
Miscellaneous

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Future journalists' fight against disinformation: analysis of university training offers and challenges in the Spanish context

Abstract

Disinformation has become a global problem affecting mass media, governments and citizens globally. Besides the loss of trust in the media and its weakening influence, exposure to all manner of messages on social media in recent years has paved the way for disinformation, which has become a considerable challenge for journalism. According to the 2022 Edelman Trust Barometer, Spain is one of the countries most concerned about this phenomenon (Edelman, 2022). However, is this concern shared by Spanish journalist associations? What training initiatives are being carried out for future journalists to counter the spread of disinformation? How should fact-checking be taught in university? This study aims to answer these questions by using a dual methodology. First, a review and analysis were undertaken on the different training initiatives for bachelor's and university-specific master's degree students. Then, 15 in-depth interviews were conducted with experts, including fact-checkers, experienced journalists and representatives of sectoral associations, to ascertain their views on fact-checking and disinformation. The main results show that Spanish universities offer few training fact-checking-related initiatives, particularly at bachelor's degree level, although more and more university-specific degrees and master's degrees on this topic are becoming available. Furthermore, most interviewees view specialised training for the next generation of journalists as a key factor for fighting disinformation, and they provide guidelines to achieve this.

Keywords

Disinformation, fake news, fact-checking, journalism, Spain, university, training.

1. Introduction

The economic, professional and credibility crises (Nielsen, 2016), which have plagued journalism for decades, are reflected in recent changes to the media ecosystem, in which information disorder (Wardle & Derakhshan, 2017) marked by the so-called global infodemic (García-Marín, 2020) has taken hold. In this scenario, where "ASAP" journalism predominates (Usher, 2018) and information –and disinformation– is spreading at an uncontrollable speed,

journalism has lost its monopoly as gatekeeper (Allcott & Gentzkow, 2017) and has gradually distanced itself from its traditional public service function. Consequently, journalism has lost power and influence to the benefit of the new public agora: social networks.

Therefore, it has become more necessary than ever for journalism to disseminate complete and truthful information to help citizens understand what is happening in the world and, ultimately, to enable them to actively engage as members of society (Christians *et al.*, 2009). According to this premise, the fact-checking process emerged in the first decade of the 2000s in the United States to counter falsehoods in political discourse (Graves, 2016, 2017; Nieminen & Rapeli, 2019), first in election campaigning, and later to debunk fake news and viral hoaxes circulating on the Internet (Nicey, 2020). Nevertheless, fact-checking is said to have come into being to combat the “home-grown element” of disinformation in any of its forms (Aguaded-Gómez & Romero-Rodríguez, 2015, p. 46), which currently poses one of the major challenges for journalism (Herrero & Herrera-Damas, 2021).

Against this backdrop, fact-checking has grown unremittingly. The latest report by The Duke Reporters' Lab shows that in June 2022, there were 391 active verification initiatives worldwide. The relevance and transversality of the movement represent an opportunity for journalism (Fernández-García, 2019) and show that, despite the adversities, the profession always seems to find ways to reinvent itself to survive; in this case, through initiatives mainly originating from outside the traditional media.

Some experts regard fact-checking as a professional reform movement (Graves, 2013), even a new democratic tool or institution (Amazeen, 2020; Graves & Cherubini, 2016); one that seeks to restore credibility and public trust (Nicey, 2020) by reclaiming the traditional values of journalism (Graves, Nyhan & Reifler, 2016), or what some describe as the profession's return to its roots (Moreno-Gil, Ramón-Vegas & Mauri-Ríos, 2022).

What is happening in the Spanish context, how are future journalists being prepared to address the social challenge of disinformation, and how do the experts view this? To answer these questions, which no previous research has addressed, we surveyed the curricula of Spanish universities to find out what verification-related degree programmes are available at bachelor and postgraduate levels. We also conducted 15 in-depth interviews with experts in the journalism sector to gauge their impressions of the offer.

2. Fact-checking and media literacy

The new generations of journalists are fully immersed in the so-called “fake news culture” (Magallón-Rosa, 2019, p. 23) in a digital communication ecosystem marked by oversaturation and infoxication (Aguaded-Gómez & Romero-Rodríguez, 2015). Moreover, in what has been described as the post-truth era (Lewandowsky, Ecker & Cook, 2017), fact-checking, beyond a possible career path, has become unavoidable for journalism students' university education and job training. The process has become particularly relevant given the impact of false information at all levels: from the private sphere of social media networks to the political sphere, not to mention the direct threat this phenomenon poses to democracies.

According to the *Digital News Report* (Reuters Institute, 2022), the level of trust in news does not reach 50% on a global average (42%), although these data vary considerably between countries: Finland boasts overall trust levels of 69%, while in the United States this figure stands at 26%. Interest in news has declined overall to 51% in 2022. In addition, many young and poorly educated people avoid news, claiming it is difficult to follow or understand. Subscriptions to paid media platforms remain low, even in countries such as Germany (14%), France (11%) or the UK (9%). Levels of concern for disinformation vary from over 70% in African countries such as Kenya and Nigeria to barely 30% in Germany and Austria. In Spain, trust in news stands at 32%, well below the global average, and payment for information consumption is at 12%, in a context in which the vast majority of people access information on their smartphones (75%). Compared to podcast consumption (41%), television consumption

continues to fall, especially among the young. Notwithstanding, the Edelman Barometer (2022) reports that Spain is the country most concerned by disinformation.

2.1. Verification as part of the university curriculum

Frau-Meigs (2019) explains that the shift from Web 1.0 to Web 2.0 –or, as Jenkins (2009) puts it, from the old linear concept of traditional media to the participatory multimedia web– with its attendant opportunities and risks, as well as threats to contemporary democracies, signalled a significant paradigm shift that implies a rethink of how we perceive education and skills and, in turn, media literacy.

Training in fact-checking is part of media literacy that needs to be reconsidered and incorporated into the university curriculum, as academia has been long demanding (Ufarte-Ruiz, Peralta-García & Murcia-Verdú, 2018) given the apparent disconnect between the university and the professional world, for which both parties are responsible (Usher, 2017). In the United States, the cradle of fact-checking, most teachers believe journalism education needs to be updated to evolve and adapt to industry changes. However, one of the challenges facing curricula innovation “is [the] divide between the teachers’ existing skills and the technical training they need to keep up with the technological advances already in use within the industry” (Kothari & Hickerson, 2020, p. 215).

A recent study comparing the views on disinformation and media literacy of upper secondary school teachers in Sweden, France, Spain and Romania (Nygren *et al.*, 2022) shows that Spanish teachers believe that the absence of media literacy in the classroom is a central issue. Although they are not sufficiently trained to deal with disinformation, teachers do express interest in self-training and keeping abreast of their students’ Internet uses and practices.

Research by Kothari and Hickerson (2020) observes that even though university programmes are introducing new courses and reviewing old ones, in response to the changes brought about by automated journalism and disinformation, students still struggle to distinguish fact from opinion or fake news.

However, before drawing a direct link between media literacy –understood as a whole– and improved expertise in identifying fake news, Jones-Jang, Mortensen and Liu (2021) deem it necessary to distinguish between the different forms or categories of media literacy. While a priori a critical understanding of media messages and media systems (information literacy) and the skills to navigate and locate information efficiently and accurately (computer literacy) are essential for identifying fake news, practice shows that it is the latter that genuinely makes the difference.

In short, despite agreement on the importance of media literacy and its necessary inclusion in educational environments as a first response to disinformation, some experts remind us that rather than “giving a fish,” it is more important to “teach how to fish.” In other words, instead of teaching the basic tools or skills, it is essential to foster critical thinking and carry out the preparatory work for “deconstructing the media” (McDougall, 2019, p. 42).

2.2. The Spanish context

Together with the countries that belong to the so-called Mediterranean or Polarized Pluralist Model (Hallin & Mancini, 2004), Spain counts on a highly polarized media system, characterized by high levels of political parallelism, instrumentalization of the media by governments, a low level of professionalization, and the lack of media accountability instruments.

Recent research on news consumption habits among Spanish university students (Soengas-Pérez, López-Cepeda & Sixto-García, 2019) reveals that most recognise saturation, redundancy and duplication in news content despite the vast offer currently available. The study also shows that a significant number of university students do not follow current events closely: more than 70% do not check the news or seek further information about an event,

feeling content with a single version of the facts, while more than 40% express no concern for fake news. Most of the younger journalists, in particular, view verification initiatives as potentially valuable for investigative journalism, although they are largely unfamiliar with or ambivalent about these services (Brandtzaeg, Følstad & Chaparro-Domínguez, 2018).

The few field studies undertaken on media education in Spain underscore the importance of teacher training, regardless of specialisation (Martínez-Fresneda, 2010; Walzer, 2011), as one of the major challenges to ensuring that citizens and students receive proper instruction (López-Romero & Aguaded, 2012).

According to Aguaded-Gómez and Pérez-Rodríguez (2012), the youngest citizens, the so-called digital natives, are not competent enough in the critical and ethical aspects of media literacy. Moreover, other research also suggests that the media competence of Spanish schoolchildren and young people has yet to reach the optimal level of media literacy (García Ruiz, Ramírez García & Rodríguez-Rosell, 2014).

These findings suggest a need to reconsider adding media education to the school and university curricula as an interdisciplinary compulsory subject (Montoya, 2005). This is particularly relevant for journalism and audiovisual communication programmes, since future journalists must be trained in verification skills, which are essential for understanding reality, reporting on it and helping audiences become media-literate. At the same time, a recent study reveals that journalism students broadly accept fact-checking and consider verifiers' work to be crucial for restoring media credibility (Ufarte-Ruiz, Peralta-García & Murcia-Verdú, 2018).

With a view to future journalism curricula planning, Herrero-Diz, Pérez-Escolar and Varona Aramburu (2022) identify the following verification-related competences to include in a subject on fact-checking: understanding the phenomenon of disinformation, recognising and describing misleading content in a digital context, discerning truthful content from what is intended to mislead, investigating the origins and provenance of dubious content, substantiating information with data, facts, sources and evidence, and organising truthful information intelligibly.

Aware of the inherent link between verification and media literacy, fact-checking organisations have found educational activities a vital source of revenue (Kuś & Barczyszyn-Madziarz, 2020), precisely at a moment when their survival hinges on a viable business model. Verification platforms in Spain that are parties to the Code of Principles of the International Fact-Checking Network (IFCN) rely on providing media literacy initiatives, from conferences and workshops or university master's degrees in the academic sphere to verification tools and short courses published on their own websites or social networks.

Hence, it is indispensable to ascertain whether fact-checking training initiatives are currently being carried out in Spain's journalism schools and, if so, what type of initiatives and to what extent are they taught by faculty and/or professional verifiers. There is also a need to ensure that the teaching of this competence is not limited to its purely technological and instrumental dimension (Buckingham, 2005) –since the use of technology should only be a means, and never the ultimate goal (Culver & Jacobson, 2012)– leaving aside attitudes and ethics (Gutiérrez-Martín & Austin, 2012). Furthermore, in line with what Kendall and McDougall (2012, p. 27) term the “pedagogy of the inexperienced” in critical media education, these initiatives should prioritise the learning process rather than the content.

3. Objectives and research questions

The present study analyses the presence of fact-checking training initiatives within Spanish universities, whether as part of a bachelor's, official master's or university-specific degree, and examines the testimonies of 15 experts on some of the critical questions related to teaching future journalists in fact-checking.

In line with the above objectives, we addressed the following research questions:

RQ1. What initiatives are being undertaken in Spain to train future journalists to counter disinformation?

RQ2. How should fact-checking be taught in universities, according to Spanish media experts?

RQ3. What role do or should fact-checking platforms and sections in media companies perform in the training of future journalists?

4. Methodology

The research was carried out using a dual methodology: first, a survey and analysis were conducted on the different training initiatives offered by Spanish universities to students of bachelor's, official master's and specific degrees in journalism. In the second part, 15 in-depth interviews were held with experts to determine their perceptions of this phenomenon.

We first analysed the curricula of 46 Spanish universities, 26 public and 20 private, offering bachelor's and postgraduate degrees in journalism (see table 1). The review aimed to look for content fact-checking included in bachelor's, double bachelor's and master's degrees in journalism, as well as specific degrees devoted to this practice. To this end, we searched the universities' curricula on their official websites for names of subjects specifically referring to verification activities. Where a syllabus included a subject mentioning fact-checking in its name, we analysed the study topics in it. The same procedure was followed for degrees in which fact-checking formed part of the main content. Finally, we also searched for subjects whose titles contained key words such as "disinformation" and "fake news."

Table 1: Spanish universities and university centres offering Journalism studies.

Villanueva University Centre	European University
CESAG Comillas (Illes Balears)	European University of the Atlantic
CESINE Campus	European University Miguel de Cervantes
EUSA	Fernando Pessoa University
Euskal Herriko Unibertsitatea	Francisco de Vitoria University
Distance University of Madrid	International University of La Rioja
Antonio de Nebrija University	Isabel I University
Camilo José Cela University	Miguel Hernández University
Carlos III University of Madrid	Pablo de Olavide University
San Antonio Catholic University of Murcia	Pontifical University of Salamanca
Abat Oliba CEU University	King Juan Carlos University
CEU Cardenal Herrera University	San Jorge University
Complutense University of Madrid	San Pablo CEU University
University of Castilla-La Mancha	University of Santiago de Compostela
University of Extremadura	Autonomous University of Barcelona
University of La Laguna	University of Lleida
University of Malaga	University of Valencia
University of Murcia	University of Vic
University of Navarra	International University of Catalonia
University of Seville	Jaume I University
University of Valladolid	Pompeu Fabra University
University of Zaragoza	Ramon Llull University
Spanish University of Distance Education (UNED)	Rovira i Virgili University

Own elaboration.

Sources: Ministry of Education and Vocational Training and infoeducacion.es.

The in-depth interviews were conducted with media professionals, journalism sector leaders and representatives of viewers' associations from Spain. Their selection took into account criteria such as gender parity –very difficult to achieve due to the lack of women in senior positions in the field of journalism (de Montes & Vargas, 2022)–, that not all worked in the same autonomous community because journalistic cultures vary depending on the territories (Suárez Villegas *et al.*, 2017), the type of media to which they were linked –we sought the greatest number of media formats (television, newspaper, news agency, etc.) and that the media were both public and private – and age (again, we sought heterogeneity, so that not all the experts were, for instance, over 50 years old). The experts interviewed, who were contacted by email, were:

- Antonio Manfredi, ombudsman for the audience of Radiotelevisión Andaluza.
- Eva Navarrete, former Dean of the Professional Association of Journalists of Andalusia (2017–2021).
- Ignacio Aguaded, President of Grupo Comunicar.
- Karma Peiró, journalist specialising in ICT and Co-Director of the Visualisation for Transparency Foundation.
- Ismael Nafría, digital media specialist and former Director of *National Geographic* in Spain (2019–2022).
- José María Guerra Mercadal, President of the Viewers Association of Catalonia (TAC).
- Marcos Pérez Pena, journalist at *Praza Pública*.
- Alba Chao, Head of the Digital Department of *Faro de Vigo*.
- Tamara Montero, journalist at *La Voz de Galicia*.
- Maider Izagirre, Head of News at eitb.eus.
- Martxelo Otamendi, Director of *Berria*.
- Txuskan Coteron, President of the Association of Basque Journalists (2014–2022).
- Alfonso Armada, Director of *FronteraD* and former President of Reporters Without Borders Spain (2017–2022).
- Desirée García, Head of EFE Verifica.
- Nemesio Rodríguez, President of the Federation of Associations of Journalists of Spain (FAPE) (2018–2022).

The semi-structured interview format was chosen as it allows the questionnaire to be adapted to the profile of the interviewees so they can respond spontaneously to the questions raised (Alsius, 2010). This format has been used with experts in numerous investigations in the journalism field (Zuberogoitia, Díaz-Campo & Pérez-Pereiro, 2020; Parratt-Fernández, Chaparro-Domínguez & Gilbert, 2022). To gain a deeper understanding of the experts' opinions about fact-checking and the Spanish university, we developed a questionnaire comprising the following main questions:

- To what extent is the impact study on disinformation and verification platforms being implemented in journalism school curricula in Spain?
- How should fact-checking be taught at the university level?
- What coordinated actions can be developed between Spanish fact-checking platforms and sections of media companies and institutions of education, such as universities?

Due to COVID-19 restrictions, most of the interviews were conducted online via Zoom or Google Meet between March and May 202. They were recorded, transcribed, and coded using QDA Miner qualitative data analysis software. The analysis of all the responses allowed us to extract different sub-themes addressed by the experts from different perspectives, which were compared to detect similarities and differences between them (Tanner, Friedman & Zheng, 2015). All the interviewees accepted the publication of their names and reflections only for academic purposes.

5. Results

5.1. University training on fact-checking (RQ1 and RQ3)

The analysis of the curricula of the Spanish universities that teach journalism, whether as a bachelor's degree, a double degree in Journalism and another discipline, or a master's degree, clearly shows that fact-checking does not appear to be incorporated explicitly into university education.

As indicated in the methodology, our analysis focused on the degree curricula in journalism at 46 universities, 26 public and 20 private. Some of them also offer generic communication studies, which were excluded since they do not directly mention journalistic activity at the bachelor and postgraduate levels. However, three degrees in which the word "journalism" did not appear in their name were included as their wording suggested they were likely to contain some fact-checking-related content¹. The final sample consisted of 42 bachelor's degrees, 28 double degrees and 25 master's and postgraduate programmes in which fact-checking, except in some cases, did not appear as an object of study with sufficient substance to form a subject in its own right.

No subjects that included "fact-checking" in their title were found in bachelor curricula. However, there was one subject, "Good journalistic practices," in the Degree in Information and Digital Content Management, offered by Carlos III University, which mentions "Fake news (rumours, hoaxes, disinformation)." Similarly, the International University of La Rioja, in its Bachelor's Degree in Communication, in its journalism programme offers the optional subject "Digital verification and fact-checking." This was the only subject at bachelor level in Spanish universities covering the range of verification processes in the digital environment.

In general, the processes associated with accountability appear in the syllabus via the subjects of ethics and deontology. Thus, 39 of the bachelor's degrees and 20 of the double degrees contain the basic compulsory subjects of ethics, deontology and regulatory bodies. However, as key subject in journalist training, master's degree curricula do not usually include subjects on different aspects of accountability. In this sense, only Ramon Llull University's Master's Degree in Advanced Journalism Reporting has a subject on ethics.

Two of the 25 master's degree programmes reviewed have subjects directly related to verification processes or, at least, to the causes that make these processes necessary. The degrees in question are the Master's in Digital Journalism and New Narratives, from the San Pablo CEU, Cardenal Herrera and Abat Oliba universities, and the Master's Degree in Political Communication and Crisis and Emergency Management offered by Antonio de Nebrija University. The first of these two training programmes, in which the publication *El Debate* –the online newspaper sponsored by the Catholic Association of Propagandists– collaborates, fact-checking appears in the module "Analysis, positioning and management of information" along with web analytics and SEO/SEM, suggesting a direct relationship between the technical side of verification and, to a lesser extent, its ethical dimension. For its part, the Master's Degree in Political Communication and Crisis and Emergency Management includes the subject "Disinformation and election campaigns: microsegmentation in RRSS and fake news," which relates fake news to specific political processes such that, to our mind, it does not address the phenomenon in its entirety or from the verification perspective.

Finally, and also at the postgraduate level, the only specific degrees in fact-checking are: the Master's Degree in Digital Verification, Fact-Checking and Data Journalism, offered by San Pablo CEU University; the Master's Degree in Data Journalism and Fact-Checking,

¹ These three programmes are the Master's Degree in Communication Research, offered by Pompeu Fabra University, the Bachelor's Degree in Information and Digital Content Management, from Carlos III University, and the Bachelor's Degree in Communication, from La Rioja International University. The first could include fact-checking as a research process, the second presents the subject "Good journalistic practices," whose programme refers to fake news, while the UNIR programme includes the optional subject "Digital Verification and Fact-Checking."

available at University Ramon Llull; and the Master's Degree in Investigative Journalism, New Narratives, Data, Fact-Checking and Transparency, at the University King Juan Carlos.

The Master's Degree in Digital Verification, Fact-Checking and Data Journalism, offered in collaboration with the media start-up Newtral, aims to qualify the student as "a fact-checker or digital verifier, a new professional profile for countering the growing phenomenon of fake news" (San Pablo CEU University, 2022). This postgraduate training programme includes a module entitled "Digital verification: types and methodologies of fact-checking," in which verification is presented as a journalistic discipline in which activities are developed to debunk hoaxes and counter disinformation crises. In addition, the external placements are undertaken at Newtral, where students perform fact-checking processes.

One of the main objectives of the second specific fact-checking training programme, the Master's Degree in Data Journalism and Fact-Checking, is to "explore and learn how to detect fields in which data journalism and content verification can be applied as a powerful tool for knowledge and analysis" (Ramon Llull University, 2022). This Master's programme includes three fact-checking-specific subjects – "Introduction to fact-checking," "Types of fake news and how to detect them" and "Verification methods and tools" – and offers placements at Newtral and Verificat.

Finally, the most recently introduced postgraduate programmes, the Master in Investigative Journalism, New Narratives, Data, Fact-Checking and Transparency, offered by King Juan Carlos University in conjunction with the fact-checking foundation Maldita, was launched in the 2021–2022 academic year. This master's degree seeks to "train competitive professionals in new journalistic narratives and the innovation of digital news platforms and products" (Maldita, 2022), considering journalism as a public service. The programme also offers the possibility of external placements in different media companies and at Maldita.

5.2. Interviews with experts

5.2.1. The presence of fact-checking in Spanish universities (RQ1)

Half of the experts interviewed do not know whether counter-disinformation techniques are currently being taught in universities, but they do not believe they are. However, Alfonso Armada, Director of *FronteraD*, points to some steps taken in this direction at the Autonomous University of Barcelona:

I'm not very knowledgeable about it, but, for example, the new president of the RTVE Corporation, José Manuel Pérez Tornero, who worked at the Autonomous [University] of Barcelona, did begin implementing some plans and conducting studies. In fact, he had already launched some of them. Nevertheless, I don't think much has been achieved. Maybe I'm wrong, but I think very little or almost nothing has been done. And, well, it also depends a little on people's commitment.

Desirée García, Head of EFE Verifica, underscores the work the Spanish news agency EFE has done in some universities as well as the offer of postgraduate degrees in private universities:

For example, we're currently working with Camilo José Cela University to run workshops for communication students, but it's not a permanent project. And I know that San Pablo CEU launched a master's degree in verification together with Newtral. So, the only postgraduate programme on verification that I know of in Spain is run by Newtral. Besides that, we have taught workshops in many universities, but only sporadically.

According to Tamara Montero, journalist at *La Voz de Galicia*, the disconnect between the university world and the professional world implies a need for a "radical change" in the journalism curricula. Nemesio Rodríguez, former President of FAPE, notes that verification "has become a core issue in journalism. Even though information verification was already an indispensable part of journalism, it has become even more so now."

Similarly, Antonio Manfredi, ombudsman for the audience of Radiotelevisión Andaluza, points out that beyond their own subjects teachers should commit to this type of verification content.

I think we're now in a proactive phase because many instructors are teaching it. I do myself, especially when a student expresses a doubt. It's time to move from the proactive phase and incorporate this practice into the syllabus. But, I must stress that every student should feel they are a verifier, have access to and use the tools, and advocate verification themselves.

5.2.2. Formulas for introducing fact-checking at university (RQ2)

Most of the experts interviewed agree that information verification should be a key competence for future journalists because they are accountable to their audiences.

Disinformation is countered by education. This is the only strategy, not with bots or filters or with a system that doesn't depend on the receiver's prior training. So, media education must be taught in journalism schools. Not only because journalists need to be educated in media competences but also because they have to listen to and address audiences (Ignacio Aguaded, President of Grupo Comunicar).

According to Ismael Nafría, digital media expert and former Director of *National Geographic* in Spain, the relevance of these skills for professional performance means they should be taught at the beginning of the university degree:

Verifying things is an intrinsic and requisite part of journalism, so it should be among the first things taught. But, more specifically, I suspect that fact-checking projects are less well known or less prevalent in the academic world right now, and it'd be very desirable for verification to become ubiquitous.

Fact-checking is so crucial for journalism that some of the experts advocate the inclusion of subjects devoted to it, even if the journalism student does not go on to work as a fact-checker.

This type of training [in fact-checking] would be a tool for journalists in any professional role they're going to perform in the future. It'll help dispel the idea that the journalism school is conceived with the traditional journalist in mind. Indeed, the scope of professional development is broad (Eva Navarrete, former Dean of the Professional Association of Journalists of Andalusia).

Similarly, some of the experts, among them Karma Peiró, journalist specialised in ICT and Co-Director of the Visualisation for Transparency Foundation, highlight the practical aspects of fact-checking as a specific subject:

Fact-checking can be taught at the university by incorporating educators with experience in this field into the bachelor's or postgraduate degree programmes, providing ample practical experience. So, for example, in a subject we might call "Fact-checking," we could say that, in the three months that the course lasts, you have to verify 50 cases with this method and justify your verdict accordingly.

In the same vein, the former President of FAPE believes it would be one of the most attractive subjects in the degree curriculum: "Of course, there should be a subject on this topic in Journalism. I'd say it would be the most absorbing subject of the profession that can be taught. It's exciting and has everything: anecdotes, history, screw-ups... It has tremendous appeal. It'd be a marvellous subject."

5.2.3. Training actions coordinated with the professional world (RQ3)

Most of the experts interviewed underscored that coordinated actions between universities and fact-checking platforms or sections in media companies are essential. Alba Chao, Head of the Digital Department at *Faro de Vigo*, notes the impact of disinformation on the right to information and how such alliances can help to combat disinformation:

The right to information and to be well informed is a constitutional right which should be safeguarded more than it is. And one of the main threats to that right, beyond the conditions in which most journalists work, is hoaxes. I feel there should be coordination at the educational level and with other institutions to set up or support this type of [fact-checking] platform.

The Director of *FronteraD* believes coordinated actions should involve “the ministries of education, the university itself, existing [fact-checking] platforms and the media.” He also points out that this type of collaboration is already a reality “at Reporters without Borders, FAPE and universities such as the Autonomous University of Barcelona.”

Similarly, Co-Director of the Visualisation for Transparency Foundation recalls that Maldita and Newtral are already coordinating actions in the form of “individual sessions, specific seminars or webinars” and that Ramón Llull University and Maldita have even proposed a master’s degree in data journalism and fact-checking. She believes these consolidated platforms “have much to contribute in terms of methodology for young journalists studying for their degree and for those who have finished but want to specialise.” She also highlights the importance of teaching future journalists how to debunk the hoaxes they are checking:

One very interesting aspect of fact-checkers is how, after verifying the information, they explain the facts to the citizenry. These companies use illustrative graphics or infographics, which they publish on social media and so on, that clearly explain the results of their investigation. [...] I think it’d be very interesting if all these initiatives could be taught in the faculty.

Other experts, such as the Head of EFE Verifica, encourage collaboration between fact-checking platforms and universities to “draw up a media literacy-related school or academic curriculum.” She also believes that collaboration between university researchers and fact-checkers is indispensable given the former’s specialised knowledge of disinformation: “We also need researchers to tell us who is behind the disinformation in circulation, what the dynamics are, why it is happening... To understand it, to know how to tackle it. This is extremely important for fact-checkers to develop technological tools to collaborate with the university.”

However, some of the experts note a lack of collaboration from universities, which often have no presence in specialised forums on this subject:

At the state level, an expert working group, the Security Committee, was set up to combat disinformation. There are only two or three universities involved in this project, although the group does include journalists’ associations and professional associations, which are very interested in knowing what will happen, how they want to regulate it, and how they intend to tackle disinformation; and Maldita and media are also involved. Perhaps the universities are not always in tune with the profession (Eva Navarrete, former dean of the Professional Association of Journalists of Andalusia).

6. Discussion and conclusions

Despite the consensus on the need to introduce media education into the school and university curriculum as a first step in the fight against disinformation (Herrero-Diz, Pérez-Escolar & Varona Aramburu, 2022; Kothari & Hickerson, 2020; McDougall, 2019; Montoya, 2005; Nygren *et al.*, 2022), to date no study in the Spanish context has specifically investigated how journalists are trained to combat this social challenge.

The review of the journalism curricula in Spanish universities yielded a final sample of 42 bachelor’s degrees, 28 double degrees and 25 master’s degree programmes, indicating that despite a growing interest in fact-checking among universities, its presence remains scarce, and it is not, in general, an activity that features specifically in subjects specialising in verification for future journalists (RQ1).

The results of our study bear a resemblance to the findings of the study by Kothari and Hickerson (2020), showing that university degree programmes in countries such as the United States and the United Kingdom were beginning to include counter-disinformation content.

The experts interviewed acknowledge they do not know the true extent of fact-checking training in the Spanish university curriculum, but most believe there is little to speak of, despite the social necessity for this practice (RQ1). The disconnect between the university and the professional world, denounced by the experts, bears out the findings observed in previous research (Ufarte-Ruiz, Peralta-García & Murcia-Verdú, 2018).

Some of the experts interviewed stressed that the journalist's obligation to receive training in fact-checking goes hand in hand with their responsibility to educate their audience (RQ2). Thus, teaching future journalists how to verify information "would place these students at the forefront of knowledge and innovation and, by the same token, would turn them champions of a journalism that is more credible and transparent in its processes" (Herrero-Diz, Pérez-Escobar & Varona Aramburu, 2022, p. 246).

Regarding the hypothetical content of a subject on verification, various interviewees agreed that training in fact-checking should begin with basic teacher training, in line with the contributions of other studies (López-Romero & Aguaded, 2012; Martínez-Fresneda, 2010; Walzer, 2011). Some of the participants in this research also stated that teachers are ill-trained in media, which coincides with the results of recent investigation (Kothari & Hickerson, 2020; Nygren *et al.*, 2022), and demanded a more practical education, prioritising the learning process rather than the content, in accordance with previous research (Kendall & McDougall, 2012).

Coordination between the university and the professional world was another key question raised at the beginning of this research. The experts interviewed agree on the need for a joint effort between universities, verification platforms and the media, as well as educational authorities (RQ3), a demand that academia has been doing for years (Ufarte-Ruiz, Peralta-García & Murcia-Verdú, 2018) concerning the incorporation of fact-checking into the university curriculum amid a factual disconnection between the academic and professional spheres (Usher, 2017). In turn, the collaboration of university researchers is vital for fact-checkers to learn about other aspects and trends linked to disinformation, as the interviewees highlight. The coordination of efforts is crystallizing in the specialized training of the growing number of master programmes, a trend that should be monitored in the following years.

This study represents a first approach to disinformation and fact-checking in the Spanish university context from the point of view of experts in the field. Given its exploratory nature, this topic should be expanded in further studies. Thus, on the basis of our results, future studies on fact-checking training should analyse in depth the content and teaching methodologies currently offered by the master's degrees we reviewed, as well as future journalists' perception of this specialised training offer. It would also be relevant to investigate the presence of verification-linked training actions in the school context, both in primary and secondary schools and in pre-university and baccalaureate education, as first steps in the fight against disinformation. In a broader sense, future studies should delve into the need for media literacy to become part of the school curriculum at all educational stages and levels –regional, national and supranational– and also into teachers' and students' perceptions of the issue.

Moreover, international studies could compare training initiatives in fact-checking that are being carried out in different countries, including Spain, with a view to ascertaining the relevance that each country attaches to this journalistic specialisation with a great social impact.

Finally, this research paves the way for new studies that aim to make a content proposal for fact-checking courses within bachelor's, official master's and specific degrees in journalism in different geographical contexts.

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