Roles of journalists in media literacy initiatives: trainees and trainers. Continuity, collaboration, and sustainability of media literacy trainings to mitigate disinformation in Portugal

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Abstract

This paper aims to foster the debate on Media Literacy (ML) projects with a focus on disinformation. We analyse initiatives carried out locally in Portugal, considering the principles of ML, the necessary development of skills and competences, as well as the importance of the journalistic action and the consequences of platformization on professional practices. Mixed methods are applied to collect and analyse quali-quantitative data from ML projects and trainings involving multiple stakeholders. Inquiring three independent samples (editors-in-chief, journalists trained in ML, teachers trained by journalists in ML) the research questions address the importance of journalists' participation in ML within different roles, as well as the training quality and projects' assessment. Findings show a lack of specialised knowledge, practical tools, and continuous training as well the need for more tailor-made programs and evaluation resources that allow for

the creation and promotion of more effective ML training programs. This contribution is therefore two-folded: a) it aims to enhance the operational aspects of media training in the field, based on a continuous improvement logic and b) it explores a specific evaluative example on how the feedback from training can help improve research efforts in the media literacy field. Conclusions systematise the assumptions, stemming from an articulation of ML stakeholders' perspectives, that guide the implementation, improvement, and assessment of training: collaboration, continuity, and sustainability. These inductive categories allow for the development of theoretical-practical dimensions of the processes for evaluating innovative training against disinformation which may in turn have an inoculation role in the wider public sphere. We suggest improvements to the methodological-operational processes to involve journalists, to do follow-up, assessment, and implementation of wider training projects, contributing to applied research.

Keywords

Journalists; Journalism; Training; Disinformation; Media literacy; Collaboration; Continuity; Sustainability; Teachers; Assessment; Portugal.

1. Introduction

Disinformation is a transnational phenomenon whose intensive circulation and global social effects make research in this field increasingly relevant (**Bennet**; **Livingston**, 2018; **Ekström**; **Lewis**; **Westlund**, 2020; **Madrid-Morales**; **Wasserman**, 2022; **Ecker** *et al.*, 2022).

Cardoso (2023) sees disinformation as a by-product of our communication models, affected by the changes in network communication and by the increasing usage of social media as sources of information.

Current communication crisis is not only reflected in the way citizens communicate but is also revealed by the problematic phenomena that characterise the professional media practices and the struggle to find sustainable business models, enhance news' quality and the audiences' trust on news (**Salaverría** *et al.*, 2019; **Deuze**; **Witschge**, 2020).

Social media platforms allow mass self-communication (**Castells**, 2010), in which several people can communicate autonomously and directly, in a self-mediated fashion, with a large audience, without editing or checking the published information, except for platform guidelines. It is in this context that disinformation increases and changes.

Thus, from the standard idea of a factual journalistic authenticity, stem a new conceptualization highlighting the societal change towards a more individualised aspect of authenticity (**Cardoso**, 2023).

Traditional journalistic procedures, organisational and business models of the news media industry are struggling even harder to adapt, while new challenges arise in adjusting journalistic practices to new communication frameworks in which productivity, time pressure, reach and audience engagement turn into priorities, and the truth itself becomes an abstract concept.

Understanding disinformation phenomenon requires a cross-sectional approach, in terms of expertise, social spaces, territorial geographies, as well as involved agents and stakeholders. It is a valuable approach to address it through multiple types of actions, including governmental, legal, technological, and educational ones (**Heat**, 2021; **Caled**; **Silva**, 2021).

From 2015 to 2020, the European Union invested EUR 50 million in measures to fight disinformation (**Jerónimo**; **Sánchez-Esparza**, 2022). It is within this framework that the *European Digital Media Observatory* (*EDMO*) was created as an autonomous body by the *European Commission*, evidencing high concern about identifying risks and seeking solutions that may lead to best practices at local level, being applied elsewhere.

Regulation and technological innovations are frontline approaches to reduce the dissemination of disinformation, however Media Literacy (ML) interventions and training are essential to enact durable solutions, to empower citizens and to enable them to identify, understand, consume, produce and share media contents and news in responsible, aware and informed ways.

Literature on ML is vast and extensively analyses initiatives that can, but not necessarily, focus on specific activities to fight disinformation (**Frau-Meigs**, 2022). Research points to students and educators as main target groups of such ML initiatives (**Pita** *et al.*, 2022), while other groups like migrants, elderly people, NEET, LGBTQI+, minoritized communities or specialized workers are more excluded (**Zanaib**; **Mansoor**; **Bukhari**, 2022; **Lamartine**; **Cerqueira**, 2022).

> This paper discusses the transformation of the role that journalists play in the post-truth era, as well as their potential for change, acquiring skills that allow them to reinforce their role in checking information

During the last 15 years in Europe, many ML practices and actions were undertaken at national or regional levels and were accurately mapped using multiple classification indicators (**Chapman**; **Insight**, 2016). In much cases evidence points to lacking components designed to reduce people's vulnerability to fake news.

Research narrowed on ML trainings oriented to fight disinformation analyses and classifies projects to understand to what extent they explicitly include components of journalistic work, the comprehension of the processes of fake news' creation and detection, as well as to what extent the pedagogic actions are based on scientific evidence (**Dumitru**; **Ivan**; **Loos**, 2022) highlighting the importance of empowering citizens of different social categories using educational means. Further research is needed to investigate and assess the methodologies adopted to implement and evaluate practical and specialized ML training projects, that aim to support professionals in developing appropriate and effective responses to disinformation.

ML projects and initiatives conducted in Portugal are mapped through multiple perspectives (**Bobrowicz-Campos** *et al*., 2021; **Cardoso** *et al*., 2023; **Celot**, 2015; **Chapman**; **Insight**, 2016) and some are pointed as pioneer for its features of implementation (**Frau-Meigs**; **Velez**; **Michel**, 2019). Even though the literature merging the debates about ML, training systems and disinformation is incipient, and highlights that is necessary to clarify the need and roles of journalists in ML (**Tomé** *et al*., 2023), and the effect of disinformation among journalists.

This research intends to understand the challenges for journalists' professional changing profiles and to analyse the priorities needed to deal with disinformation and clarify how these challenges and needs relate to their actual roles in ML projects.

We collect and analyse qualitative and quantitative data about ML projects focused on disinformation, encompassing training interventions to map the contents', the methodologies and the perceptions of participants.

The paper aims to answer to the following research questions:

RQ1 Can Media Literacy training serve as an actionable tool for journalists and newsrooms to counter internal and external pressure inducing factors?

RQ2 Which methodologies can be used by journalists and journalism experts to function as trainers and inoculation agents?

RQ3 Which themes, tools and assessment dimensions can be implemented in order to improve the quality of training?

By articulating data from different and independent samples (editors in-chief, journalists trained in ML, teachers trained by journalists in ML) we conclude that there is a lack of specialised knowledge, practical tools, and continuous training as well the need for evaluation resources that allow for the creation and promotion of more effective ML training programs.

Our findings suggest that:

a) journalists in Portugal play multiple roles within ML training system, being (too rarely) trainees, as well as called to participate as trainers and mentors of educational project, with teachers and students;

b) the integration of journalists and journalism's professionals in ML training systems is a pivotal process in bridging the gap between the growingly challenged journalistic practice, the competencies and needs of different groups of trainers and trainees;

c) the usage of permanent evaluation structures enables the creation of a continuous improvement logic to ML training.

Due to the rising pace and complexity of disinformation phenomena, both the permanent adaptation of training offers and the centrality of journalism practice and professionals in ML training is of the utmost importance to ensure the relevance.

It is essential to ensure that the education of journalists is more relevant and targeted as possible, presenting professionals with overall ecosystemic trends but also answering the specific challenges trainees face on a daily basis. We argue that establish collaboration, continuity and sustainability allow for the development of theoretical-practical processes for evaluating training against disinformation.

2. Literature review

2.1. Disinformation

Disinformation is part of a broader conceptual context for information disorders, which comprises three types of misrepresented information:

- disinformation, false information intentionally created for profit or to harm someone;
- "misinformation", false information that is shared or disseminated by people who believe it is reliable information and, therefore, not intended to cause harm;
- "malinformation", information based on real facts but intended to denigrate the reputation of a person or entity (**Derakhshan**; **Wardle**, 2017).

The *European Commission* defines disinformation as

> "an ecosystem of production, propagation and consumption of false, inaccurate or misleading information for profit or seeking to cause public harm" (*European Commission*, 2018, p. 10).

Incorrect information and disinformation are organised into seven types, divided into two levels depending on the damage caused (**Wardle**, 2019a; 2020) or by degrees depending on intention and damage (**Frau-Meigs**, 2019).

Other relevant contributions distinguish between fake news' creation and dissemination processes (**Ecker** *et al*., 2022; *OECD*, 2020) clarifying that while creation is always intentional, dissemination may not be (**Tsfati** *et al.*, 2020).

We adopt the concept of disinformation as a totally or partially false information, whose main features are to be demonstrably misleading, be intentional, being moved by financial, political and socio-economical motivations and have the potential to disrupt (**Wardle**, 2020; **Romero-Walker**, 2021; **Jerónimo**; **Sánchez-Esparza**, 2022).

Disinformation is therefore a multifaceted issue which has political, economic, social, cultural and technological effects and requires different and integrated and ecosystemic responses (**Salaverría**; **León**, 2022).

Literature proposes typologies of interventions (**Caled**; **Silva**, 2022) and actions (**Heath**, 2021)

- Governmental, legal and regulatory action include national and international measures of drafting and passing laws and policies;
- Educational action includes measures to increase levels of media literacy, in formal and informal contexts;
- Journalistic action focuses on fact-checking within media organisations, as well as by external entities;
- Technological action involves improving technologies that detect disinformation in online platforms;
- Scientific action focuses on the effectiveness of science communication, so that scientific knowledge is accessible to as many citizens as possible.

According to **Frau-Meigs**, within the democratic societies' context the

> "information disorders should not be fought with 'hard legislation' (which might lead to censorship) but rather 'soft' and 'smart' actions (guidelines, codes of good conduct, best practices), together with transparency, accountability, proportionality and revision mechanisms. As a result, fact-checking has emerged as the new response from both mass and social media while digital media and information literacy appears as the favourite solution from all sectors" (2019 p. 18).

2.2. Journalistic action

The journalistic action is based on two principles in democratic societies: the diversity of journalistic information media functions as a mean of information self-control, while media and journalists performed gatekeeping functions (**Deuze**; **Witschge**, 2020).

The process of producing journalistic information implies checking facts, using reliable sources for confirmation, and selecting published content. This does not totally exempt the production process from errors, yet it does prevent them (**Caled**; **Silva**, 2022).

Until the development and expansion of social media platforms, and the transformation of information and communication model (**Castells**, 2010; **Cardoso**, 2023) the traditional journalistic model worked effectively. With the exponential growth of information circulating on social media and of the number of producers, disseminators, and consumers, even if journalists had maintained the role of gatekeepers in relation to the information that the media publish, other measures are required for journalism and journalists to adapt.

The intersection of the disinformation phenomenon and journalism practice in mainstream and professional media outlets has become a critical area of study in contemporary communication research. As information dissemination has evolved with the advent of digital technologies, understanding the theoretical underpinnings of disinformation and its impact on journalistic norms is crucial. This article aims to explore the theoretical background that underlies the complex relationship between the disinformation phenomenon and journalism practice.

Contemporary challenges posed by platformization (**Van-Dijck**; **Poell**; **De-Waal**, 2018; **Poell**; **Nieborg**; **Duffy**, 2023) and the crisis of truth and authenticity shows that journalists themselves are not risk-free, despite being aware of the processes of producing news, the nature of news, and the subjective nature of news demand. Having journalistic literacy does not necessarily imply that they are more insightful about the fake news they are exposed to (**Jones-Jang**; **Mortensen**; **Liu**, 2021).

Scholars deeply analysed journalistic practices and careers, daily routines, deontological and qualitative standards, tools and protocols for fact-checking, verification and rectification (**Deuze**; **Witschge**, 2020; **Salaverría** *et al.*, 2019).

More broadly, scholars, discussing the causes and consequences of disinformation spread in relation to journalism's practices and industry, illustrate the contextual relevance of labour issues, business model and funding system, as well as audience trust in journalism to the phenomenon (**Cardoso**, 2023).

Journalists' trainings are essential means to warrant to professional safely ways to do their job (**Høiby**; **Garrido**, 2020), deserving continuous update to innovation and capacity building, to manage image search, to do social media verification and using new software and techniques.

The relevance and usefulness of training and good work conditions on above mentioned aspects are reflected by journalists' perceptions, namely when professionals point to fact-checking as an element that restores credibility and social trust in regional media (**Rodríguez-Pérez**; **Rojano**; **Magallón-Rosa**, 2021), or through discussion or protest for better work conditions to ensure their dignity, rights and also the best service for their audiences (**Moreno-Castro**; **Crespo**, 2022).

Contemporary challenges for media professionals are about adaptation to new hyper-connected, multi-platform, algorithmically and generative AI-powered realities, embraced aiming to maintain relevance, attention and sustainability of journalistic practices, journalism's business and news media industry.

Scholars criticise when the fact-checking operations are limited and uniquely attached to journalistic environment, because

> "(journalists) still behave very much in a linear and vertical manner rather than in a multilevel networked manner that would also take into account distributed communities of transmission and viral propagation" (**Frau-Meigs**, 2019 p. 20).

The current debate crosses issues like the relevance and impact of professional life-long training, update of ML competences and the journalists' role and capacities in maintaining a connective role with publics, stakeholders and wider society.

In Portugal, half of the 485 journalists who participated in a survey consider that journalists themselves are agents of disinformation (**Jerónimo**; **Sánchez-Esparza**, 2022). The study "The Impact of Disinformation on the Media Industry in Spain and Portugal" (**Moreno-Castro**; **Crespo**, 2022) reveals that a large majority of interviewed journalists (83%) recognizes that they have already spread fake news based on social media content.

The study *What should journalists know?* showed that about half of surveyed journalists struggle to identify sources, and 38.5% declare that they struggle in assessing information and / or aspects related to the features of information found on the Internet, which may indicate the need for specific training on online information sources and the use of information aggregation tools and services (**Cardoso** *et al.*, 2019). When questioned on how they would like these courses to be taught, journalists stated they preferred training provided in vocational training centres rather than in universities or formal educational institutions.

Specialized training for journalists is a key topic in studies on education and training, although the literature still has few methodological and pedagogical approaches on the contents to be taught (**Thomson** *et al.*, 2022) and how to evaluate their effectiveness and efficiency.

The need for training is even more prevalent when journalists are given the responsibility to train on media and production processes rather than just on reception of the final product. This is also relevant when new actors arise in the media landscape, such as fact-checkers, who work retrospectively (after publication), and do what journalism does, or should do, beforehand, (before publication) (**Frau- Meigs**, 2022).

2.3. Educational action and media literacy

It is important not to reduce ML to the fight against disinformation (**Frau-Meigs**, 2022) despite it being a key tool to this fight.

The definitions of ML refer to a set of cognitive, emotional and social skills needed to be able to use text and technologies, including analytical and critical thinking skills, creative production of media messages, reflection and ethical thinking, as well as active social participation using media (*European Union*, 2009; **Hobbs**, 2010; **Tomé**; **De-Abreu**, 2019).

It is important distinguish Media Literacy (ML), which has emphasised the critical understanding of media messages, from information literacy, which has been mainly concerned with identifying, locating, assessing, and using information.

Throughout time, the core role of educational institutions in teaching citizens on Media and Information Literacy (*Unesco*, 2007; 2014; 2021) has been recognized and reinforced. Several international models for active and participating citizens have been designed and implemented with a focus on global digital competences for democratic culture" (*Council of Europe*, 2018; *OECD*, 2016; 2018; 2020).

Teacher training to address disinformation in the classroom is one of the focus of the guidelines by the *European Commission* (2022) and scholars intend to identify the effect of media and information literacy on the development of competences to identify disinformation and fake-news and then on people's sharing intentions (**Dame-Adjin-Tettey**, 2022).

Frau-Meigs states that

> "education is the response most wanted by the civic sector, the states and the users"

and particularly digital media and information literacy is the solution

> "to elicit effective counter-narratives, to provide new engagement models and to do so with multi-stakeholder involvement (including private/public/civic partnerships)" (2019 p. 18).

Skills acquisition may be measured based on the application of these models (**Frau-Meigs**; **Velez**; **Michel**, 2017; **Richardson**; **Molovidov**, 2017; *Council of Europe*, 2018; **Tomé**; 2019) and considering the variety of ML components: youth participation, teacher training and learning resources, parental support, policy initiatives, and the creation of database (**Bessarab** *et al.*, 2022).

Thus, other important elements that influence ML training are the procedures for designing and disseminating books, materials and benchmark for pedagogical activities that involve teachers and students (**Brites** *et al.*, 2018; **Conde**; **Mendinhos**; **Correia**, 2012; **Pereira** *et al.*, 2014; **Pereira**; **Pereira**; **Tomé**, 2011).

Following **Hobbs**' perspective (2010; 2017) several authors suggest that using news and journalism in the context of education and strengthening citizens' capacity to assess credit and qualitative media messages were crucial challenges for digital Media Literacy programs, pointing the way to educators, curriculum developers, and policymakers. Recent research observes the role of journalism's teacher within teachers' ML training (**Bessarab** *et al.*, 2022) proving the effectiveness of the developed model in the system of additional professional education. Scholars consider the new challenges faced by teachers and education professional nowadays and their urgent need for developing and determining their level of media culture, which are boosted by the introduction of special modules in the advanced training programmes, which include a set of mediatized assignments to master media education methods, technologies and techniques, and confidently navigate the media space.

Findings point out that despite all faced constraints (i.e. despite limited curriculum space, time and available resources) training experiences better allow teachers to integrate digital media literacy into their profession (**Botturi**, 2019; **Bessarab** *et al.*, 2022).

2.4. Media literacy training and interventions

The assessment of the ML level of the population, a goal that the *European Commission* has been pursuing since 2009, still lacks consensual tools and standards.

The variety of ML activities is mapped considering types of training and interventions.

The *European Council* report *Mapping of media literacy practices and actions in EU-28* adopts a set of indicators to analyse projects undertaken between 2010 and 2016 including significance[1], but fails to highlight their effectiveness (measured effect on the target groups) and evidence base features.

Eisemann and **Pimmer**'s (2020) systematic review codes twenty years of ML actions, focusing on those explicitly addressing fake news, were evidence based, boasting a solid methodology, checking effectiveness and reporting outcomes. Thus, trainings are differentiated in:

a) reactive training targeted at a fact-based correction of misinformation.

b) proactive training using proactive methodologies to approach fake news detection abilities, with specific set of supports (guidelines, regulations) and tools (technical and digital).

c) training to develop a critical understanding of the media system, to reflect on media content and the way such content is created and re-created.

Dumitru, **Ivan** and **Loos** (2022) consider research studies that included interventions aiming to reduce people's vulnerability to fake news using gamified method and/or news evaluation approach in US and Europe. Findings about Europe show that many projects aim to develop critical thinking and skills of target group to improve ML, and less intend to promote the ability to master different media and to develop creative media content.

The trend of pedagogical format is mainly interactive,

> "experimental in nature, with participants learning by doing while reflecting on the experience itself" (**Dumitru**, **Ivan**; **Loos**, 2022, p. 43),

while very few trainings use scientific data and ML components.

Thus, taxonomies use indicators describing components such as trainings': country of implementation, target groups, intended results, type of media literacy aimed for, trainings' design, topic, type of intervention, the stakeholders and their type of engagement (i.e. academia, public institutions, media regulatory authorities), type of project and their magnitude, reach (i.e. national, local), scale (i.e. large, small), duration and significance, methodologies and their evidence-based features (whether scientific data was used to structure the activities and tasks), effectiveness, (assessed based on the criterion of whether or not the studies tested for long term and short-term effects on the target groups) (**Frau-Meigs**; **Vélez**; **Michel**, 2017; **Dumitru**, **Ivan**; **Loos**, 2022; **Chapman**; **Insight**, 2016).

Among criticalities scholars also point to the little attention paid to the usage of assessment methodologies and results 'evaluation, as well as to

> "the risks and vulnerabilities confronting people on being exposed to content in various media formats. [...] The goalof these initiatives was not to teach people to check the trustworthiness of media information or to doubt theaccuracy of the messages distributed by various types of media" (**Dimitriu** *et al.*, 2022, pp-303-304).

In conclusion they strongly recommend wider implementation of the practice of testing the efficiency of ML trainings, and particularly of sessions dedicated to disinformation and fake news.

The discussion about these trainings' effectiveness points that reactive training projects' strategies results to have limited efficacy and tended to fade over time. The effectiveness' levels of proactive training proved to be higher and more constant over time, but the success of this approach should not be taken for granted as effectiveness is affected by the educational context (formal context is adverse) and participants' attitudinal factors. Even if the third training category has been dominant in the scientific literature, there is limited evidence of effectiveness, due to methodological limitations (**Eisemann**; **Pimmer**, 2020; **Dumitru** *et al.*, 2022; **Hobbs**, 2021).

2.5. Journalists' participation and training: methodological approaches and contents

Contemporary journalists are stakeholders regarding ML training and fact-checking, along with secondary school students and their teachers, or students attending higher education programs, since they all have a key role in the dissemination of scientific and technical knowledge that will be useful to the general population.

Media professionals have participated in education since the 1940s (**Tomé**, 2019) and nowadays the development of fact-checking projects as ML practices in several schools in different countries has been analysed considering their contributions to education.

Projects that bring together journalists and teachers in the fight against disinformation are important because their focus is twofold –the work carried out by journalists and the work conducted in schools (**Frau-Meigs**, 2019).

Currently ML educational initiatives can be a means for journalists to recover their reputation and regain citizens' trust and respect (**Hobbs**, 2016a, p. 145), reflecting opportunities of connection and risks of instrumentalization.

Several authors point out the risks of promoting

> "initiatives that ignore the history of the field and the development of specific competences beyond critical thinking on news" and "one-shot school interventions without much follow-up, and do not scale up to national level and reach a limited number of students" (**Frau-Meigs**, 2019, pp. 19-20).

Considering ML as a result of media education (**Buckingham**, 2003) and a set of

> "knowledge, competencies and life skills needed to participate in contemporary society through accessing, analysing, evaluating, and creating media messages in a wide variety of forms" (**Hobbs**, 2019),

several authors argue that journalists themselves must receive training in ML, and then take part in teachers' training, to collaborate in the design and development of sustainable and highly participated community projects, following the model called "whole-school approach" (**Raulin-Serrier** *et al.*, 2020; **Thomas** *et al.*, 2022).

Often, these trainings are very relevant and are good practices to raise awareness among young citizens. However, they tend to be *ad hoc*, formatted as 'one-shot' initiatives, without a clear orientation towards continuity, and an evaluation of their effects and impacts rarely occurs (**Frau-Meigs**, 2022).

These issues call for both a more holistic perspective on the practices involving journalists and teachers in controlled ML environments and the implementation of a training model aimed at form active and responsible citizens.

Another relevant issue raises from the methodological perspective related to the challenge of defining evaluation and assessment criteria.

This research focuses on ML initiatives directly involving Portuguese journalists, and to contextualize it's important to consider that according to the *Media Literacy Index 2022* Portugal ranks 14 among the 41 countries assessed (**Lessenski**, 2022).

Recently the *National Media Literacy Plan* was approved by the Portuguese government, developing synergies between multiple policymakers (such as the *Ministry of Education and Culture*) and the involvement of multiple entities with activities in the ML area. More than 20 stakeholders are identified, including private media, public bodies and media (i.e. School Libraries Network, National TV and radio broadcaster - and the news Agency), and NGOs (i.e., *Media Literacy and Journalism Association*).

In Portugal several pioneer and ongoing projects are mapped (**Moreno-Castro** *et al.*, 2022; **Cardoso** *et al.*, 2023; **Bobrowicz-Campos** *et al.*, 2021; **Brites** *et al.*, 2018; **Wardle**, 2019b) and our study considers three initiatives of ML that differently involve journalists aiming to answer to the following main questions:

RQ1 Can Media Literacy training serve as an actionable tool for journalists and newsrooms to counter internal and external pressure inducing factors?

RQ2 Which methodologies can be used by journalists and journalism's experts to function as trainers and inoculation agents?

RQ3 Which themes, tools and assessment dimensions can be implemented in order to improve the quality of training?

3. Methodology

This paper stems from longitudinal research started in 2017 and is still ongoing, considering that, despite the existence of multiple relevant initiatives of ML, there is little knowledge on their systemic and processual relationship with disinformation and, therefore, little understanding of the impact of ML on the overall public sphere.

The broad research is designed to mitigate these aspects, aiming to consider the perception of different stakeholders on a single conceptual framework and to provide interpretive evaluation dimensions for academics, media literacy specialists and governance actors. The overall aim is to provide a holistic approach to the ML induction and training processes analysing and crossing different stakeholders' experiences in Portugal.

This research intends to understand the challenges for journalists' professional changing profiles in the post truth era (**Lewandowsky**; **Van-Der-Linden**, 2021) and to analyse the priorities needed to deal with disinformation and clarify how these challenges and needs relate to their actual roles in ML projects.

We collect qualitative and quantitative data about ML projects and initatives focused on disinformation, encompassing training interventions to map the contents', the methodologies and the perceptions of participants.

We have designed an inductive and phased investigation, using mixed methodologies (**Miles**; **Huberman**; **Saldana**, 2014) for the processing of qualitative and quantitative data collected within two ML projects: the project *Media Literacy and Journalism: pedagogical practices with and about media* and the *Media Literacy and Disinformation* (*MLD*), both comprised within *Iberifier* observatory activities.

We adopted a mixed-method approach in the structuring of a three-part analysis (based on different samples based on three typologies of stakeholders), and on different and type of data (**Creswell**, 2014; **Miles**; **Huberman**; **Saldana**, 2014).

Data was collected through:
- 17 semi-structured interviews to Portuguese editors in-chief journalists, about the needs and practices implemented in the newsrooms regarding disinformation (*Iberifier* project, 2022);
- a monitoring survey about 16 media literacy training workshops conducted by journalists, answered by 186 teachers in the realm of the *Media Literacy and Journalism: pedagogical practices with and about media* (2019 and 2020);
- an evaluation survey to 54 journalists and field researchers who participated as trainees in 5 of the *Media Literacy and Disinformation* (*MLD*) courses, taught in 2022 in the scope of the *Iberifier* project.

The research ethics protocol follows GDPR guidelines and secures the anonymity of respondents, as well as the organisations they represent. Findings reflect this choice as respondents are quoted using an identification number based on dataset occurrences.

This analytical structure aims to cover not only the information provided by all three samples but also to provide a holistic approach to the media literacy induction process. Methodological frameworks include the analysis of quantitative and qualitative data, processed using *SPSS* and *Atlas.ti* softwares. Quantative analysis follows descriptive statistics principles and serves essentially to portray the most relevant topics, the most frequent response options and aims to show results per sample in proportional terms (**Creswell**, 2014).

Despite the different formats of the collected data, it was possible to standardise the corpus and perform a qualitative-quantitative content analysis by classifying common elements and comparing differences.

We adopt inductive content analysis "*closer to ethnographic methods, with some borrowed techniques from grounded theory*" (**Miles**; **Huberman**; **Saldana**, 2014, p. 29), to construct categories, a circular process made easier by the software usage (**Vala**, 1986; **Ghiglione**; **Matalon**, 1992).

The three datasets were initially analysed separately, and we use inter-coders procedures for validation (**Miles**; **Huberman**; **Saldana**, 2014), before proceeding with results of triangulation and the inductive interpretation processes from the identified analytical categories that

> ' By triangulating data from three different and independent samples (17 journalists in-chief, 186 educators trained by journalists, 54 journalists trained in ML) we conclude that there is lack of specialised knowledge, practical tools, and continuous training as well as evaluation resources that allow for the creation and promotion of more effective ML training programs '

support the theoretical abstraction process (**Bardin**, 1977; **Bogdan**; **Biklen**, 1994). This process supports the definition of three common macro-categories: Collaboration, Continuity and Sustainability.

Iberifier Observatory - Iberian Digital Media Research and Fact-Checking Hub

> Integrating journalists in ML training processes allows bridging the gap between media practice, teach and students' competencies

The *Iberian Digital Media Research and Fact-Checking Hub* (*Iberifier*) was created in 2021 as one of the 14 *EDMO* observatories. The Observatory includes more than 70 researchers from 23 institutions in Spain and Portugal: includes 12 universities, 6 multidisciplinary research centres, 5 fact-checkers to fight disinformation, and news agencies.

Its work is based on three pillars and related objectives: identifying and defining disinformation content and its platforms; mapping the media ecosystem, exploring and using new technologies such as Artificial Intelligence (AI) and computing; collecting data and conducting studies that may further knowledge and allow for informed decisions and actions, publishing strategic reports related to the impact of politics, economics, and other areas of the media industry.

Iberifier aims to inform citizens about multiple possibilities to fight disinformation by legal (i.e. Digital Services Act), self-regulatory (i.e Code of Practice 2022), technological (i.e. fact-checkers, using algorithms to debunk disinformation) or educational means. At same time it also intends to provide tools, training and actions targeted to contexts and targets.

A set of Media Literacy actions are created and implemented in coordination with local national governments, following the principle that the fight against disinformation must be done through tailor-made strategies and not ready-made ones.

Media Literacy (ML) as a tool for the betterment and improvement of a democratic public sphere lies at the core of the *Iberifier*, whose activities are based on three areas: the creation of resources; the provision of training and monitoring; the participation in national and international forums.

Iberifier activities encompass the creation of two manuals for trainers and trainees, the implementation of training pilots –the *Media Literacy and Disinformation* (*MLD*)– and their assessment, which are objects of this analysis.

To guarantee the efficiency and the effectiveness of its purpose within the national and international context, *Iberifier* also integrated and supported pre-existing entities and projects in both countries, while offering training and materials on the identification and mitigation of disinformation phenomena. One of those is the *Media Literacy and Journalism: pedagogical practices with and about media* project, also analysed here.

3.1. Interviews to journalists editors in-chief

During the fall of 2022 to better understand how the Portuguese media system and newsrooms deals with disinformation, *Iberifier* team decides to interview a sample of journalist editors-in-chief representative of the diversity that feature the national media landscape.

The questionnaire design and script include ten questions organised into four thematic areas of relevance accordingly to literature: newsroom work practices and disinformation (D), labour issues (P); audience trust in journalism (C); funding and business models (F) (see Table 1).

The sampling criteria comprised differentiation criteria: diversity of scope, focus/ specialisation, and territorial coverage (national, regional or local). To ensure the diversity of the sample, differentiated media were selected in terms of the leading platform (press, radio, television or online) and included professionals from both traditional media and innovative media, whether in terms of journalistic approach or business models.

Although socio-demographic data is not relevant in defining the sample, the pre-selection (n = 20) is equitable concerning the gender of the respondents. We conducted 17 semi-structured interviews to the sample of respondents (n= 17) containing 53% women, which is not representative of the average composition of the editorial boards in the country.

Interviewees received the introduction to the interviews containing preliminary information and the questions, as well as they signed a written informed consent as guarantee of the total anonymisation, seeking to ensure that genuine responses are obtained and not influenced by internal or external pressures.

The main technique was conducting and recording interviews using video conferencing tools. Alternatively, interviewees could choose to respond via recorded voice messages on the *WhatsApp* application or in written format via email. In both options, the interviewee had previously been instructed to respond to each question via a voice message/written paragraph.

The interviews were transcribed verbatim with the help of the Trint software. The analytical procedure follows two steps:

- A first qualitative analysis of the responses leads to the definition of a set of indicators. Then we categorise the main themes in each set of responses and a quantitative dimension was introduced by adopting a classification to differentiate and count identified variables.

- An in-depth content qualitative analysis and categorization process (**Bardin**, 1977) concerning thematic areas to explore the relationships between current and potential journalistic practices and the formative dimension in media literacy against disinformation.

From this inductive process derives a set of thematic categories which aggregates and highlights the actual practices, need and challenges detected in the newsrooms in relation to disinformation and the training operational dimension. Table 1 describes the questions and thematic areas, including the classification used in the first analysis and categorization procedure; a summary of the analytical clues obtained by applying the first phase of the methodological procedure; the new categories created during the second phase of the analysis.

> Journalism and information professionals have a double role in the fight against disinformation; they are responsible for preserving and implementing fact-checking procedures that validate authenticity, relevance, and social value of news, but they also continue to nourish trust in the media system.

The ethical code of conduct adopted in the research included the possibility of review and replication by the interviewees (no request was received) and the decision, in the written results, not to present cross-references between excerpts or identify the interviewees quoted.

3.2. Media literacy trainings and surveys to trainees

Media Literacy and Journalism: pedagogical practices with and about media training in Media Literacy for journalists, was carried out between 2017 and 2021 in Portugal, involving 164 journalists. 50 of these professionals have so far been certified by the *Ministry of Education*, an essential condition to be able to provide continuous training to school' teachers. These 50 journalists were able to implement 16 training workshops between 2019 and 2020, involving 260 teachers from Portugal.

We design and apply a survey to identify teachers' satisfaction level regarding seven parameters and was designed in five questions divided into types and analytical objectives.

The training assessment questionnaire was applied in paper (2019) or online, via *Google Forms* (2020), at the end of the last training session in each course.

186 answers were collected and validated, 90 of which by teachers who completed the training in 2019 (90% of the total of the trainees) and 96 by teachers who completed the training in 2020 (60% of the total of the trainees).

The data collected in 2019 and 2020 were first analysed separately, and later compared. From the initial reading and analysis of the 186 answers, we design a system of indicators (20) and sub-categories (17) to develop inductive analysis and drawing findings.

In the second half of 2022 training courses developed in the scope of the *Iberifier* project in Portugal took place online and in person, for free, in different locations of the country and in three length formats: 1, 2 or 4 hours. This phase was anticipated by the creation of two manuals for trainers and trainees within the realm of *Media Literacy and Disinformation* (*MLD*) project.

The survey consists of 3 questions divided into different types and objectives aimed at:

- validating training parameters and correspondent satisfaction levels
- identifying positive aspects
- identifying improvement suggestions and their justification

The 10 pilot editions of the training were attended by more than 80 participants, including journalists from several media (local, national, TV, radio, newspapers, news agency), based in different regions of Portugal. The trainees group includes a small number of people from a university radio team and researchers in the field of journalism.

The survey was provided asking participants to fill in the survey immediately after the training was completed, via *Google Forms* (2022).

We collected and validated the answers from 54 participants in 5 courses:

- 37 from two courses B - two hours (in person)
- 10 from two courses C - four hours (in person)
- 7 from a course A - one hour (online)

Then we design a system of indicators (18) and sub-categories (11), which generates a system of three macro-categories, that allowed to organise the answers.

Overall, the intention was to develop a course that could be replicated within different contexts and format.

Data and results triangulation processes allow to develop via induction and abstraction a system of three macro-categories –collaboration, continuity and sustainability– that support our findings discussion.

4. Findings

4.1. Editors-in chief and newsroom experiences

Aiming to understand the challenges for journalists' professional changing profiles in current era (**Lewandowsky**; **Van-Der-Linden**, 2021; **Deuze**; **Witschge**, 2020) and to analyse the priorities needed to deal with disinformation, the research sampled 17 journalists to conduct semi-structured interviews and collecting experience from a broad variety of professionals (media sector, format, scope and careers' experience).

Interviewed editors-in-chief work for generalist national TV, radio, print and online media organisations, as well as for news agencies, or specialised thematic media (i.e. economy, lifestyle etc.) or even for local, regional or hyper specialised territorial media.

Answers were analysed to aggregate and highlight needs, challenges and practices found in Portuguese newsrooms, defining two sets of categories resulting from the induction and abstraction processes (**Miles**; **Huberman**; **Saldana**, 2014) described in Table 1.

4.2. Dissemination of disinformation and verification protocols

Most journalists admit that may have been of disinformation content on social media platforms**.** Since only 20% claims to be sure that they did not disseminate disinformation, it's urgent to identify some of the possible causes and attempted solutions in journalistic practices.

Journalists said that some of the causes derived from the pressures in publishing times, increased by the speed of digital communication and the impositions of standards and metrics about reach, engagement, and visibility, partly associated with competition, but also exacerbated by the algorithmic logics of social media global platforms (**Poell**; **Nieborg**; **Duffy**, 2023; **Van-Dijck**; **Poell**; **De-Waal**, 2018; **Moreno-Castro**; **Crespo**, 2022).

This happens on websites in which flow is measured through reach, through speed (**Moreno-Castro**; **Crespo**, 2022, p. 2).

> We prefer reliable information rather than speed and haste. We are always careful when information comes closely connected with the digital. When it's happens something like the general anticipation of news, we usually are extra careful. We usually stay put until we are certain. But I cannot say that it has not happened (to spread disinformation) (**Moreno-Castro**; **Crespo**, 2022, p. 11).

Questioned about the adoption of verification protocol in their newsroom, most of them gave a negative answer. 30% do not clearly answer the question, overestimating the informal verification system. In particular the mainstream national media representatives often reply to the question with a query about "what is meant by verification protocol" since the professional practice of "good quality journalism" includes "measures adopted with attention and continuity" such as prior verification, source cross-referencing and citation and updating and possible correction of published information.

Beyond the lexical issue, it seems to appear a lack of clarity and common comprehension about the meaning and the possible shape of a protocol, including and overcoming traditional formal and informal journalistic practices.

> I do not know if "protocol" is the right word, but we carefully check information and sources. We double or triple check and if in doubt, we do not publish the news (p. 3).

A sort of not written rules emerge. The first is about older and more experienced journalists and editors are pointed as advisors for the youngest, as they were living manuals of good practices. The second is the increased worrying and attention approaching

> "mechanisms to disseminate 'news' are now better and more sophisticated and require more complex care. We have stricter rules regarding sources from social media, namely video" (p. 15).

A paradoxical situation is reflected by answers that, on one hand, underline concerns in relation to content originating from publications on social networks and other digital platforms, but on the other point that "this has not changed what we do on a daily basis" p. 7). In most of newsroom a special care seems to be given to the content originated from social media posts and other digital platforms.

The daily usage of online social networks by journalists and the methods to approach and reuse the contents published on these platforms are essential dimensions to target in order to clarify what a verification protocol adoption could means in the newsroom practices, and why "traditional" methods are valid and necessary and can be improved by technological tools and ML competences.

Going deeper into the issue it is understood that the implementation of verification protocols and tools is related to aspects involving strategic decisions in the management of economic, technological, and human resources. Results point to a systemic interlace of factors that act and influence the readiness and effectiveness of responses.

Data shows that it is very rare to find examples of integration of new advanced technologies into newsroom practices against disinformation, often due to lack of budget or capacities.

(…) right now, no. That was something we considered, but all these services are paid and expensive. We were interested in working with universities that could help us do that fact-checking monitoring. So the answer is no, but we would have liked to. We are not able to invest in a platform that could help us, for example, with an algorithm. What we do is hard journalism. Using the existing tools, but the topic is getting some attention and some visibility on the sites we are designing (p. 6).

Yes, alerts on emails from external sources with dubious content, we are developing an artificial intelligence tool within a consortium which is called counter-fake and will allow us to at least receive an alert signal when we are faced with dubious content. In addition, in our own website we constantly add information about the so-called "fake news" (p. 10).

4.3. Practices to minimise risks

Findings also identified some of the practices implemented to try to avoid and minimise risks of spreading disinformation: the most common are having a policy on documental sources, using social media for analysis rather than as source of information, and considering the multiplicity of uses and the intentions of its users.

Looking into that niche of media that adopts more innovative methodologies in work routines, we identify only one example of a newsroom which adopts a detailed methodical procedure, which is scrupulously followed by journalists and publicly available.

Another media brand employs manpower hours to complete internally the fact-checking procedures.From the discussion on checking information and fighting disinformation, editors-in-chief often mention the emergence of sensitive themes such as the ethics and transparency at work, the availability of technological tools and the strategic choices related to the market needs.

We have all realised that we live in an environment that is more hostile to the truth (…) In several situations we thought it was important to not only deny certain information (...) And our mission is also to analyse the main disinformation news and decide we should address them because we must tell people that this is not true (...) We are not concerned about getting incredible stories to get clicks. That does not interest us at all. It is not our line of business (p. 8).

Other strategies are correction and updating of previously published content but are applied exclusively when the focal content is published and owned by their employer-media company. That means that if the information is incorrect, false or misleading is published in another media, the corrective answer by third parties is almost none. If most media do not intervene in cases like these, we must mention that few organisations deeply fact-check, react and publish about the controversial issue, once this is part of their mission and focus.

Assuming an increased supply of content more mixed with misinformation, which calls for greater vigilance and caution, interviews deep on methodologies for verification, fact-checking procedures, and associated factors, collecting evidence about a trend of recent enhancement of verification procedures, although specific training, practice and fact-checking methods are rarely mentioned.

We only use tools that journalists are more familiar with. *Google* itself has tools that help verifying the authorship of texts and photos, checking the original date of publication of an image. I think that the younger journalists are increasingly familiar with these techniques (p. 5).

There is clearly an increase in the number of content providers that are not checked while traditional media are losing their notoriety (p. 16).

Journalists ask for more training in the newsrooms and for other combined measures, like having larger investment in technology and innovation and combating piracy of newspapers in pdf format, which weak the entire news' value-creation system.

However, we see that the digital environment is also fruitful for the creation of new professional media, and to change the approach to professional practice. Often these new digital media organizations offer high quality contents, published not always on daily basis being dedicated to investigative journalism, often based on innovative business models, strong community engagement strategies and surviving thanks to the contributions of loyal and trusting online audiences.

The existence of alternative journalism projects is evidence that it is still possible to trust journalism and perhaps these projects play an important role in this trust, as well as when the general media decide to opt for investigative reports rather than "breaking news" that are just a title and not actual information. Trust in journalism is built on journalistic quality (p. 4)

Thus, a first result is that to tackle the issue of the dissemination of disinformation, on the one hand, it is necessary to conduct in parallel both processes of ensuring the quality of journalistic content and of the journalistic professional practices.

> Journalism and information professionals have the role of the trainer, who is an informed and trained agent in knowledge management

4.4. Lack of training

The second main result is the scarcity of training in the field of disinformation within the Portuguese newsrooms. The lack of specialised training creates the need and urgency to implement informal practices.

Most journalists mention lack of knowledge in dealing with disinformation and refer that they would like to have training on it, or they avoid giving a direct answer on the topic.

The sample includes editors-in-chief from media organisations which are partners of the *Iberifier* project, who had already been trained in the realm of disinformation (30% of cases). In addition to that, references to any other training are rare. We found only a single case of training promoted at the corporate level of a media company, offered by an external entity linked with the work developed by the media company's marketing team.

Due to the lack of specialised training, journalists informally seek to establish good practices and internal activities as a means of addressing their daily concerns on this matter.

> We are constantly striving to reinforce not only our fact-checking process but to improve in-house best practices. It is a topic under discussion and a permanent concern. (p. 7)

Journalists point to quality's standard and measures as desirable improvements regarding working conditions, team stability and newsroom routine. These needs merge with the consistent recommendations underlining the importance of continuing the training along different steps of career development, supporting more recruitment and more journalists' class awareness.

Collaboration and cohesion among journalists as a professional category are mentioned as elements that would provide strength in collective negotiations and internal improvements.

However, we must point out that there are differences across media, particularly because their format, business and newsroom structures, and geographical locations, influence the availability and provision of training. This variation often reflects also differences in the contractual and wage conditions and mirror the debate about how to improve decentralization (**Jerónimo**; **Sánchez-Esparza**, 2022) and journalistic start-ups (**Cardoso** *et al.*, 2019; **Crespo** *et al.*, 2020).

> (…) also lifelong training. Being far from Lisbon is an added difficulty, for training to take place it usually requires a minimum of participants and training is essential to maintain newsroom quality. (p. 12)

Results inductively bring attention to the pressures exerted by platformization of news and the algorithmic culture (**Poell**; **Nieborg**; **Duffy**, 2023) that require both "internal" and "external" responses from the newsrooms.

According to interviewed journalists an external systemic process must be added, recalling the educational action (**Heat**, 2021) aimed at "*media illiteracy of Portuguese people*", a "*more structural*" action that includes improvements in the skills of citizens "*and that must start with children*."

They call for more attention to ML training, addressing younger generations, who are more likely to get information from the digital world and share information accessed online (**Cardoso**; **Paisana**; **Pinto-Martinho**, 2022). Journalists recognize that it is essential for youth to learn to identify and manage disinformation content, and acknowledge that the process requires interventions, involving teachers but also other agents responsible for their education. Here we see the opportunities to create collaboration processes and training that bring together young students, educators, journalists, content creators and digital influencers.

Internally, newsrooms face two types of challenges:

- Finding ways to make their journalistic work stand out from the variety of content that is produced by the medium itself.
- Differentiate informative and journalistic contents from those made by other digital creators and companies disseminated in different media. This means finding practical solutions and formulas to meet the growing emulation of journalistic styles and layout.

The topic refers to communicative aspects that apparently influence content in its most visual, superficial and aesthetic dimension, as in the case of design, layout, and copy choices, but which in fact has deeper implications, both in enhancing the media brand quality and in cataloguing, describing and organising the journalistic work.

To meet the pressures imposed by the communicational dominance of social media, influencing the content, production, viralisation and monetization based on formats, hashtags and engagement metrics, to journalism is impelled to produce, remix and adapt content for multiple platforms (**Poell**; **Nieborg**; **Duffy**, 2023) but also to ponder, define, plan and implement its communication strategies in articulation with social network platforms (**Breiner**, 2017).

Essentially, respondents suggest that it is essential to act "inside" and "outside" the media to structure systemic and specific interventions, to act at macro, meso and micro levels in a coordinated way, involving stakeholders and reflecting the action categories proposed by (**Heath**, 2021; **Caled**; **Silva**, 2022).

> Two key components: regulation and technology. Governments and institutional macro-structures at European and global level must put pressure on technology multinationals to make this distinction clear. However, this cannot be carried out without a huge investment in innovation, particularly in artificial intelligence –and this is clearly a responsibility of the largest companies working with social media and search engines. We must instil ethics in the system. (p. 13)

The issue covers the debate on the transformation of the professional roles of journalists and the relationship between journalistic practice and other professional practices in the field of communication (**Deuze**; **Witschge**, 2020).

> Journalism should stop trying to be like memes, it should try to stop behaving like social media, it should stop following fast food strategy (..) First were the videos, then the photo galleries, now it is *TikTok*. I cannot deny that with the development of social media and the digital world, the way journalism communicates must change, and that different versions of the same content must be created. What is not acceptable is journalists being concerned with creating a thousand versions of their work for social media rather than being concerned with doing their job. Fortunately, many years later, there are journalists doing investigation and there are people, other professionals, who are experts in social media, who use the work conducted by journalists and adapt it to other languages, whether for *YouTube* or *Facebook*, without compromising that work. (p. 10)

Table 1. Interviews to editors-in-chef: questions, area of research, first level f categories, analytical clues, and thematic categories.

Nº	Questions	Areas	First categories	Analytical clues	Thematic categories
1	Does your media outlet or publishing group have a protocol to deal with the eventual publication of disinformation? Do you have verification systems in place to correct or change questionable content?	D	a) not assumed b) avoid to answer c) assumed	58% do not have a news verification protocol. Less than 20% explicitly declare having a news verification protocol. Most overestimate the informal verification system.	Verification protocol. Usage of social network platforms by journalists. Approaches to social networks contents.
2	Do you consider the hypothesis that journalists have already spread disinformation because they used social networks platforms as their main sources?	D	a) yes b) it may have happened c) no	83% assume it has happened to spread disinformation by using social media as a source. Less than 20% declare that they have not spread disinformation.	Causes for disseminating disinformation. Measures to limit the risks.
3	In recent years, have verification procedures been strengthened? In what situations do you decide to update or deny disinformation?	D	a) usual procedures b) reinforced procedures c) specific method d) vigilant and cautious approach	Verification procedures have been strengthened from the usual verification techniques. Few use more appropriate methodologies and strategies, specialised training for fact-checking.	Methodologies for fact-checking procedures Associated factors
4	Does the newsroom have up-to-date training on how to combat disinformation? If so, internal or external?	D	a) no b) does not fit the question c) yes d) some	70% of the media has not had or promoted any type of specific training. 29% avoid providing a direct answer to the question	Lack of specialised training Informal practices
5	What changes can be made to working conditions to improve the quality of journalistic work?	P	a) salaries b) personal living conditions c) continuous training d) precarity	Answers indicate three main areas of intervention: increased salaries, better conditions to manage personal and professional life, and the need for more training.	Lifelong training Team spirit Diversity of opportunities by media type and location
6	What do you suggest to improve the stability of teams and the quality of newsrooms?	P	a) personal life b) schedules c) training	Measures related to the "respect for the time and space of the journalist's personal life" and "for schedules and the right to disconnect" are priorities, followed by the need for continuous training.	Lifelong training Team spirit Diversity of opportunities by media type and location
7	Despite being stable and higher than in most countries, the confidence of the Portuguese in journalism and the media may be at risk. What reasons do you identify to justify the confidence of the Portuguese in the media?	C	a) recognition b) illiteracy people	Trust's issue is not consensually perceived. Two main explanations related to: - recognition of the traditional media and the role of alternative journalism. -little critical sense, tolerance of the Portuguese and deference in relation to figures in power.	Literacy and trust Sustainability Television vs digital media Risks and opportunities
8	How should journalism be differentiated from other content, whether informative or non-informative, on social networks or search engines? What measures can be taken?	C	a) labels b) media literacy c) improving journalistic production	Journalism must differentiate itself from other content on social media, but solutions to the confusion between journalistic and non-journalistic contents are neither obvious nor clear. "Create differentiation labels that can guide readers" was the most mentioned, followed by a greater investment of media literacy and a warning about journalistic production itself.	Algorithmic culture and platformization of news Communication and journalism 5 levels of action

Source: data collected in the scope of *Iberifier* project

Two paths are taken in the search for solutions in the newsroom, and can be conceived as alternatives or sequential process:

- integrate the production of social media content in journalistic work;
- integrate several communication professionals in the newsrooms, though with different tasks, prerogatives and scopes of action.

A large part of the interviewees seems to be more favourable to forms of integration and collaboration between different professional figures and roles in the creation of journalistic content to be disseminated through social network platforms.

4.5. Media literacy and journalism training

Media Literacy and Journalism: pedagogical practices with and about media is a pioneering action of two days of training in Media Literacy for journalists, carried out between 2017 and 2021 in mainland Portugal and in the Azores islands. The main aim was to prepare journalists to become trainers and mentors to professional educators. It was developed in four training actions, involving a total of 164 journalists and other communication professionals, delivering more than 16 courses.

Initially the activity was developed in partnership between the *Journalists Union* in Portugal, the *National Training Centre for Journalists* (*Cenjor*), the *Ministry of Education and Media Literacy* and *Journalism Association* (*ALPMJ*). In October 2021, the project grows, becoming a partner of the consortium *Iberifier* observatory.

Overall, the intention was to develop a structure to confront journalists-trainees with topics such as:

- The media system in the post-truth era: the essential elements of journalism, the changing profiles of journalists, the role of contemporary journalistic ethics and deontology in the digital age;
- The functional processes of creation of digital news, writing and reading them, good copy and news criteria; journalistic genres and genre hybridization in digital journalism.
- The processes of identifying and debunking fake news and disinformation; information sources; regulation and participation mechanisms.
- The dynamics of citizenship in the 21st century and in a self-mediated environment: analysis of democratic culture skills; the perspective of journalists and other professionals regarding the training of active and critical audiences on information; social media, videos and mobile consumption; activism in social media and in the global public space.

50 of these professionals have so far been certified by the *Ministry of Education*, an essential condition to be able to provide in-service teacher training to schools' teachers.

Journalists were prepared to deliver ML training online and offline, not exclusively oriented to deconstruct information but aim to sustain and streamline the pedagogical work of teachers with their students. These 50 journalists were able to implement 16 training workshops between 2019 and 2020, involving 260 teachers from mainland Portugal.

In these 40-hour training workshops the leverage is always on the collaboration between journalists and teachers. Journalists were trained to applied methodologies that involved teachers as co-researchers in data collection (**Tomé** *et al.*, 2023) while they were implementing the projects in their schools.

100 teachers completed their training in 2019 and another 160 completed it in 2020, in courses adapted to remote learning structures due to the Covid-19 pandemic. The respondents to our survey were 90 teachers for the 2019 editions and 96 for the 2020 editions of the training.

The training contents provided was considered adequate by a vast majority of trainees (69% in 2019 and 78% in 2020). The trainings also improve the teachers' comprehension about the media system according to more than 90% of the trainees in both years. In comparison, there is also an increase in the positive evaluations regarding content adequacy and trainer performance.

The content analysis allows to deepen the evaluations and compare the results obtained over the years according to the three identified macro-categories: collaboration, continuity and sustainability.

Collaboration results from the positively evaluated experiences of having journalists at school to interact directly with students, or mentoring projects developed by classes or the larger educational community. In both editions teachers expressed their willingness to continue media projects, both already existing or new ones. Collaboration results also from the journalists' work to enable teachers to acquire skills to identify and debunk disinformation, to analyze the societal impacts and to use multimedia resources, conduct regressive image search and test tools and software.

'The process of building professional competencies in disinformation-related media literacy will become more efficient as our ability to better measure the efficiency and relevance of training grows'

The continuity category evidences the increase in positive evaluations by the teachers regarding the usefulness of training for developing pedagogical activities to be carried out with their students. In 2020 73% of the teachers declare that the activities are useful, while in 2019 only 61% had the same experience.

The sustainability category shows the importance of monitoring as the need to follow-up on teachers who had revived projects, or improved ongoing or new projects became clear. The journalist-trainer is an essential element for the success of projects, and teachers ask for more regular collaboration in both online and face-to-face sessions.

Collaboration is detected analyzing experiences developed with the regional media as local radio and daily newspapers, and the sustainability of ML is linked to the development of strategic partnerships, particularly between media companies and schools, journalists and teachers and school management. This expansion would further ensure more training in a field considered necessary by researchers who stress the importance of media education (**Hobbs**, 2020a; **Tomé** *et al.*, 2022), as well as by our survey participants. Findings confirm the pedagogical and formative importance of the initiative, welcomed by trainees that are directly involved in ML projects that focus on their practical skills and capacities to tailor their ML school projects rather than offer ready-made. The training workshops' leverage is always the collaboration between journalists and teachers, through which is possible to guide the sustainability of ML projects. Teachers' interests are thus in line with **Frau-Meigs** perspective (2019) stating that the actions involving journalists in schools should not consist of single visits, but rather of sustained and sustainable projects.

Media Literacy and Journalism training was awarded for its innovation and in view of its focus on continuity, impact, and significant results (**Frau-Meigs**, 2019).

4.6. *Iberifier* manuals, *MLD* training and survey to journalists

Within the realm of *Iberifier* project was designed a coordinated pedagogical training format, based on the development of two manuals on media literacy, one dedicated to trainers and the other to trainees. Both manuals present a set of features, with integrated video, audio, infographics, theoretical content and explanation of key concepts and suggestions to develop practical activities and increase capacities. The common denominator is the pedagogical approach oriented to the provision of support, combining practical procedures and theoretical perspectives (*European Commission*, 2019; **Vuorikari**; **Kluzer**; **Punie**, 2022, *Unesco*, 2021; *OECD*, 2018) to enhance knowledge and competences.

The manual for the trainees aims to train journalists, and other professionals in the field of media literacy like the teachers, focusing on fact-checking and fighting disinformation (**Tomé** *et al.*, 2022).

The work done to prepare the manual and its contents are the basis for all the training courses offered by *Iberifier*, following an adaptive perspective as its application is tailored and adapted to the features of the diverse groups of trainees. Manuals are conceived as tools to facilitate professional careers, to meet the need to work on their training.

In 2022, after all this preparatory work, the training *Media Literacy and Disinformation (MLD)* was created. The pedagogical approach aims to stimulate and foster the interest and an informed engagement between the learner, the phenomenon of misinformation and the media ecosystem.

MLD is structured in 3 proposals, which include both online and in person formats: A) short course (1 hour online); B) medium course (2 hours in person); C) long course (4 hours in person).

The training has a single-base script, which is adapted to the different formats, durations, and groups of trainees. It starts with a knowledge diagnostic test on disinformation, whose contents are adapted to the specific course. It focuses on both theoretical and practical approaches, presenting scientific conceptualization of the concepts (**Derakhshan**; **Wardle**, 2017; **Wardle**, 2020) related to disinformation and focusing on the analysis of the media ecosystem, new consumption habits, psychological and cognitive aspects related with understanding the phenomenon, the process of building trust, which is deconstructed from the emotional dimension to group polarisation perspectives.

In terms of practical skills, emphasis is given to the use of intuitive applications that allow to analyse the sources used, how images and videos may be manipulated (**Tomé** *et al.*, 2022) considering the importance of fact checkers (**Humprecht**, 2020) and automatic verification (**Torabi-Asr**; **Taboada**, 2019) through case studies/practical examples and contextualising reality.

10 pilot editions of the *Iberifier Media Literacy and Disinformation* (*MLD*) training project were carried out in different locations of the country or using Zoom, and involved 80 participants, 68% of whom responded to the survey. The validated answers come from 54 journalists and researchers in journalism who participated in 6 courses.

The overall assessment of the course is positive, more than 90% of respondents show levels of agreement with the proposed statements about training quality and con-

> As an improvement system for future training systems, it is of paramount importance to create evaluative structures which focus not only on the feedback from trainees but also on the results of their subsequent interaction with their target audiences, be their students, teachers, other journalists, or audiences

tents. Journalists express greater satisfaction and higher levels of agreement with the professional usefulness of the acquired knowledge, the adequacy of methodologies and training context.

Findings show that parameters marked by levels of disa-

'' Collaboration, continuity and sustainability allow for the development of theoretical-practical processes for evaluating training against disinformation ''

greement are those related to the duration of training (too short for 9%), the adequacy of the methodologies and the platforms used for the training (2% for each item). This supports the previous statement about the relevance of contextual dimension on learning disposition and efficacy (**Cardoso** *et al.*, 2019).

The content analysis allows to organise collected answers through the multiple steps of categorization process, which is resumed in Appendix 1 and discuss below.

4.7. Collaboration

Multiple dimensions of collaboration are established during the training, with implication in practical and theoretical terms.

Fostering the collaboration between journalists and *MLD* trainers helps to frame disinformation within scientific approaches, to incentivize evidence-based knowledge, critical and practical skills acquisition.

Journalists recognize that commenting on their training experiences, the contact with conceptual and professional tools. The adopted methodology and the trainer's capacity to dynamize the sessions are the training aspects most frequently ranked as positive.

> The scientific knowledge and the experience of the teacher were the most positive things in the course because they allowed for more comprehensive learning. (p. 14 B course)

This strength is identified in both online and offline training format, allowing both the consolidation of theoretical knowledge and the development of "*essential skills through access to tools that can be adopted in subsequent professional practices*". (p. 2, A course)

The participative pedagogical format implies trainees to collaborate and share their experiences into training sessions. Since this is a two-way relationship in an interactive training context, trainees recognize the efficacy of what relates to the engagement with the session and the durability of learning memories.

> To bring examples of fact-checking agencies from places like Latin America, Africa and Asia could be interesting. (p. 39 - A course)

Collaboration among trainees is another positive aspect that must be promoted in terms of interaction since it makes exchange and enrichment of personal experiences and practical examples easier.

Respondents identify benefits to their professional practices, fostering networks and understand the required effort and resources needed to impulse their accountability and requirements to the employer media companies.

> To understand the number and the teamwork in the analysis of news and better identify fake news. (p. 7, B course)

Moreover, it is possible to identify other benefits lasting from these forms of collaboration: pedagogy teaches that putting the student at the centre of the learning process is worthy in both short-term and mid-term perspectives (**Brites** *et al.*, 2018). In the middle-term a double benefit rises from this strategy of incentivize collaboration: trainees must use the pedagogic materials during the training, trainers ask to them for sharing examples and experiences obtaining new input to update such materials, and trainees directly contributing to training sessions' debate, feel more involved, understood and represented, gaining more willingness to consult the training materials after the session.

From the trainers' perspective it is important to maintain a feedback channel open to keep the listening process ongoing with trainees, as well as the capacity to integrate new perspectives and information on pedagogical materials, accordingly to the evolution of the broad disinformation phenomena as well as accordingly to trainees' comment and learning feedback, using a constant improvement approach.

Collaboration is the essence of project development and management, as confirmed by respondent aim to enhance the connections created during the training session to build up continuative practices of sharing and networking good practices between peers. The effectiveness of this is possible to be factually measured only afterwards, observing the number of projects co-created or co-supported by colleagues from the same or spare media companies, as well as it could be important to monitor and measure the improvement in variety and efficacy of working procedures, new tools adoption and goal achievement.

4.8. Continuity

The training contents' quality is essential to respond to the need and interest of trainees, and their professional practice need. Contents to be well received and considered effective, have to be easily accessible, relevant and featured by practical and empirical components, and clear connection with trainees' reality.

Journalists responding to the survey confirm and reinforce the answers given by the editors-in-chief about, pointing to the lack and relevance of training offers able to stimulate learning, critical thinking, resilience. The positive attitude of trainees also increases the chance of effectiveness (**Dumitru**; **Ivan**; **Loos**, 2022).

Professional practice pillars and connotative elements, such as deontology and verification methods are central topics in the training, encompassing journalistic culture. This is seen as continuity element and the training represents for trainees an experience that makes it possible to reinforce, complement and update their professionals' careers.

After the training journalists reflect about the importance of training experiences also for the acquisition of knowledge in personal terms, meaning that the empowerment of competences seems to go beyond the professional capacities reaching deeper aspect of the social and intellectual life of citizens, who've have a crucial role on the fight against disinformation.

Another element of continuity refers to the opportunities to foster constructive relations with parallel projects on disinformation that are being carried out/attended by trainees and their employers.

> (…) we realise that we can all be potential fact checkers. (p. 27, C course)

> For those who are starting their professional career, this course really taught some key tools. (p. 25, C course)

4.9. Sustainability

Journalists' answers contain indicators regarding the opportunities stemming from the hybrid models of training, the valuation of spill-over derived by actual training efforts and the expansions and replication opportunities.

In general, most respondents, regardless of the attended format course, ask for the duration extension, so that topics could be more deeply discussed, as well as allow for time for practical exercises. From here emerges the possibility to repeat the experience over time, having interest and need for life-long learning programs, particularly on such dynamics and complex issues.

The attendees of *MLD* come from heterogeneous media companies, geographical territories, journalism areas and careers paths. The fact that *MLD* training was offered in multiple formats, places and duration became a differential asset that enhanced its inclusivity and accessibility.

Journalists positively evaluate the effectiveness potential of both online and offline formats, and even recognizing the added value of on-site experience as opposed to remote, they highlight the importance of reaching a wider audience and of including local and regional media into the training process.

About 10% of the respondents explicitly mention that the online offer has advantages for journalists living in different regions and cities, allowing them to combine their training with the pressures of their professional schedule.

Other positive aspects mentioned are the timing and duration of the training, as well as the fact that in this way a clear opportunity of creating a hybrid model emerges to test new engagement and assessment models of ML training and fight against disinformation.

> Do not limit the sessions to district capitals, if possible, check where "disinformation" is most frequent and offer training in those regions (p. 3, A course).

> it is an online course makes it available to more people from different areas of the country, even leading to there being different points of view because we live in different areas. (p. 34, A course)

> Probably do this twice, doubling the time of the training course, because it seems important to me to raise awareness among students and journalists on these issues. (p. 13, B course)

The issue of decentralisation of professionals refers to the importance of training having a wide coverage, considering areas more subject to news deserts (**Jerónimo**; **Sánchez-Esparza**, 2022) where the peripheral issue goes beyond the geographical dimension and may affect the quality of the work, the contents and the empowerment of local audiences.

Another important dimension is the capacity of multiplication of the effects and the creation of positive spill-overs as indicator of ML training achievement and sustainability.

Journalists answers indicate the intention of replicating obtained information to other citizens.

In this context, specific mention is made of the collaboration between trainees and other journalists, such as colleagues who have not attended the training, oriented towards sharing practical methods and ways of working that can prevent and combat disinformation.

> The information provided is important and the tools to identify disinformation are very useful. So far, the focus are those who have a formative role (teachers/journalists) and who would already have some professional obligation not to be easily "disinformed". Yet, from what we have gathered, there is still a lot of work to do here. (p. 36, A course)

> Knowledge for professional and personal use and even to teach those around me. (p. 17, B course)

By analysing journalists' statements of intentions of willing to use the acquired knowledge and tools to develop more and better professional practices (journalistic work and quality of its results), but also to raise other people's awareness and cause a wider impact, we identify the clues for the implementation of a virtuous circle of collaboration between media and wider society, which can include and extend from the projects previously referred.

Sustainability is therefore addressed by considering all agents and stakeholders interested in the process of building ML and combating disinformation. The discussion reaches the possibilities of collaboration between the media and the wider society, including the analysis of the indicators that refer to the creation of partnerships and increased contacts with the *Iberifier* project.

In the survey responses the topic of partnerships comes up through examples of direct collaborations latent and implemented between local media and schools, universities, and other civil society organisations.

Another positive mention is made to the project itself, whose knowledge is still residual, indicating that the training is an active channel of communication for *Iberifier* project and its members. Both findings from survey and interviews reinforce the importance of the practical intersection between journalistic action and educational action (**Heat**, 2021).

5. Discussion and conclusions

While the impact of effects of disinformation phenomena on audiences has been widely shown, namely through the declared concern of citizens around the world about what is real and fake (**Newman** *et al.*, 2022; **Cardoso**; **Paisana**; **Pinto-Martinho**, 2022) with this contribution we aimed to measure the perception of key-stakeholders on media literacy enablement processes – editors-in-chief, journalists, and teachers trained by journalists.

This paper focuses on the transformation process of the role that journalists play in the fight against disinformation and in the processes of ML trainings. We consider the Portuguese scenario according to the *Media Literacy Index 2022* (**Lessenski**, 2022) to identify the pivotal role played by journalists within ML processes, recognizing the lack of specialised training for journalists and the potential for change if they acquire the skills that allow them to reinforce their role in checking information, as well as take on the mission of promoters of media and information literacy (**Hobbs**, 2010; 2016b).

Our results indicate that journalism and its professionals have a double role in the fight against disinformation; they are responsible for preserving and implementing fact-checking procedures that validate authenticity, relevance, and social value of news, but they also continue to nourish trust in the media system. On the other hand, they have other responsibilities regarding the roles which they are socially required to perform – that is the role of the trainer, who is an informed and trained agent in knowledge management. They have a responsibility in teacher training, as well as directly and indirectly in the training of young people, providing teachers with skills in media education/media production that impact students and school communities.

Our research assumes that ML training can be analysed accordingly with their typologies and formats (**Eisemann**; **Pimmer**, 2020) and aims to contribute to research on initiatives that address journalists as one of the main targets (**Thompson** *et al.*, 2022).

Iberifier project supports and develops different ML materials and trainings developed starting from a strong and updated scientific evidence base, oriented to critically discuss, comprehend and intervene in the processes of fake news' creation and detection, featured by the explicit adoption of journalistic practices' means and tools (**Dumitru**; **Ivan**; **Loos**, 2022).

The observed trainings provided in Portugal results from a combination of models proposed by **Eisemann** and **Pimmer** (2020) mixing component of proactive training and critical approaches , since interventions consisted of interactive tasks, such as role-playing, simulating scenarios and activities brainstorming sessions and debates, integrating both presentations and concepts based on scientific evidence, and examples (shown through audiovisual materials) to develop independent tasks, contents' production and verification exercises and critical analysis (**Dumitru**; **Ivan**; **Loos**, 2022, 43).

In the collected data, much of the challenges faced by media literacy enablement agents are due to today's media and mediation environment, where self and user mediation processes take place and generate attrition both in social practices and perceptions (**Cardoso**, 2023).

A remark is about the analysis aim of guaranteeing that these projects operate in a continuous, scalable, and flexible fashion (**Tomé** *et al.*, 2023).

> The positive offset of media literacy training can be characterised as related to the three dimensions: continuity (media literacy tools as an extension of previous and existing skills, competencies and initiatives), collaboration (opening up journalistic structures to interaction with other spheres, either other media structures or academia / specialist actors) and sustainability (media literacy as an inductor for the sustainability and survival of journalism)

Our findings consider different action categories (**Heath**, 2021), which are evident in the statements that imply intervention by the journalistic, educational, and scientific communities but also by governments and global technology companies. We intend to provide a holistic perspective on the practices involving journalists (and other stakeholders such as teachers and researchers) in controlled ML environments where the implementation of training aims to form active and responsible citizens on what concerns media content production and disinformation dissemination.

The analytic processes support the definition of three common macro-categories to assess the quality and impact of ML training: Collaboration, Continuity and Sustainability.

We conclude that these three dimensions are key drivers for both the scholars' community intending to study ML processes, as well as for ML training providers, trainers, evaluators and monitoring bodies interested in observing efficiency, effects and impact.

Collaboration is understood by editors-in-chief as a means for boosting the development of more integrated and efficient media systems, particularly when it comes from the need to have better work conditions for journalists and technological supporting tools to perform their roles. Collaboration is a key-factor to create advocacy and to sustain part of the media ecosystem. Findings show that in ML training journalists are trainers and trainees, and how in both cases, the collaborative relationship with the other side of pedagogical tie is a key driver to establish effective connection and sharing. Collaboration spreads over the trainer-trainee relation encompassing more stakeholders, and journalists proactively have to and want to be disseminators of ML in their newsroom and society (**Eisemann**; **Pimmer**, 2020).

Continuity is, thus, the second strategic dimension to include, because it is a bridge that moves and incentivizes professionals, often overloaded by work charge and pressure, and poorly trained and supported by their media companies.

Continuity ensures the bridge between training contents' quality and professional practice. It can also serve to ensure the ML principles and effectiveness in educative and journalistic culture, at both levels of projects already in place in the newsrooms, schools or parallelly developed by ML trainees and their communities.

The sustainability dimension refers to the current dangers and problems pointed out by respondents and to the possible answers. Journalists assumed the possible dissemination of disinformation from content on social media platforms, the challenges to maintain their work quality sustainable and to face the pressure of platformization (**Van-Dijck**; **Poell**; **De-Waal**, 2018; **Poell**; **Nieborg**; **Duffy**, 2023) relations, to replicate the positive effect of training, as well as on the establishment of partnerships that we consider fundamental to organise a process of continuous training, monitoring, assessment.

Replication is a driver to multiply and spread training effects in the wider society, but also to replicate training opportunities for journalists.

Our analysis reveals further links between the deontological and journalistic mission, elements of authenticity. Journalist editors-in-chef recognize that that the importance and effectiveness of "internal" measures would be enhanced by "external" measures within the newsroom.

Journalists are favourable to forms of integration and collaboration between them and different professional figures in the creation of journalistic content to be disseminated through social network platforms. Among these external measures, journalists once again refer to the creation of projects that foster enhanced media literacy, with particular attention to school communities and young people.

Partnerships should therefore include journalists and other communication professionals, but also education professionals and their schools to improve skills in creating, interpreting and decoding various types of content.

As observed in the journalistic sphere, this effect is evident in the degradation of the daily working conditions of journalists, which operate at a performative and algorithmic induced rhythm, where editorialized structures compete among themselves to meet the demands of the platforms upon which they depend (**Van-Dijck**; **Poell**, 2013).

It should be noted that these pressure systems apply to people as well as structures - the contemporary media environment is prone to the clash between legacy media brands and new media, digital-born or not, and reflects the confrontation between different operating logics. The overwhelming impact and pressure felt in journalism is, therefore, a consequence of the confrontation between algorithmic culture and journalistic culture.

The aspects extracted from the analysis of all three samples contribute to increasing the difficulty of handling disinformation and misinformation phenomena in the wider democratic public sphere. As enablement agents, both teachers and journalists recognize the importance and centrality of media literacy focused training, as a way of building skills among professionals (of information as well as education) and enabling for a better relationship between their target audiences and the mediated environments in which they interact.

> We suggest improvements to the methodological-operational process to involve journalists, to do follow-up, evaluation, and implementation of wider training projects, contributing to applied research

The positive offset of media literacy training can therefore be characterised as related to the three dimensions referred in the methodology section: continuity (media literacy tools as an extension of previous and existing skills, competencies and initiatives), collaboration (opening up journalistic structures to interaction with other spheres, either other media structures or academia / specialist actors) and sustainability (media literacy as an inductor for the sustainability and survival of journalism).

The discussion of results from journalists' interviews allows to understand the potential contribution of the implementation of ML training with a focus on disinformation, from the professional perspective, considering positive implication for:

- the continuity of journalistic work because it does not conflict with traditional verification practices, but on the contrary can strengthen and sophisticate them.
- the collaboration of journalists with other colleagues working for the same organization and responsible for communication, IT, digital and social media marketing units, as well the collaboration between journalists and partner organisations, which could be other media organizations, schools, education and research organization, but also sponsor or advertisers.
- the sustainability of professional practice embedded within media economic system, supporting the development of quality verified content and the opportunity for media to validate and communicate their fact-checking procedures to audiences, within a virtuous cycle which can increase citizens' trust and recognition of journalistic work and potentially their willingness to pay to access journalistic contents.

Therefore, we can suggest that media literacy and literacy against disinformation relate to:

- the continuity of journalistic work because it does not contrast with verification procedures but includes them and requires protocols and activities based on human skills and on technological support, which needs continuous updating and innovation. It should be noted that, especially among journalists, new media literacy-led skills and competencies do not replace traditional journalistic tools, but rather act as a new and complementary set of tools which allow for journalists to conduct their tasks.
- Many forms of collaboration, that could extend from internal collaboration in the newsrooms (between different teams and units such as journalists, marketing, IT, boards, HR) to forms of collaboration between media and other organizations (i.e. external fact-checking, partner to complement training with technological tools, events and seminars, local schools, and universities), and multistakeholder consortia such as *EDMO* hubs.
- The sustainability of journalistic practices, the enhancement of individual and teams' work, but also sustainability of the news media industry ecosystem.

In a context where there is a direct overlap and confusion between journalistic and non-journalistic content in the digital platforms, media literacy training functions as a positive differentiation factor for journalism and journalism professionals, which may ultimately result in increased resilience for media brands which are struggling to secure the trust of audiences and to come up with sustainable business models.

We argue that the aspects of deontology, professional practices and management / business sustainability cannot be dissociated, and media literacy for key stakeholders may itself be made into a trickle-down factor which empowers audiences and the public sphere.

As presented in the discussion of results, media literacy training must be continuous, permanent, and increasingly inclusive, targeting a wider range of professionals and aiming to become ever more holistic in its scope and approaches.

In Portugal we observed an example of the implementation of mid-term investment by different media literacy enablers and stakeholders, which led to the construction of multi-channel and multiple-players interventions.

Answering RQ1 (Can Media Literacy training serve as an actionable tool for journalists and newsrooms to counter internal and external pressure inducing factors?) we find that while the topic of media literacy training is very contemporary and stands at the centre of the discussion on the current conceptual status of media literacy, our findings suggest that a) there is a systemic lack of training and skills / competencies update for journalists in Portugal and b) the training is sought for by journalists themselves, not being systematically and a periodically promoted by employers in newsrooms. The responsibility of acquiring new competencies falls on journalists, which already face huge pressure due to the degradation of their working conditions, low pay and increasingly high-pressure environments. Answering RQ1, our findings suggest that making ML training as available as possible and as integrated as possible into the schedule of journalists is of paramount importance. Availability and easy access is the most prevalent need on this matter. As for the remaining topics, regarding the enabling power media literacy has on making journalism become more resilient and immune to external threats, the findings corroborate that understanding.

Answering RQ2 (Which methodologies can be used by journalists and journalism's experts to function as

> Collaboration, continuity, and sustainability allow for the development of theoretical-practical dimensions of the processes for evaluating innovative training against disinformation

trainers and inoculation agents?) we find that the continuity with the journalistic practice and the adoption of journalistic professional tools combined with evidence-based contents are rewarding in proactive and critical ML training. Another important aspect is the need to work internally (within newsroom) and externally (with audiences) to enhance the valuable features and the specificity of journalistic contents. Thus the differentiation of journalistic content is of the utmost importance, i.e., the ability to differentiate journalistic content in regards to other content and in particular informative non-journalistic content. Promoting there will improve the immunity of journalism to the growing emulation of its style and appearance on digital environments. Furthermore, ML training should promote skills and competencies that allow for the development of digital, and social media native journalism, around content that is specifically made for interactive and fast-paced environments.

Regarding RQ3 (Which themes, tools and assessment dimensions can be implemented in order to improve the quality of training?) we find that despite the success on the evaluation of ML training initiatives and the success of media literacy training initiatives themselves, measures should be taken to make training as relevant and as topical as possible, for example, enable pre-training exploratory focus groups with trainees in order to assess the specific challenges and needs of journalists. Contemporary media environments are fast paced, and disinformation phenomena are prone to drastic changes both in content and format. Therefore, training must be fluid and dynamic in order to be as adaptable as possible to the needs of journalists and journalism professionals.

As an improvement system for future training systems, it is of paramount importance to create evaluative structures which focus not only on the feedback from trainees but also on the results of their subsequent interaction with their target audiences, be their students, teachers, other journalists, or audiences.

These contributions will lead to valuable input to professionals and researchers alike.

It should be noted that, due to the increased pace of today's media ecosystem, reference concepts and materials should also reflect the evolution of said ecosystem, integrating new platforms (i.e. *TikTok*) and technologies such as AI (i.e. generative AI such as *ChatGPT*).

Ultimately, the creation of permanent and cross-sectional evaluative structures for media literacy training will lead to the improvement of current theoretical models as well as the creation of new operative concepts, which may help shed light on the evolution of both the media ecosystem and the democratic public sphere.

6. Note

1. Significance was described as: the size of the target group; the total budget; success in terms of outcomes; the level of public awareness of the project, and the level of engagement of the targeted groups.

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8. Appendix 1

Content analysis grid of the *MLD* trainees' answers

Category	Subcategories	Indicators
Collaboration	Trainers and journalists	Scientific approach Development of skills and tools Materials and practical examples
	Among trainees	Interaction and interactivity Experiences and practical examples
	Journalists and other colleagues	New professional practices and materials
	Media and society	Professional tools and practices Quality of result and its impact
Continuity	Training and professional practice	Quality of content
	Projects	Internal actions Parallel projects
	Journalistic culture	Deontology and verification methods
Sustainability	Replicate Training	Offer improvement
	Improve the training workshop Spill-over of training efforts	Duration and Schedule Type of activity Content Resources
	Hybrid model	Online/Offline
	Establish partnerships	Communication and dissemination of the offer

Source: *Iberifier* project.