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by Yearry Panji

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Fact-Checking With Machines: Journalism Students' Perceptions of AI and the Ethics of Counterspeech

8

Yearry Panji Setianto 

Department of Digital Journalism, Universitas Multimedia Nusantara, Indonesia

Correspondence: Yearry Panji Setianto (yearry.panji@umn.ac.id)

3

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Abstract

This article examines how journalism students in Indonesia negotiate ⁵the integration of artificial intelligence (AI) into fact-checking and counterspeech practices within journalism education. Drawing on practice theory, the study conceptualizes AI as part of the material dimension of journalistic practice and explores how its use reconfigures the relationships between materials, competence, and meanings. The study draws on elicitation interviews in which students explored conventional and AI-assisted fact-checking and reflected on how each shaped their verification practices. The findings show that students adopt a hybrid approach, using AI to enhance efficiency without replacing established verification routines grounded in mainstream media and official sources. While AI tools highlight time-saving capabilities and assist in generating counterspeech, students continue to rely on traditional methods in situations requiring greater human judgement. This suggests that AI is integrated as a complementary resource rather than a substitute for journalistic judgment. However, AI-assisted fact-checking practices raise concerns about the erosion of critical evaluation skills. More importantly, the findings reveal tensions in the meanings underpinning journalistic practice. Students frame fact-checking and counterspeech as ethical and interpretive activities, emphasizing transparency, responsibility, and authenticity. Overall, the study argues that AI integration reshapes not only the workflows but also the normative foundations of fact-checking and public engagement, highlighting the need for human-centered and ethically grounded journalism education.

Keywords

artificial intelligence; counterspeech; digital literacy; fact-checking; journalism education; media ethics

1. Introduction

The rapid growth of dis/misinformation on social media has significantly intensified the challenges faced by journalists in verifying information and maintaining constructive public dialogue. False or misleading content can now circulate across digital platforms at unprecedented speed, often amplified by algorithmic recommendation systems and networked user participation (West, 2017). Fact-checking initiatives have become an important mechanism for safeguarding the integrity of information in digital public spheres (Graves & Amazeen, 2019; Graves & Cherubini, 2016; Singer, 2021).

At the same time, the emergence of artificial intelligence (AI) technologies has begun to reshape how fact-checking work is performed (Chen, 2025). AI-assisted tools are increasingly used to support journalists in detecting misleading claims, verifying digital content, and moderating online discussions. For example, AI systems can help identify patterns of misinformation and detect manipulated media such as deepfakes (Canavilhas & Ito, 2025; Cazzamatta & Sarisakaloğlu, 2025; Dierickx et al., 2023).

Scholarly attention to AI-assisted fact-checking has grown alongside these technological developments (Dierickx et al., 2024; Grönvall, 2023; Vizoso et al., 2021). However, much of this research has focused primarily on the adoption of such technologies within professional newsrooms, particularly in Western media contexts. As a result, relatively little is known about how AI-assisted fact-checking practices are being explored or developed in other parts of the world, including the Global South. Moreover, the majority of existing studies emphasize technological efficiency and newsroom workflows, while paying less attention to the ethical and professional implications of AI-mediated fact-checking practices in non-newsroom contexts.

These limitations are particularly significant when considering journalism education (Farrer, 2017). Universities and journalism schools play a critical role in preparing future journalists to navigate evolving journalistic practices (Bjørnsen et al., 2007; Severijnen & de Haan, 2024). Yet research examining how journalism students encounter and interpret AI technologies during their training remains limited (Biswas & Bland, 2024; Fernández Barrero et al., 2024; Jiang & Rafeeq, 2025). Investigating how journalism students engage with AI-assisted fact-checking therefore provides an opportunity to observe how professional norms, ethical considerations, and technological possibilities are negotiated at an early stage of professional formation.

This study addresses said gap by examining an educational project in which journalism students in Indonesia used AI-assisted fact-checking tools. The project was designed as part of a journalism course that introduced students to contemporary fact-checking practices while simultaneously encouraging them to experiment with AI tools in identifying misinformation and to develop forms of counterspeech—responses intended to correct misinformation and promote constructive dialogue in online spaces (Obermaier et al., 2023).

This article explores how journalism students perceive the role of AI in fact-checking practices, as well as how technologies shape their reflections on journalistic ethics and responsibility. By focusing on the perspectives of journalism students in Indonesia, this study contributes to the emerging scholarship on AI in journalism by highlighting experiences from a Global South context.

This article addresses the following research questions:

RQ1: How do journalism students perceive the role of AI in detecting misinformation and supporting fact-checking practices?

RQ2: How does the use of AI shape students' ethical reflections on fact-checking, counterspeech, and journalistic responsibility?

RQ3: What tensions emerge between automated tools and traditional journalistic values such as editorial judgment, authenticity, and accountability?

37

2. Literature Review

2.1. AI, Fact-Checking, and Journalism Education

Scholars have increasingly examined the “AI turn” (Dodds et al., 2026) and how it is reshaping the journalistic landscape. This includes its effects on news gathering, verification, and distribution, as well as audience reception of AI-assisted content (Arnedas & Simon, 2023; Kotenidis & Veglis, 2021; B. Lin & Lewis, 2022). Within fact-checking practices, AI has emerged as a critical tool for addressing the scale, speed, and complexity of misinformation circulating across digital platforms (Cazzamatta & Sarisakaloğlu, 2025; Yuliani et al., 2019, 2020). In fact, AI systems are now embedded across multiple stages of the fact-checking process (Diakopoulos, 2019; Shao et al., 2018; Shu et al., 2020).

Recent scholarship has also addressed how journalism education institutions are responding to the rise of AI (Diakopoulos, 2019; Jiang & Rafeeq, 2025). Existing studies highlight tensions between technological experimentation (Gómez-Diago, 2022) and the ethical use of AI (Demmar & Neff, 2023; Luttrell et al., 2020). Another study has also found that while they are encouraged to adopt AI, students are simultaneously expected to develop critical evaluation skills and understand the limitations of automated systems (Marconi, 2020). At the same time, journalism educators are urged to integrate AI literacy into the curriculum, despite the limited knowledge and practical expertise of many instructors (Wenger et al., 2025).

However, limited attention has been given to how journalism education integrates AI into fact-checking curricula. While several studies have examined the development of fact-checking courses in different countries (Babacan et al., 2025; Kajimoto, 2023), Wake et al. (2024) argue that fact-checking education remains underexplored and rarely forms part of the core curriculum in many universities.

Addressing this gap is important in Indonesia in particular and Southeast Asia in general, where misinformation circulates within highly platformized media environments characterized by rapid digital adoption and uneven levels of media literacy (Gomez & Ramcharan, 2023; Sinpeng & Tapsell, 2020). Studies in the region have examined how fact-checking organizations contribute to debunking misinformation related to politics, health, environment, and other public issues (Rahmawan et al., 2024; Sultan et al., 2025) while also suggesting that verification practices are shaped by local infrastructural constraints and cultural norms.

Despite this growing body of research, limited attention has been paid to how journalism students in Indonesia engage with AI-assisted fact-checking within educational settings, thus leaving the pedagogical and ethical dimensions of AI-assisted verification underexplored.

2.2. Counterspeech and the Ethics of Responding to Online Harm

Counterspeech is commonly defined as a direct response to harmful, hateful, or misleading expressions that seeks to challenge and mitigate their impact (Barnidge & Rojas, 2014; Benesch, 2014). Bahador (2021, p. 509), for instance, describes counterspeech as “communication that directly responds to the creation and dissemination of hate speech with the goal of reducing harmful effects.” Rather than relying on censorship or content removal, approaches that are often legally constrained or normatively contested, counterspeech operates on the principle that harmful speech is best addressed through more speech. In the context of misinformation, counterspeech may take various forms, including factual refutation, exposing inconsistencies, and the strategic use of humor or empathy to engage audiences who might otherwise resist correction (L. Lin et al., 2026). As such, counterspeech not only aims to correct false claims but also to influence how audiences interpret and respond to problematic content.

At the same time, the growing integration of AI into fact-checking and content moderation complicates the ethical and practical foundations of counterspeech. While automated systems enable responses to misinformation at unprecedented scale and speed, they often lack sensitivity to cultural nuance, contextual meaning, and the dynamics of political discourse (Gillespie, 2018). This creates a tension in which the journalistic pursuit of truth becomes entangled in a technological “arms race,” requiring increasingly sophisticated tools to counter emerging forms of manipulation such as deepfakes and synthetic media. In parallel, journalism’s traditional watchdog role is expanding toward forms of algorithmic accountability, as journalists are increasingly tasked not only with scrutinizing misinformation but also with interrogating the biases and power structures embedded in automated systems (Diakopoulos, 2015).

Beyond these structural transformations, counterspeech also raises important questions about the emotional and normative dimensions of journalistic work. Engaging with harmful or abusive content frequently exposes journalists to sustained hostility, including harassment, threats, and graphic material. Posetti et al. (2020) characterize such environments as forms of psychological strain that contribute to stress, anxiety, and professional burnout. Thus, AI-assisted tools may help alleviate some of the emotional burden by supporting or automating responses to large volumes of toxic content. However, this delegation introduces new ethical concerns, particularly regarding authenticity and moral intent.

Also, the effectiveness of counterspeech is shaped not only by factual accuracy but also by its perceived sincerity, empathy, and credibility (Benesch, 2014). While authentic, human-centered responses can foster trust and reinforce shared norms, automated or semi-automated interventions often lack the relational qualities necessary to influence polarized audiences. Furthermore, counterspeech strategies involve an inherent ethical tension between correcting misinformation and engaging constructively with those who propagate it. Research suggests that approaches incorporating empathy and affiliation may be more effective in reducing resistance and encouraging attitudinal change (Braddock & Horgan, 2016). In this sense, counterspeech extends beyond correcting falsehoods to discouraging harmful behavior and upholding the integrity of public discourse, aligning with broader arguments about moral responsibility in digital communication (Ward, 2015).

2.3. Practice Theory and Technological Mediation in Journalism

This study adopts practice theory as its analytical framework, which conceptualizes social life as constituted through practices—organized, recurring nexuses of actions, materials, and discourse that unfold across time and space and are sustained by shared practical understandings (Schatzki, 1996, 2001). These practices function as flexible cultural schemas, allowing for variation, reinterpretation, and change as individuals engage differently with the same situations over time (Ahva, 2017; Couldry, 2004; Ryfe, 2018, 2021).

Practice theory offers a way to move beyond individualistic or institution-centered accounts of journalism by conceptualizing it as a set of socially and materially situated practices (Ahva, 2017; Deuze & Witschge, 2018). As such, journalism is not simply the product of individual decision-making or organizational routines, but emerges through the interaction of tools, skills, and shared meanings (Ahva, 2017; Shove et al., 2012).

Drawing on the work of Schatzki (2001) and Shove et al. (2012), practices can be understood as configurations of three interconnected elements: materials, competence, and meanings. Materials refer to the technologies and infrastructures that enable practice; competence encompasses the skills and knowledge required to perform it; and meanings involve the norms, values, and symbolic understandings that give practice its purpose. In journalism, practices such as fact-checking are shaped by the interplay of these elements, as journalists mobilize tools, apply professional expertise, and enact normative commitments to truth and accountability.

Recent studies have applied practice theory to examine how digital technologies reconfigure media and journalistic work (Couldry, 2012; Ryfe, 2018), where technological change is not external to journalism but embedded within its practices, reshaping routines, decision-making processes, and professional identities. Therefore, AI should be understood as part of the material dimension of journalistic practice, capable of transforming how verification and counterspeech are performed.

Practice theory also highlights that journalistic norms and values are continuously negotiated through practice (Ryfe, 2019), particularly in moments of technological change. The integration of AI into fact-checking introduces new tensions between efficiency and editorial judgment, automation and autonomy, and scalability and authenticity (Chen, 2025). These tensions are especially visible in emerging contexts such as journalism education, where students are in the process of learning how to integrate technologies into professional practice. By viewing journalism students as “carriers” of practice, this study examines how they engage with AI-assisted fact-checking as part of their professional formation. Their experiences provide insight into how journalistic practices are reproduced, adapted, and transformed, particularly in relation to the ethical and affective dimensions of counterspeech.

3. Research Method

This study adopts a qualitative research design and employs elicitation interviews combined with task-based activities (Johnson & Weller, 2001), which allow participants to enact fact-checking practices in real time while reflecting on their experiences, thereby making visible the often tacit relationships between tools, skills, and professional meanings. The study involved 20 undergraduate students enrolled in communication programs at two universities, one private and one public, in the Banten Province, Indonesia. Participants were recruited

through purposive sampling to ensure prior exposure to journalism education and fact-checking practices. The sample included students from different years of study, enabling the study to capture varying levels of journalistic training and familiarity with AI and digital verification practices. Rather than emphasizing numerical size, the study prioritized the depth and relevance of participants' experiences. Given the relatively specific participant profile (see Table 1) and the detailed reflections generated through the elicitation interviews, a smaller but information-rich sample was considered appropriate for the study's analytical aims.

Table 1. Participants' profile.

Pseudonyms	Years of study	Fact-checking practices familiarity	AI familiarity
Dara	4th year	Advanced	Advanced
Inez	4th year	Advanced	Advanced
Yovie	4th year	Advanced	Advanced
Evelyn	4th year	Advanced	Moderate
Chen	4th year	Advanced	Advanced
Keira	4th year	Advanced	Advanced
Ryan	4th year	Moderate	Advanced
Gio	4th year	Moderate	Advanced
Wisnu	4th year	Moderate	Moderate
Angelia	4th year	Moderate	Moderate
Raihana	3rd year	Moderate	Moderate
Deni	3rd year	Moderate	Moderate
Ahmad	3rd year	Moderate	Moderate
Putri	3rd year	Moderate	Moderate
Herlina	3rd year	Moderate	Moderate
Dewi	3rd year	Moderate	Moderate
Fitri	3rd year	Moderate	Moderate
Gilang	3rd year	Moderate	Moderate
Peter	3rd year	Advanced	Advanced
Natasha	3rd year	Advanced	Advanced

Note: Familiarity with fact-checking and AI was based on participants' self-reported experience, including prior training, practical verification activities, and previous use of generative AI for academic/journalistic purposes.

Participants were recruited through announcements distributed in communication/journalism classes. Participation was entirely voluntary and was not connected to the course assessment. To minimize potential coercion, students were informed that declining participation would not affect their academic standing. The interviews were conducted by members of the research team who were not responsible for grading participants in the courses from which recruitment was conducted, and participants were informed that all interview data would be anonymized.

Data were collected between February and March 2026 through face-to-face interviews. The data collection process was structured into three stages, designed to capture the interaction between materials, competence, and meanings in fact-checking practices.

¹⁰ Interviews were conducted in Indonesian and lasted between 45 and 60 minutes. The interviewers adopted a semi-structured format that encouraged participants to narrate and reflect on their verification practices while completing the elicitation tasks (²¹ see the interview guide in the Supplementary File).

¹⁶ Informants were first asked to demonstrate how they would verify a piece of information using conventional, non-AI-assisted methods. Cases were drawn from recent misinformation documented in the database of Masyarakat Anti Fitnah Indonesia or Mafindo (in English, Indonesian Anti-Slander Society), a leading fact-checking organization in Indonesia, ensuring contextual relevance. Participants mobilized their existing competence (e.g., source verification, cross-checking techniques) and drew on established journalistic meanings (e.g., accuracy, credibility) while relying on familiar material resources such as search engines and news databases. This stage served as a baseline for understanding how fact-checking is practiced without AI mediation.

¹⁹ In the second stage, participants were asked to verify the same information using AI-assisted tools. They were free to choose platforms such as ChatGPT, Gemini, Claude, or other AI-based applications. Here, the introduction of AI reconfigures the practice by altering its material dimension. This allowed the study to observe how the incorporation of new material elements influences the deployment of competence and reshapes the meanings attached to fact-checking activities.

Following the task-based activities, participants engaged in an in-depth semi-structured interview. This stage focused on eliciting reflections on how the integration of AI influenced their understanding of counterspeech and journalistic ethics. Participants were asked to reflect on how AI shaped their ability to respond to misinformation, whether AI affected their sense of professional autonomy and responsibility, and how the use of AI influenced the perceived authenticity and sincerity of their responses.

The sequential design was intended primarily as an elicitation strategy rather than an experimental comparison between AI-assisted and conventional verification (see Table 2). Asking participants to engage in both workflows enabled an exploration of how students reflected on differences in the process, confidence, effort, and professional judgment across verification contexts. Accordingly, the study does not aim to establish causal claims regarding the objective superiority, accuracy, or efficiency of AI-assisted fact-checking.

Importantly, because participants completed the AI-assisted task after conducting conventional verification on the same cases, the exercise may have been influenced by prior exposure to the claims and verification pathways. Therefore, the findings should be interpreted as exploratory reflections on differing verification workflows.

¹² All interviews were audio-recorded, transcribed verbatim, and analyzed manually using thematic analysis (Braun & Clarke, 2006). The analytical process was informed by practice theory, with particular attention to how participants articulated the relationships between materials, competence, and meanings.

³¹ The analysis proceeded in three stages. First was open coding, where initial codes were generated to capture recurring patterns in participants' accounts of using AI and non-AI tools. Secondly, codes were then organized according to key elements of practice, including materials—references to AI tools, platforms, and

Table 2. Comparative flowcharts.

Activity/task	Description of procedure	Main objective	Relation to practice theory
Phase 1: Conventional verification	Participants verified misinformation cases using conventional methods. They relied on search engines, mainstream news media, official sources, and digital verification tools	To identify participants' existing verification routine, competence, and professional reasoning prior to AI mediation	Focused on participants' established competence and existing materials used in journalistic fact-checking, and the meanings attached to accuracy, credibility, and accountability
Phase 2: AI-supported fact-checking task	Participants were asked to verify the same misinformation cases using AI-assisted tools of their choice. They explained how AI influenced their workflow, confidence, and decision-making process	To explore how AI tools reshape verification practices and how participants negotiate the integration of AI into fact-checking activities	Examined how new material elements (AI systems) reconfigured verification competence and altered perceptions of journalistic practice and authority
Phase 3: Semi-structured interview	Participants discussed their experiences, comparisons between workflows, ethical concerns, and reflections on counterspeech practices	To capture participants' reflections on AI and journalism ethics	Primarily explored the meanings dimension of practice and how participants negotiated ethical values and professional identity in AI-mediated journalism

technological affordances—*competence*—skills, strategies, and decision-making processes in fact-checking—and *meanings*—ethical reflections and professional values. Finally, we examined how these elements interact to produce tensions, adaptations, or transformations in fact-checking and counterspeech practices.

As part of reflexivity, we acknowledge that the researchers' backgrounds in AI, fact-checking, and journalism education informed both the interview process and the interpretation of the data. To minimize potential bias, interpretations and coding decisions were continuously discussed within the research team throughout the analytical process.

4. Findings

4.1. The Persistence of Traditional Verification Practices

Participants consistently emphasized that the growing prevalence of misinformation and disinformation, particularly content generated or manipulated using AI, necessitates a corresponding transformation in fact-checking practices. In their view, traditional approaches to verification are no longer sufficient on their own. As a result, students argued that classroom instructions on fact-checking should not only focus on conventional verification skills but also introduce students to AI-related strategies for detecting and responding to misinformation.

Despite this recognition, participants' actual verification practices remained grounded in conventional, non-AI-assisted methods. In such situations, they tended to prioritize established journalistic routines.

The first step involved conducting searches through online search engines to determine whether the issue had been covered or clarified by credible news organizations. Participants frequently referred to mainstream media outlets, which are widely perceived as reliable sources of information. When a claim had already been reported or fact-checked by these outlets, participants considered it easier to assess its validity, especially given that some of these organizations maintain dedicated fact-checking units.

Second, participants often turned to official sources of information, particularly government websites or press releases, to verify claims. For example, in cases involving misinformation related to education, they would consult statements issued by relevant ministries or local education authorities. However, participants also noted a recurring limitation in this approach: official responses are often delayed or, in some cases, entirely absent. In such situations, the lack of an official statement might itself be interpreted as an indicator that the circulating information was likely false.

Third, when these initial strategies did not provide sufficient clarity, participants employed a range of digital verification tools to further investigate the credibility of the content. These included tools such as reverse image and geolocation services, which are used to analyze visual materials circulating on social media. Participants explained that knowledge of metadata analysis and visual verification techniques, acquired through fact-checking training, enabled them to assess whether images or videos had been manipulated or taken out of context. In many cases, these tools were considered effective in supporting the debunking process. Yovie, one of the research participants, explained:

I feel these methods are quite sufficient. I'm comfortable doing it this way because I might not be aware of other techniques yet. The methods we used in class were really helpful; they were enough for me to dig deep and figure out what's actually true and what's false. (Yovie, interview, March 9, 2026)

Moreover, participants acknowledged that AI-based tools had begun to play a role in their verification practices, particularly in cases involving AI-generated misinformation such as deepfake videos. In such instances, some participants reported using AI detection tools to assess whether a piece of content was synthetically generated. While these tools were seen as useful, participants also expressed reservations about their reliability. In several cases, AI detection systems failed to accurately identify manipulated content, even when participants themselves were reasonably confident, mainly based on visual inspection, that the material had been artificially generated. This highlights an important tension between human judgment and automated detection systems in emerging verification practices.

These findings suggest that fact-checking practices among journalism students are currently characterized by a hybrid approach. Traditional verification methods remain dominant, largely because they are familiar, routinized, and perceived as reliable in everyday practice. On the other hand, participants demonstrate an openness to adopting new, AI-assisted approaches, particularly when dealing with more complex forms of misinformation. This emerging hybrid model reflects an ongoing process of adaptation, in which students balance established journalistic norms with the affordances of new technological tools.

4.2. Embracing AI for Fact-Checking and Counterspeech Practices

Participants were assigned a task to conduct fact-checking on several issues that had been circulating in Indonesia in the previous week. Drawing on the database of Mafindo, two prominent cases were selected at

the time: first, a claim that the US warship USS Abraham Lincoln had been sunk by the Iranian army; and second, a claim that the Indonesian government planned to provide teachers with subsidized cars. Participants were initially asked to verify these claims using a conventional fact-checking approach to assess the authenticity of the content in question. Through this process, participants concluded that both claims were false and could be categorized as hoaxes.

Participants were then asked to conduct a second round of debunking on the same cases, this time using AI-assisted tools. After completing the task, participants reflected on their verification processes and reported arriving at the same conclusion as before: both cases constituted misinformation.

Participants highlighted several notable differences between traditional and AI-assisted fact-checking processes. With the traditional approach, they expressed a greater sense of familiarity and control, as this method aligns more closely with their prior training and habitual practices. They emphasized that each step in the verification process was consciously performed and could be fully accounted for, reinforcing a sense of procedural accountability. Although this approach did not always yield definitive answers, participants noted that the process itself, despite being more time-consuming and complex, often led to conclusions they perceived as more satisfactory and trustworthy.

Participants perceived AI-assisted verification as faster than conventional approaches, although the sequential design of the exercise limited direct comparison between the two methods. Dara, one of the participants, explained:

I prefer using ChatGPT because it's such a time-saver. However, I actually find it more rewarding when I uncover a hoax through my own research. That long process makes me feel capable—like, "Wow, I can actually do this." With ChatGPT, even when I find out something is fake, there's no sense of satisfaction. It's probably because getting to the truth was just too easy. (Dara, interview, March 5, 2026)

Participants observed that the verification processes carried out by AI tools were not fundamentally different from their own manual practices. For instance, Google Gemini frequently provided links to relevant news reports or official websites when responding to queries about specific claims.

Participants generally expressed satisfaction with the outputs generated by AI tools, particularly when responses included references to recognizable news outlets or official sources. As further explained by Dara:

In the beginning, if I did it manually like before, I had to check one news portal and then compare it with other news portals like that. If I use ChatGPT, I can just create a prompt right away and give it several (official) sources, so it provides a lot of references. (Dara, interview, March 5, 2026)

This suggests that generative AI systems replicate, to a certain extent, the logic and strategies employed by human fact-checkers, particularly in aggregating and referencing credible sources.

Overall, these two distinct approaches illustrate the dynamic nature of contemporary fact-checking practices. While traditional approaches were perceived as robust in terms of process and accountability, the time-saving capabilities offered by AI-assisted tools were seen as highly attractive. This is particularly

relevant in the context of increasing workloads faced by fact-checkers. Under such conditions, AI-assisted approaches are viewed as a practical and acceptable means of streamlining verification processes without necessarily compromising the reliability of outcomes.

The appropriation of both verification approaches also shaped how participants understood and performed counterspeech. In the traditional workflow, counterspeech was closely tied to the process of verification itself. Participants emphasized that constructing a response to misinformation required careful consideration of tone, clarity, and audience reception, which they saw as integral to their emerging professional responsibilities. This reflects the meaning dimension of practice, where counterspeech is not merely a corrective act but also an ethical and communicative practice aimed at maintaining credibility and fostering constructive public discourse.

When using AI-assisted tools, participants perceived that counterspeech could be produced more quickly and with less cognitive effort, particularly when generating structured responses or summarizing factual corrections. However, this shift also introduced a degree of ambivalence. While AI-generated outputs were often perceived as clear and well-organized, participants questioned whether such responses fully captured the tone of sincerity and empathy vital for addressing misinformation. From a practice theory perspective, this suggests a partial reconfiguration of *competence*, where the ability to generate responses is augmented by AI, but the *meanings* attached to authenticity and moral responsibility remain anchored in human judgment.

4.3. Losing Journalistic Autonomy and Some Ethical Concerns

A recurring theme across the participants' accounts concerns the ethical implications of integrating AI into fact-checking practices. When reflecting on their experiences of debunking misinformation with GenAI, participants acknowledged its practical advantages, particularly in terms of efficiency and time-saving. However, this convenience was accompanied by ethical unease.

In regard to automation bias, some students noted that AI tools occasionally generated confident but insufficiently verified explanations. In several cases, AI systems provided conclusions without clearly indicating the origin of the information, leading participants to subsequently cross-check them against mainstream news reports or official sources. Some students also observed that AI-generated responses sometimes omitted important contextual details, despite presenting the information in a highly authoritative tone.

Evelyn, a study participant, provided the following insight:

The primary distinction lies in the efficiency of AI tools; they generate results rapidly by synthesizing existing online data. However, relying exclusively on AI is problematic because it merely aggregates internet content, which is not inherently factual. AI lacks the capacity for verification and cannot definitively guarantee the accuracy of its output. Conversely, manual research offers a higher degree of credibility. By engaging directly with the process—selecting specific sources and conducting our own comparisons—we ensure a level of authenticity and methodological rigor that AI cannot replicate. (Evelyn, interview, March 9, 2026)

Participants emphasized that such efficiency might come at the cost of professional agency, raising questions about responsibility, accountability, and the integrity of the verification process. They expressed concern that **reliance on AI-generated** outputs **could** weaken **their** critical **capacity to** independently evaluate information, thereby shifting not only the locus of judgment but also the locus of ethical responsibility from the journalist to the machine. Thus, the use of AI risks fostering a form of “outsourced judgment,” where not only epistemic authority but also ethical accountability become partially displaced by algorithmic systems.

In this regard, autonomy is closely tied to ethical accountability: the capacity to question sources, weigh evidence, and arrive at conclusions through deliberate reasoning that constitutes both a professional skill and a moral obligation. AI, by contrast, was perceived by the participants as compressing this process into immediate outputs, potentially bypassing important stages of reflection and ethical deliberation. This compression raised concerns about due diligence, particularly in high-stakes contexts where inaccurate verification might have significant social consequences.

Nevertheless, participants did not reject AI outright. Instead, they articulated a more balanced and ethically informed position in which AI was integrated into fact-checking workflows as a supportive tool. Therefore, while AI contributed to the material dimension of journalistic practice by enhancing efficiency and expanding analytical capacity, it did not replace the competence and meanings that underpinned ethical judgment. Participants stressed that the final authority in interpreting information, and in assuming responsibility for that interpretation, must remain with human actors. Journalists, in their view, were not merely operators of tools but ethical agents responsible for the public consequences of their work. Positioning AI as an assistive instrument, rather than a decision-maker, became essential to preserving both the autonomy and the ethical integrity of journalistic practice in an increasingly automated media environment.

These ethical concerns also extend to the domain of counterspeech, where participants identified similar tensions between efficiency and responsibility. In traditional workflows, counterspeech is understood as a deliberate and ethically grounded practice that goes beyond simply correcting false claims. Participants emphasized that responding to misinformation required careful consideration of tone, audience, and potential harm, particularly in polarized or emotionally charged environments. Counterspeech, thus, is not only about factual correction but also about minimizing harm, fostering constructive dialogue, and maintaining public trust. These ethical dimensions reinforce the meaning component of journalistic practice, where communicative actions are shaped by norms of empathy, accountability, and social responsibility.

4.4. Journalism Students’ Perspectives on the Future of Fact-Checking

43 During the interviews, participants were invited to reflect on and anticipate how fact-checking practices might evolve in the near future, particularly in light of the growing integration of AI into journalistic work. From these reflections, at least two dominant perspectives emerged.

5 Firstly, participants widely perceived **that the integration of AI into journalism** was inevitable, including in the domain of fact-checking. They observed that AI technologies were already being adopted across various dimensions of newsroom practice, both at the organizational level and through individual use by journalists. Several participants pointed out that major news organizations in Indonesia had begun formally collaborating with AI providers to optimize journalistic workflows by including them in their content

production, data analysis, and verification processes. Within this broader context, fact-checking practices were seen as naturally aligning with these evolving institutional rhythms. As such, participants predicted that the use of AI in fact-checking would become increasingly normalized and embedded within journalistic practice in Indonesia.

Secondly, participants hypothesized that reliance on AI might become more pronounced as journalists confronted new forms of misinformation, particularly those generated using AI technologies themselves. The rise of synthetic media, including deepfakes and other AI-generated manipulations, was frequently cited as a key challenge for the future of verification. Participants expressed the view that traditional fact-checking approaches, while still valuable, might not always be sufficient to effectively debunk such content. In this regard, they perceived AI as a necessary technological counterpart to increasingly sophisticated forms of misinformation.

Despite these expectations, participants predicted that a full transition toward AI-based fact-checking was unlikely to occur rapidly or seamlessly. They highlighted the importance of institutional support in shaping such a transformation, noting that meaningful change would require coordinated efforts at multiple levels, including within individual news organizations as well as across professional associations of journalists and fact-checkers. At present, they believed that the use of AI in fact-checking was still largely experimental and driven by individual initiatives rather than formalized organizational policies. As a result, participants viewed the transition toward AI-integrated verification practices as gradual and contingent, requiring time for the development of standards, training, and ethical guidelines.

Furthermore, participants noted that the current misinformation landscape in Indonesia did not yet fully necessitate a widespread shift toward AI-based fact-checking. While acknowledging the growing presence of AI-generated content, they argued that much of it remained relatively low in complexity and social impact. Many examples were described as trivial or falling into the category of “softfakes,” which can still be identified through conventional verification techniques without requiring advanced technological intervention. Consequently, while AI was seen as an important future resource, students expected that its widespread adoption in fact-checking practices was, for now, tempered by the perceived characteristics and urgency of the current misinformation environment.

However, if viewed from a political economy perspective, participants also interpreted the adoption of AI fact-checking as a structural response to the financial constraints facing contemporary news organizations. Rather than being introduced solely to augment human capabilities, AI tools were increasingly perceived as instruments for reducing operational expenses, streamlining workflows, and minimizing reliance on specialized labor.

One participant articulated a critical stance on this trajectory, emphasizing the potential displacement of human expertise:

From an economic perspective, I anticipate a decline in the demand for human fact-checkers due to the high labor costs and procedural complexity associated with the role. As news organizations face increasing financial pressures, they may pivot toward AI-driven verification as a cost-saving measure. If an early adopter successfully replaces human specialists with AI while maintaining—or even growing—

their audience engagement, it can trigger an industry-wide shift. Ultimately, the role of the fact-checker may be marginalized, evolving from a specialized journalistic profession into a technical role focused primarily on AI prompt engineering. (Dara, interview, March 5, 2026)

These findings suggest that students perceived that AI adoption might accelerate the process of deskilling and role reconfiguration within journalism, where the epistemic authority traditionally associated with fact-checking is gradually redistributed to algorithmic systems. This shift reflects a broader trend in digital labor, where professional expertise is translated into platform-dependent competencies, potentially weakening the autonomy and normative foundations of journalistic practice (Simon, 2022).

5. Discussions and Conclusion

This study examined how journalism students in Indonesia engage with AI-assisted tools in putting into practice fact-checking and counterspeech, using practice theory to analyze how materials, competence, and meanings are reconfigured through technological mediation. The findings suggest that the integration of AI into journalistic practice is neither linear nor disruptive in a deterministic sense; rather, it unfolds through a process of negotiation in which emerging technologies are selectively incorporated into existing professional logics (Wu, 2026; Wu et al., 2019).

At the level of materials, the findings demonstrate that AI tools are gradually becoming embedded within fact-checking practices, particularly as resources to increase efficiency and manage the scale of misinformation (Cazzamatta & Sansakaloglu, 2025). This aligns with existing literature that conceptualizes AI as augmenting journalistic workflows rather than replacing them (Diakopoulos, 2019; Shu et al., 2020). However, this study adds a more grounded perspective by showing how such augmentation is experienced in practice by students who are still in the process of professional formation. Rather than fully relying on AI outputs, participants consistently anchored their verification processes in established informational infrastructures, including mainstream news organizations and official institutional sources. This indicates that, even in AI-mediated environments, epistemic authority remains tied to recognizable and socially legitimized sources (Graves, 2017; Suomalainen et al., 2025). In this sense, the material integration of AI does not displace traditional infrastructures but coexists with them in a hybrid configuration that reflects both continuity and adaptation in fact-checking practices (Canavilhas & Ito, 2025; Shin et al., 2025). These findings answer RQ1 by showing that journalism students perceive AI primarily as a supportive and efficiency-enhancing resource.

In terms of competence, the findings reveal a more complex dynamic. While AI tools enable faster verification and ease the generation of counterspeech, they also reshape how journalistic skills are enacted and valued. Participants demonstrated an awareness that reliance on AI could potentially weaken core competencies such as critical evaluation, source triangulation, and contextual interpretation. This concern reflects broader scholarly debates about the risk of “automation bias” in AI-assisted decision-making (Gondwe, 2025). Also, the study highlights the emergence of new competence associated with AI use, including the ability to critically interpret machine-generated outputs, formulate effective prompts, and assess the credibility of algorithmically assembled information. These findings contribute to the literature of fact-checking by showing that AI literacy in journalism is not simply a technical skill but a situated competence that must be integrated with existing epistemic practices (Cuartielles et al., 2023; Dierickx et al.,

2024). Importantly, students' tendency to revert to traditional methods in situations of uncertainty suggests that AI-related competence remains supplementary rather than foundational, at least in its current stage of adoption.

The most important transformation occurs at the level of meaning, where AI complicates the normative foundations of fact-checking and counterspeech. Participants consistently framed fact-checking as an ethical and interpretive practice, rather than a purely technical procedure (Westlund et al., 2024). The introduction of AI complicates this understanding by raising concerns about transparency, accountability, and the locus of judgment (Mun et al., 2024). In particular, the perceived opacity of AI systems challenges the journalistic norm of verifiability, as students struggled to trace and justify the processes through which AI-generated conclusions were produced. This reinforces arguments in the literature regarding the need for explainability and human oversight in AI-assisted journalism (Dierickx et al., 2024; Gutiérrez-Caneda et al., 2023). In relation to RQ2 and RQ3, findings demonstrate that AI integration prompted students to reflect critically on the ethical dimensions of fact-checking, particularly regarding authenticity, accountability, empathy, and professional responsibility.

These tensions become more pronounced in counterspeech practices. While AI enables rapid response at scale, students question whether automated outputs can satisfy the requirements for the relational and affective dimensions necessary for effective counterspeech. Perceived deficits in authenticity, empathy, and moral intent suggest that AI-mediated responses risk privileging efficiency over meaningful engagement. This shifts counterspeech from a dialogic and ethically grounded practice toward a more procedural form of intervention, raising questions about its long-term effectiveness in addressing misinformation.

24 Taken together, the findings contribute to the scholarship of AI and fact-checking in three key ways. First, they advance a practice-oriented account of AI adoption, in which technological integration is negotiated within existing professional frameworks rather than producing a sweeping transformation. Second, they provide empirical evidence from a Global South context in examining how infrastructural and cultural conditions shape AI uptake and thereby address the Western bias in current literature. Finally, they advance the literature on counterspeech by foregrounding how technological mediation reshapes not only its production but also its ethical evaluation, particularly in relation to authenticity and public engagement. Overall, this study conceptualizes AI-assisted fact-checking and counterspeech as evolving hybrid practices in which human judgment remains central. These findings carry important implications for journalism education, suggesting the need to move beyond instrumental approaches to AI training toward fostering critical and ethically reflexive engagement with technology.

In conclusion, several limitations point toward directions for future research. The focus on a relatively small sample size of Indonesian journalism students limits generalizability, particularly given their position outside professional newsroom environments. Their reflections, while insightful, may not fully capture the organizational constraints shaping AI use in practice. In addition, the reliance on self-reported data and simulated tasks may not reflect high-stakes, real-world conditions. Future research could address these limitations through comparative and longitudinal studies, including those that track students into professional settings. Audience-centered research is also needed to assess how AI-generated versus human-crafted counterspeech is received in terms of trust and persuasive impact. Further investigation into the design and governance of AI systems, especially regarding transparency, bias, and cultural specificity in non-Western contexts, remains essential for understanding the broader implications of AI in journalism.

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2 Conflict of Interests

The author declares no conflict of interests.

Data Availability

The data that support the findings of this study are available on request from the author.

4 LLMs Disclosure

No LLM tools were used in this work.

Supplementary Material

Supplementary material for this article is available online in the format provided by the author (unedited).

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About the Author



Yearry Panji Setianto (PhD) is an assistant professor at the Journalism Department, Universitas Multimedia Nusantara, Indonesia. His current projects examine how datafication and AI reshape Indonesian media and political communication. His work appears in journals such as *AI & Society*, *Journal of Media and Religion*, and *Southeast Asian Studies*.

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PAGE 13

PAGE 14

PAGE 15

PAGE 16

PAGE 17

PAGE 18

PAGE 19