha, M. (2018). On missing data sets. In International Workshop On Obfuscation: Science, Technology, And Theory (p. 38).
- Pangrazio, L., & Selwyn, N. (2019). 'Personal data literacies': A critical literacies approach to enhancing understandings of personal digital data. *New Media & Society*, 21(2), 419-437.  
<http://dx.doi.org/10.1177/1461444818799523>
- Peters, M. (2020). Editorial: On the Epistemology of Conspiracy. *Educational Philosophy and Theory*, 53(14), 1413-1417.  
<https://doi.org/10.1080/00131857.2020.1741331>
- Potter, W. J. (2004). *Theory of media literacy: A cognitive approach*. SAGE.
- Potter, J. & McDougall, J. (2017). *Digital Media, Education and Culture: Theorising Third Space Literacy*. Palgrave MacMillan.
- Potter, J., & Wetherell, M. (1987). *Discourse and social psychology: Beyond attitudes and behaviour*. Sage Publications, Inc.
- Räikkä, J. (2018). Conspiracies and Conspiracy Theories: An Introduction. *Argumenta*, 3(2), 205-216.
- Ranieri, M., & Fabbro, F. (2016). Questioning discrimination through critical media literacy. Findings from seven European countries. *European Educational Research Journal*, 16(1), 1-18.
- Rega, I., & McDougall, J. (2023), What are We Thinking about when we Talk now about Media Literacy And / For Citizenship?, *Scholé. Rivista di educazione e studi culturali*, 61(2), 47-66.
- Rogers, R. (2003). *A critical discourse analysis of family literacy practices*. Lawrence Erlbaum.
- Rogers, R. (2011). *An introduction to critical discourse analysis in education (2nd ed.)*. Routledge.
- Saltman, K. J. (2020). *Conspiracy against Theory Superagents, Conspirators, and the Educational Legacies of Positivism. Understanding Adorno, Understanding Modernism*. Bloomsbury Publishing.
- Srnicek, N. (2016). *Platform capitalism*. John Wiley & Sons.
- Sunstein, C. R., & Vermeule, A. (2009). Conspiracy Theories: Causes and Cures. *The Journal of Political Philosophy*, 17, 202-227.  
<https://doi.org/10.1111/j.1467-9760.2008.00325.x>
- Uscinski, J. (2018). The Study of Conspiracy Theories. *Argumenta*, 3(2), 233-245.
- Uscinski, J. E., & Parent, J. M. (2014). *American Conspiracy Theories*. Oxford University Press.
- UNESCO. (2022). *Addressing conspiracy theories: what teachers need to know*. United Nations Educational, Scientific and Cultural Organization.  
<https://doi.org/10.54675/QQAE9102>
- Van Prooijen, J.-W. (2018). *The Psychology of Conspiracy Theories*. Routledge.
- Van Audenhove, L., Van den Broeck, W., & Mariën, I. (2020). Data literacy and education: Introduction and the challenges for our field. *Journal of Media Literacy Education*, 12(3), 1-5.  
<http://dx.doi.org/10.23860/JMLE-2020-12-3-1>
- Vraga, E. K., & Tully, M. (2015). Effectiveness of a Non-Classroom News Media Literacy Intervention Among Different Undergraduate Populations. *Journalism & Mass Communication Educator*, 71(4), 1-13.  
<http://dx.doi.org/10.1177/1077695815623399>
- Vraga, E. K., & Bode, L. (2017). Leveraging institutions, educators, and networks to correct misinformation: A commentary on Lewandosky, Ecker, and Cook. *Journal of Applied Research in Memory and Cognition*, 6(4), 382-388.  
<https://doi.org/10.1016/j.jarmac.2017.09.008>
- Vygotsky, L. (1978). *Mind and Society*. Harvard University Press.
- Watt, D. (2012). The urgency of visual media literacy in our post-9/11 world: of Muslim women in the print news media. *Journal of Media Literacy Education*, 4(1), 32-43.
- Wardle, C., & Derakhshan, H. (2017). *Information disorder: Toward an interdisciplinary framework for research and policy making*. Council of Europe policy report DGI(2017)09.  
<https://firstdraftnews.com/wp-content/uploads/2017/11/PREMS-162317-GBR-2018-Report-de%CC%81sinformation-1.pdf?x29719>

- Will, M. (2020). *What Teachers Should Do When QAnon Conspiracy Theories Come to Class*. EdWeek. <https://www.edweek.org/education/what-teachers-should-do-when-qanon-conspiracy-theories-come-to-class/2020/11>
- Wuyckens, G., Landry, N., & Fastrez, P. (2022). Untangling media literacy, information literacy, and digital literacy: A systematic meta-review of core concepts in media education. *Journal of Media Literacy Education, 14*(1), 168-182. <http://dx.doi.org/10.23860/JMLE-2022-14-1-12>
- Yin, R. K. (2018). *Case study research and applications: Design and methods*. Sage.
- Zembylas, M. (2021). Moving beyond debunking conspiracy theories from a narrow epistemic lens: ethical and political implications for education. *Pedagogy, Culture & Society, 31*(4), 741-756. <https://doi.org/10.1080/14681366.2021.1948911>
- Zollo, F., et al. (2017). Debunking in a world of tribes. *PLOS ONE, 12*(7), e0181821. <http://dx.doi.org/10.1371/journal.pone.0181821>
- Zonis, M., & Joseph, C. M. (1994). Conspiracy thinking in the Middle East. *Political Psychology, 15*, 443-459. <https://doi.org/10.2307/3791566>