

Impacts of Digital Media Literacy Skills on the Accuracy of Truth Discernment

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Abstract

This paper is a segment of a larger dissertation exploring the impact of digital media literacy (DML) skills on the accuracy of truth discernment. The purpose of this paper is to offer broader access to the findings and contribute to the discussions of disinformation, focusing on the significance of the accuracy of truth discernment in politics and law. As earlier studies have examined, the influx of disinformation in the digital age was a pressing global security threat, spreading rapidly through social media platforms. Disinformation, consisting of the deliberate spread of falsehoods, causing chaos and confusion eroded trust in media and government, driving citizens to believe falsehoods to be true, particularly in the absence of DML to discern the reliability of information. This study supports earlier research, revealing that simplifying access to credible information empowers individuals to retrieve trustworthy sources. The qualitative content analysis conducted in this study shows that DML skills shape truth-seeking behaviors, finding high correlations between DML skills and informed political participation. The findings of this research delineate the theoretical mechanisms of how DML skills empower individuals to engage in civil society by synthesizing themes described by scholars within the top 100 cited sample studies selected. Future researchers can assess the theoretical mechanisms outlined in this study to determine their effectiveness by implementing training programs to develop foundations for informed decision-making, political participation, and responsible sharing behavior.

Keywords: digital media literacy, accuracy of truth discernment, disinformation, informed political participation

1. Introduction

Disinformation refers to the intentional dissemination of falsehoods to manipulate society for gain, influencing public opinion, creating confusion, and undermining trust in institutions. In the 21st century, the spread of disinformation has become greater than people's ability to discern the reliability of information, presenting a critical threat to societal stability, democratic integrity, and human health and safety. Guess et al. (2020) noted that the sheer volume of disinformation circulating on social media exceeded the public's capacity to discern the truth. Similarly, Korschun et al. (2020) supported Guess et al., highlighting that false content spreads six times faster than truthful information, intensifying risks at the global scale. The rapid spread of disinformation has led to significant disruptions in democratic processes and human health and safety, during events such as the 2016 United States (U.S.) presidential elections and the coronavirus disease 2019 (COVID-19) pandemic (Balakrishnan et al., 2022; Clapper, 2016; Tagliabue et al., 2020).

Amid such crises, disinformation eroded trust in crucial public agencies by spreading falsehoods about the effectiveness of vaccines, the causes of diseases, cures, and preventive actions, putting human life at risk. Social media algorithms have reinforced confirmation biases and limited access to alternative voices, causing even greater confusion about what is truthful and what is not. In support of this, the 2024 World Economic Forum ranked disinformation number one of the global threats to be confronted over the next two years and highlighted its deep-seated effects on governance and public confidence (World Economic Forum, 2024).

2. Review of Literature: Reinforcing Resilience Against Disinformation Through Digital Media Literacy

Disinformation, a threat to informed decision-making, democratic stability, and public trust had taken hold of a large global role in a time of rapid exchange of information through digital technology. With discredited and deceitful content flying at such a high speed, people struggled more than ever to sort facts from disinformation.

The unprecedented spread of disinformation called for targeted interventions to empower individuals to critically engage with media messages rather than be passive consumers of information. While effective, common techniques like fact-checking and truth-telling often overlook foundational DML skills needed for consistent truth discernment (Brodsky et al., 2021; Pennycook & Rand, 2022; Sirlin et al., 2021; Abeler et al., 2019).

Despite the widespread acknowledgment of disinformation as a societal threat in various fields of study, including political science (Guess et al., 2020; Walter et al., 2020), psychological science (Kozyreva et al., 2022; Pennycook, McPhetres et al., 2020), behavioral public policy (Reijula & Hertwig, 2022), communication (Vraga & Tully, 2021), information science (Celik et al., 2021), and economics (Abeler et al., 2019; Allcott & Gentzkow, 2017) there was a significant gap in understanding how the individual DML skills of access, analysis, evaluation, and creation (AAEC), influenced individuals' ability to discern truth. Existing studies explored aspects of investigating the credibility of the source (Visentin et al., 2019) and improving truth discernment (Rosenzweig et al., 2021), but few have examined the distinct impacts of these skills on the accuracy of truth discernment. In turn, this study investigated how these DML skills potentially impact the accuracy of truth discernment. Scholars such as Brodsky et al. (2021) and Manfra and Holmes (2020) advocated embedding DML into educational curricula but did not delve into the mechanisms by which these skills enhanced truth discernment. Without understanding how DML skills affect the accuracy of truth discernment, common intervention techniques risk being fragmented and less effective, leaving a critical gap in both research and practical application.

Potter's (2010) definition of DML extends beyond basic access and analysis to encompass advanced skills—such as evaluation and creation, which are critical for accurate truth discernment. Building on this framework, this study refines the theoretical model by demonstrating that cultivating a multifaceted approach to truth discernment involves not only enhancing critical thinking and remaining open to diverse perspectives but also integrating intuitive processes like trusting gut instincts and inner wisdom (Audi, 2008; Bakken et al., 2023; Hallo & Nguyen, 2021). The analysis of earlier influential works of scholars, educators, and researchers may reveal evidence on the intersections between individual skills of AAEC and truth-seeking behaviors—including informed political participation (Bago et al., 2020; Kahne et al., 2012), informed decision-making (Dubois et al., 2022; Pennycook & Rand, 2021a), responsible sharing behavior (Pennycook, McPhetres et al., 2020; Talwar et al., 2019), sound judgment (Sirlin et al., 2021; Vraga & Tully, 2021), and problem-solving (Heard et al., 2020)—which are particularly significant in politics and law where precise truth discernment underpins the integrity of legal processes (Kahne & Bowyer, 2017; Hobbs, 2010; Garnett & James, 2020).

2.1 Theoretical and Practical Implications: Politics and Law

DML was crucial for addressing disinformation in politics and law, where accurate truth discernment is vital. Accurate discernment of truth was supported by informed political participation (Kahne et al., 2012; Savaget et al., 2019), maintaining democratic integrity (Garnett & James, 2020), and judicial fairness (Summers, 1999), making the theoretical and practical implications of DML highly significant (Hobbs, 2024). Educated voters with DML skills were better able to assess candidates' policies by seeking diverse sources, fact-checking claims, and critically evaluating the credibility of the information they encounter (Gaultney et al., 2022). Scholars emphasized embedding DML in education to enhance discernment, motivating individuals to participate in constructive discourse (Wintersieck, 2017), and make informed decisions, preserving electoral integrity (Garnett & James, 2020; Manfra & Holmes, 2020; Yoong et al., 2020).

In legal proceedings, truth discernment is crucial for judicial integrity. Judges and juries must critically evaluate evidence and recognize biases to ensure fair and just outcomes. Disinformation exacerbated by digital platforms threatened judicial transparency by introducing manipulated narratives, leading to erroneous rulings (Marsden et al., 2020; Vosoughi et al., 2018). These distorted narratives, amplified by digital platforms, heightened the risk of disinformation influencing legal decision-making, underscoring the need for robust frameworks and advanced critical evaluation skills to reduce the influence of disinformation and protect judicial integrity (Summers, 1999).

2.2 Research Questions and Their Correspondence to Research Design

By investigating the roles DML skills play, this research outlined theoretical mechanisms through which DML drives the accuracy of truth discernment. This research delineated the direct and indirect ways in which DML skills drove the accuracy of truth discernment by examining relevant top 100 cited sample studies. This approach aimed to bridge existing literature gaps and contribute to academic and practical advancements in effective DML education.

2.2.1 Primary Research Question

How do DML skills potentially impact the accuracy of truth discernment?

2.2.2 Research Objectives

To address this central question, the study is designed to investigate:

- The direct influence of the individual DML skills (access, analysis, evaluation, and creation [AAEC]) on the accuracy of truth discernment.
- The indirect pathways through which these skills shape truth-seeking behaviors that enhance individuals' ability to discern truth effectively.

2.2.3 Research Questions

The study is guided by the following subsidiary research questions:

- Subsidiary Questions:
 - How does the skill of access impact the accuracy of truth discernment?
 - How does the skill of analysis impact the accuracy of truth discernment?
 - How does the skill of evaluation impact the accuracy of truth discernment?
 - How does the skill of creation impact the accuracy of truth discernment?
- Exploratory Insights: What are the indirect effects of DML on truth-seeking behaviors?

2.2.4. Rationale and Connection to Theory

Grounded in established communication theories, this study used Potter's (2010) to examine DML skills beyond basic access to foster resilience against disinformation. Building on the priming theory of Potter, this research explored how individual DML skills influence truth discernment accuracy. To analyze impacts, this study adopted Baron and Kenny's (1986) causal chain of mediation model (see Figure 1 below), asserting that variables could exert both direct and indirect effects on outcomes. Utilizing this model demonstrated how DML skills could directly impact truth discernment and indirectly by priming individuals to engage in truth-seeking behaviors, through mediating factors, such as motivation and self-efficacy (confidence).

3. Methodological Framework

This study explored how developing DML skills is a potential solution to drive the accuracy of truth discernment, fostering community resilience against disinformation. By analyzing the top 100 cited sample studies relevant to the topic, this paper synthesized insights from leading scholars, researchers, and educators on how DML skills potentially impact the accuracy of truth discernment. The comprehensive methodology of this study was outlined in the following subsections to offer replicability across various domains.

3.1 Research Design

This study employed qualitative content analysis to identify and interpret patterns within textual data, aligning with its objective to explore the role of DML in mitigating the pervasive threats of disinformation. Using Mayring's (2000) approach, this analysis integrated inductive and deductive coding techniques to ensure a comprehensive examination of themes and codes. By scrutinizing how the core DML skills—AAEC intersect with behaviors associated with truth discernment—the study revealed both direct and indirect influences of these skills on the accuracy of truth discernment.

3.2 Sampling Procedures

Taking a comprehensive look at the entire corpus allowed the researcher to select the top 100 cited sample studies relevant to DML, disinformation, and truth discernment. Google Scholar, Scopus, and Web Science (WoS) were three widely used academic databases, each with distinct strengths. Scopus and WoS offered curated collections of peer-reviewed journals, conference proceedings, and books, ensuring high-quality, vetted research (Singh et al., 2021). However, they were subscription-based, limiting access to researchers affiliated institutions that provide these services. WoS was particularly known for its strong citation analysis tools and historical coverage of influential journals, while Scopus included a broader range of sources, particularly in social sciences and emerging fields (Meho & Yang, 2007).

In contrast, Google Scholar provides free and extensive coverage, including peer-reviewed articles, preprints, conference papers, and theses, making it more accessible and inclusive for interdisciplinary research. Given this study's focus on DML and truth discernment, an area spanning across multiple disciplines and non-traditional scholarly outputs, Google Scholar was the optimal choice due to its broader accessibility, inclusion of diverse sources, and ability to capture interdisciplinary connections that Scopus and WoS may overlook. This decision ensured a comprehensive and equitable approach to literature review without being constrained by paywalled

content (Falagas et al., 2008; Gusenbauer & Haddaway, 2020; Walters, 2008).

The sample studies gathered from Google Scholar were normalized by computing the citation density, combining citation count and year of publication (YoP). The collected sample consisted of the top 100 cited sample studies relevant to DML, truth discernment, and disinformation, indexed in Google Scholar using citation density (Cites Per Year) as a selection criterion. The selected sample studies were published between 1998 and 2023, capturing a broad sampling strategy that included longstanding and emerging perspectives from various fields of study. The selection prioritized studies addressing disinformation, DML, and truth discernment, enabling an integrative exploration of theoretical and practical considerations that align with the objectives of this research of fostering community resilience against disinformation. The influential and diverse scholarly works selected were published within the last 25 years. Data collection and analysis for this paper were conducted between August 2022-2024, offering a thorough and current basis for research.

3.3 Data Collection and Analysis

The data gathered, consisting of the top 100 sample studies were analyzed using NVivo (Version 14) software to facilitate coding and content scrutiny. This research employed an inductive-deductive coding framework, enabling the identification of organically emerging themes while aligning predefined codes and themes with the research questions. This integrated coding approach revealed intersections between DML skills and truth-seeking behaviors, such as critical evaluation and informed decision-making. To explore causal relationships between the skills and behaviors, the study adopted the Baron and Kenny (1986) mediation model (See Figure 1 below), illustrating direct and indirect pathways.

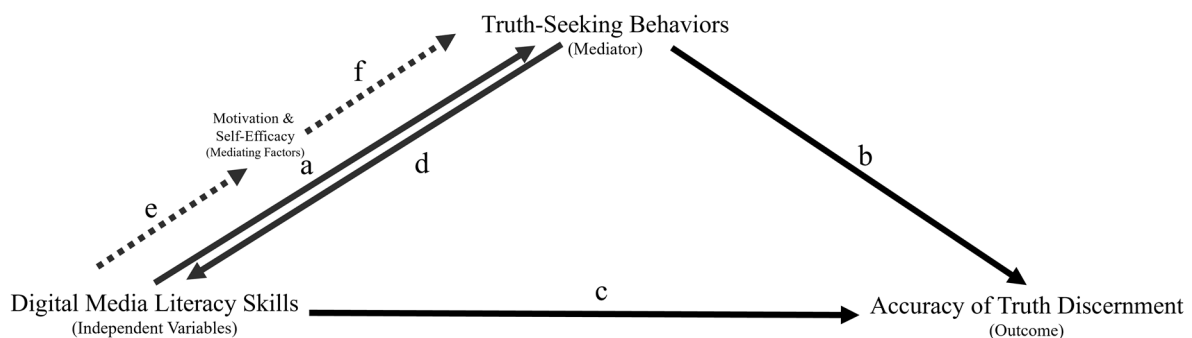


Figure 1. Path analysis model of impacts on accuracy of truth discernment

Note. The direct impact of digital media literacy skills (Path c) and the impact of truth discernment behaviors (Path b). There is a bidirectional path from digital media literacy skills to truth discernment behaviors (Paths a & d). Mediator factors (Paths e & f) of motivation and self-efficacy depict the indirect effects of using the skills toward shaping behaviors.

This Path Analysis Model (Figure 1 above) illustrates the direct and indirect effects of DML skills on the accuracy of truth discernment. Path c represents the direct influence, where DML skills—AAEC—enable individuals to critically assess and verify information. The indirect pathways (Paths a & b) highlight how DML skills shape truth-seeking behaviors, including informed political participation (Kahne et al., 2012), informed decision-making (Pennycook & Rand, 2021b), responsible sharing (Talwar et al., 2019b), sound judgment (Vraga & Tully, 2021), and problem-solving (Heard et al., 2025). These truth-seeking behaviors were the predefined themes extracted from the literature review. The DML skills consisting of AAEC were the predefined codes, also extracted from the literature review that were used for deductive coding to find how the themes and codes intersected.

Mediating factors (Paths e & f) refine this relationship, suggesting that the impact of DML skills is amplified through behavioral and cognitive mechanisms. Mediating factors (Paths e & f)—such as motivation and self-efficacy, shape the relationship between DML skills and truth-seeking behaviors, amplifying their impact through behavioral and cognitive mechanisms. For instance, motivation drives individuals to seek accurate information (Petty & Cacioppo, 1986), while self-efficacy influences confidence in applying DML skills (Bandura, 1977). Additionally, cognitive biases, such as the Dunning-Kruger Effect (Kruger & Dunning, 1999) mediate how individuals perceive their ability to discern truth. Future research can further explore these mediators to refine DML training strategies and enhance disinformation resilience across different demographics.

A key novelty of this model is Path d, which acknowledges the cyclical and mutually reinforcing relationship

between DML skills and truth-seeking behaviors rather than a strictly linear cause-effect dynamic. This approach, grounded in Baron and Kenny's (1986) mediation model, underscores how developing DML competencies can fortify truth discernment by fostering critical inquiry, informed engagement, and responsible digital practices.

Future research can expand this framework by examining additional mediators that shape the interplay between DML skills and truth-seeking behaviors, offering practical insights for DML training and disinformation resilience strategies.

3.4 Rationale for the Approach

This study addressed the research gaps by examining how individual DML skills impact the accuracy of truth discernment by delineating theoretical mechanisms. Unlike prior studies emphasizing common intervention techniques like fact-checking, procedural news knowledge, and accuracy nudging, this paper outlines the theoretical mechanisms underlying specific skills, offering actionable insights for educational and policy frameworks to assess. The theoretical mechanisms outlined in this paper sought to help create DML training programs that build resilience against disinformation. Integrating DML skill development into curricula based on these theoretical mechanisms enables individuals to navigate digital environments critically and accurately discern the truth, which is an approach that future studies empirically evaluate for its effectiveness.

4. Results

At the outset, the results of this study present the prevalence of the four DML skills—AAEC within the top 100 cited sample studies. The prevalence of data highlights the skills' role in the accuracy of truth discernment. Through an in-depth qualitative analysis of the top 100 cited sample studies, the findings of this study outline the theoretical mechanisms that drive the skills of AAEC in fostering critical navigation of digital environments to discern truth.

4.1 Frequency and Qualitative Data Analysis Results

Table 1 below presents the results, revealing the prevalence of each DML skill in the sampled studies. Overall, the findings from the top 100 cited sample studies highlight the critical role of DML skills—AAEC—in enhancing the accuracy of truth discernment. Among the four, the skill of analysis emerged as a frequently mentioned skill (98%), recognized for enabling individuals to critically assess content, uncover root causes, and identify biases. The skill of analysis also indirectly fostered informed political participation, a behavior strongly linked to truth discernment, which contributed to its prevalence in the sample. The skill of access followed with a 91% prevalence, emphasizing its foundational role in simplifying the retrieval of credible information and supporting the development of other skills. The skill of evaluation was found in 90% of sample studies, contributing to discerning content validity and relevance, fostering informed decision-making and responsible information-sharing behaviors.

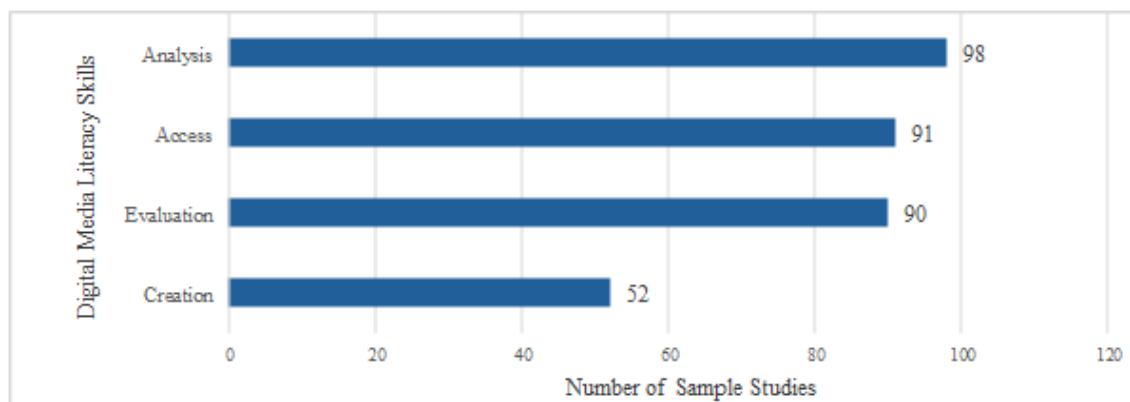


Table 1. Prevalence of DML skills in the top 100 cited sample studies

Note. This graph shows the number of sample studies linked with each DML skill, with “Analysis” being highly cited and “Creation” receiving fewer citations.

Lastly, Table 1 above reveals that creation, cited in 52% of the studies, is regarded as a higher-order skill that builds upon the mastery of access, analysis, and evaluation. While less frequently mentioned, the scrutiny of the sample studies reveals that creation plays a crucial role in enabling individuals to produce original and credible content. Creation skill not only fosters civic engagement but prominently contribute to the production of trustworthy

information. Although less commonly mentioned, it plays an important role in discerning and sharing truth.

4.3 Theoretical Mechanisms of DML Skills

The theoretical mechanisms underlying DML skills illustrate how individual skills, directly and indirectly, contribute to truth discernment. Overall, the interrelationships of these mechanisms highlight the transformative potential of DML skills in cultivating critical engagement with media to discern truth accurately.

The outline of theoretical mechanisms shown in Table 2 below consists of the findings of this study explaining how the individual DML skills of AAEC potentially impact the accuracy of truth discernment. Table 2 below shows a detailed description of each category in the table, supported evidence that consists of the range of sample studies that discussed the mechanisms.

Table 2. Grouping of sample studies according to main mechanisms

Skills	Theoretical Mechanisms	Range of Sample Studies Discussing Theoretical Mechanisms
Access	Mechanism of Skill of Access: Facilitate Simple Retrieval of Reliable Information	Sample Studies #1 - 5
Access	Mechanism of Skill of Access: Create Necessary Conditions for Analysis and Evaluation Skills	Sample Studies #6-7
Access	Indirect Impact of Skill of Access Through Informed political participation	Sample Studies #8-12
Analysis	Mechanism of Skill of Analysis: Examine Content from Multiple Lenses	Sample Studies #13-20
Analysis	Mechanism of Skill of Analysis: Discover the Root Causes of Issues	Sample Studies #21-36
Analysis	Mechanism of Skill of Analysis: Find Underlying Assumptions and Discern Biases	Sample Studies #37-51
Analysis	Indirect Impact of Skill of Analysis Through Informed political participation	Sample Studies #52-61
Evaluation	Mechanism of Skill of Evaluation: Enable Discernment of Content Validity and Relevance	Sample Studies #62-64
Evaluation	Indirect Impact of Skill of Evaluation Through Informed political participation	Sample Studies #65-91
Creation	Mechanism of Creation: Promote the Production of Original Content	Sample Studies #92-100
Creation	Indirect Impact of Skill of Creation Through Informed political participation	95% of Sample Studies have relevance

Note. This table depicts the categories of sample studies based on the mechanisms associated with each skill, with the ranges showing the extent of their emphasis on those mechanisms.

4.3.1 Mechanisms of Skill of Access

Primarily, the findings reveal that simple retrieval of credible information is essential for navigating digital environments. Importantly, the skill of access creates the necessary conditions for more advanced skills of analysis

and evaluation to thrive. Beyond access's direct impact, it indirectly shapes truth-seeking behaviors, such as informed political participation, by empowering individuals to engage in civil society through their ability to retrieve credible information. This engagement involves being motivated and confident.

Facilitating Simple Retrieval of Reliable Information: The synthesis of findings from sample studies #1–5 demonstrates how access skills allow individuals to locate and retrieve credible information efficiently. This foundational mechanism simplifies navigation in digital spaces, enabling users to bypass disinformation and focus on trustworthy sources (De Paor & Heravi, 2020; Jones-Jang et al., 2021).

Simplifying access to credible information enhances individuals' ability to verify accuracy by removing complexities. The findings suggest that easier access and comprehension of fact-checker sites, government reports, scholarly articles, and unbiased sources help people discern truth from disinformation more effectively. Walter et al. (2020, sample study #5) support this, noting: "As a whole, lexical complexity appears to detract from fact-checking efforts, whereas simpler and less sophisticated messages prove to be more effective" (p. 19). In turn, simplifying political news and making facts accessible reinforces individuals' ability to make informed decisions based on trustworthy sources.

- **Creating Necessary Conditions for Analysis and Evaluation Skills:** The synthesis of findings from sample studies #6 and #7 (Koltay, 2011; McDougall et al., 2018) emphasize the crucial role of access in truth discernment. Koltay (2011) notes, "the ability of individuals to appropriately use digital tools and facilities to identify, access, manage, integrate, evaluate, analyze, and synthesize digital sources" (p. 216). This underscores how the effective use of digital tools enables individuals to understand complex issues by accessing diverse information sources, underscoring that access serves as the prerequisite for engaging more advanced cognitive skills, such as analysis and evaluation.

- **Indirect Impact Through Informed Political Participation:** The synthesis of findings from sample studies #8–12 illustrates that informed political participation requires more than access to trustworthy information; it demands critical navigation and broader competencies. Godhe (2019) (Sample study #8) states, "digital Bildung emphasizes broader societal issues and critical aspects it involves much more than the competent use of digital tools" (p. 33). Gran (2019) defines digital Bildung as developing social, cultural, and practical competencies through digital interactions, promoting informed political participation, and responsible navigation. The synthesis of these findings highlights that access fosters informed citizenship by developing social, cultural, and practical skills beyond technical proficiency, promoting responsible navigation and engagement in digital spaces.

Building on this, the mediating factors of motivation and self-efficacy are crucial in digital media literacy environments, driving responsible engagement. Engaged individuals develop stronger critical thinking and decision-making skills, while self-efficacy enhances confidence in assessing information, encouraging informed political participation. Mihailidis and Viotty (2017) support this, linking emerging technology literacy to adaptability and truth discernment in political discourse, aligning with Koltay (2011) (Sample study #6), who underscores the role of critical information retrieval in civic decision-making. These findings affirm that effective participation requires both digital access and the cognitive skills to critically engage with information.

4.3.2 Mechanisms of Skill of Analysis

Analysis builds on this foundation, equipping individuals to critically examine information from multiple perspectives, uncover biases, and discern root causes. These analytical mechanisms not only enhance truth discernment but also indirectly support informed political participation by empowering individuals to assess complex issues critically.

- **Examining Content from Multiple Lenses:** Sample studies #13–20 explore how the skill of analysis encourages critical evaluation of information from various perspectives. The findings underscore the importance of analysis in enabling individuals to discern the truth by seeking a comprehensive understanding and considering all available information before making informed decisions. Integrating these findings illuminates the mechanisms by which an enhanced capacity to critically assess diverse frameworks and to assess challenges from multiple perspectives empowers individuals to discern the truth. Specifically, sample study #20 by Keller and Share (2005), contributes to this general finding, stating: "Promote multicultural literacy, conceived as understanding and engaging the heterogeneity of cultures and subcultures that constitute an increasingly global and multicultural world" (p. 16). Ultimately, these converging insights underscore that the deliberate cultivation of analytical acumen not only facilitates a multidimensional appraisal of complex information but also empowers individuals to navigate and discern truth within our increasingly interconnected and multicultural global landscape.

- **Discovering the Root Causes of Issues:** Sample studies #21–36 emphasize the importance of identifying underlying problems through analysis. Sample studies #21 to #36 were grouped for their emphasis on analyzing the root causes of issues to help discern the truth. Sample study #25 by Middaugh (2019) describes how the skill of analysis drives the development of critical consciousness to discover root causes: “Participation in online public discourse serves the goals of democracy and youth development...help them discover the root causes of challenges in their lives and create and share media that best represent them” (p. 21). This finding aligns with broader studies, highlighting the importance of critical consciousness and understanding through shared experiences.
- **Finding Underlying Assumptions and Discerning Biases:** Studies #37–51 focus on how analysis helps individuals recognize implicit biases and hidden assumptions in media messages, fostering greater objectivity and critical thinking. Farmer (2019) (sample study #51) states, “People need to analyze and evaluate mass media messages and only then decide how to respond consciously and critically...They must be news literate” (p. 2). This highlights the necessity for critical media consumption to identify biases and assumptions, supporting the broader findings on the role of analysis in truth discernment.
- **Indirect Impact Through Informed Political Participation:** Synthesizing the findings from sample studies #52–61 reveals that analytical skills significantly empower individuals to critically assess political claims, uncover biases, and understand complex policy implications, fostering active civic engagement. Research demonstrates that DML education not only equips individuals to scrutinize political advertisements and news coverage for hidden biases (Hobbs, 2010) but also reinforces fact-checking and media analysis as fundamental components of truth-seeking behavior (Walter et al., 2020). Studies further indicate that such analytical competence underpins informed decision-making, as individuals become better prepared to evaluate the trustworthiness of political information (Coffin Murray & Pérez, 2014; Gopinathan & Hoffman, 2018). Importantly, this indirect pathway (Paths e & f) from analysis to informed political participation behavior is mediated by self-efficacy—reflecting confidence in one’s ability to critically engage with information—and by motivation, the drive to seek credible sources, which together amplify engagement in democratic discourse (Kahne & Bowyer, 2019; McDougall et al., 2018).

4.3.3 Mechanisms of Skill of Evaluation

Similarly, evaluation amplifies these capabilities for accuracy by fostering the discernment of content validity and empowering users to make informed decisions. This skill enables responsible engagement in digital spaces, helping individuals filter credible information from disinformation.

- **Enabling Discernment of Content Validity and Relevance:** Sample studies #62 to #64 (Shu et al., 2020; Weitz-Shapiro & Winters, 2017) highlight the critical role of evaluation in discerning content validity. Shu et al. (2020) state, “Given the low cost of creating and publishing content online... assessing the credibility and trustworthiness of information sources is of paramount importance” (p. 9). This underscores the importance of enhancing evaluation skills to sift out useful and relevant information from the digital environment.
- **Indirect Impact Through Informed Political Participation:** Informed political participation emerges as a crucial indirect pathway through which evaluation skills foster truth-seeking behaviors, a relationship significantly mediated by self-efficacy and motivation. Synthesized insights from studies #65–91, as illustrated in Figure 10, reveal that robust evaluation skills enable individuals to critically assess political claims, detect biases, and navigate disinformation, thereby encouraging responsible digital behavior and active civic engagement. Importantly, self-efficacy—reflecting the confidence to scrutinize and evaluate information—and intrinsic motivation—driving the sustained pursuit of credible sources—collectively amplify the impact of these skills on political participation. This dynamic interplay suggests that even without an initial strong interest in politics, enhanced evaluation abilities can spark greater engagement with political content, creating a virtuous cycle that reinforces democratic integrity and mitigates disinformation (Mihailidis & Cohen, 2013; Kahne & Bowyer, 2019; Middaugh, 2019; Grafstein, 2017).

4.3.4 Mechanisms of Skill of Creation

Lastly, creation represents the culmination of DML skills, promoting the generation of evidence-based, authentic content. By fostering informed political participation and elevating public discourse, creation contributes significantly to the development of a trustworthy digital information ecosystem.

- **Production of Original Content:** Studies #92–100 focus on how creation skills enable individuals to generate and share authentic, evidence-based content. This mechanism supports the development of a trustworthy digital information ecosystem (Hobbs, 1998; Livingstone, 2004). Insights from the top 100 cited sample studies highlight the importance of creation skills for producing original content. Hobbs (1998, sample study #93) notes that students

often have deeper expertise in certain areas than their teachers, particularly in decoding cultural codes in media. Hobbs states:

“Media literacy, because it emphasizes a critique of textual authority, invites students to identify the cultural codes that structure an author’s work, understand how these codes function as part of a social system, and disrupt the text through alternative interpretations.” (p. 22)

This finding emphasizes empowering students (K–12 and beyond) to produce original content and critique topics within their expertise. Creating critical citizens who can deconstruct cultural codes enables them to understand and create their own. Hobbs adds that deconstruction challenges students to examine structures, identify potential improvements, and attempt changes. Empowering students to consider diverse viewpoints and form their own informed opinions enhances their accuracy of truth discernment.

- **Indirect Impact Through Informed Political Participation:** A vast majority (95%) of the sample studies underscore the pivotal role of creation skills in fostering civic engagement, with findings indicating that producing original content significantly contributes to public discourse and reinforces transparency and accountability in political processes (Gleason, 2018; Lember et al., 2019). Further analysis of the top 100 cited studies reveals that creation skills indirectly enhance the accuracy of truth discernment by bolstering informed political participation—an effect prominently captured in Table 3 below, where this behavior constitutes 47% of the thematic intersections. For instance, Gleason’s (2018) study (#92), “creating public service announcements is a way for students to identify a critical issue, research that issue and its relevance for the community, and then prepare a persuasive form of media that can impact a community’s perceptions and actions” (p. 5). Importantly, the mediating roles of self-efficacy and motivation are integral to this relationship: individuals who believe in their creative capabilities and are driven by both intrinsic interest and a sense of civic responsibility are more likely to engage effectively in political processes (Grafstein, 2017; Kahne & Bowyer, 2019). Collectively, these insights affirm that robust creation skills, supported by strong self-efficacy and motivation, play a transformative role in advancing digital citizenship, mitigating disinformation, and sustaining democratic discourse.

Table 3. Intersections between DML skills and truth-seeking behaviors

Digital Media Literacy Skills	A: Informed Political Participation	B: Responsible Sharing Behavior	C: Informed Decision Making	D: Problem Solving	E: Sound Judgment
1: Access	30%	25%	28%	12%	5%
2: Analysis	38%	25%	20%	13%	5%
4: Evaluation	35%	21%	24%	12%	7%
3: Creation	47%	28%	15%	9%	1%

Note. This table depicts the intersections between DML skills and truth-seeking behaviors. The rows represent the predefined codes and the columns the predefined themes.

Table 3 above illustrates the intersections between Digital Media Literacy (DML) skills and truth-seeking behaviors, highlighting how different skills contribute to various aspects of civic engagement. Notably, informed political participation demonstrates the highest thematic saturation across the DML skills, with the creation skill reaching 47% and analysis, evaluation, and access yielding substantial percentages (38%, 35%, and 30% respectively). This pattern suggests that individuals who develop strong DML skills—particularly those involved in content creation—are likely to engage in informed political participation. The comparatively lower percentages for problem-solving and sound judgment indicate that these areas might require further emphasis in future DML interventions. Overall, the table underscores the critical role of DML in fostering a well-informed electorate. In the context of politics and law, a well-informed electorate refers to citizens who are capable of critically evaluating complex political narratives and legal claims, engaging actively in civic discourse, and holding institutions accountable. This level of informed political participation is essential for maintaining transparent governance, ensuring judicial fairness, and ultimately sustaining democratic integrity.

Synthesis of Findings:

The theoretical mechanisms outlined in Table 2 above offer a novel framework for understanding how individual DML skills impact the accuracy of truth discernment, both directly and indirectly. The synthesis of findings from

the top 100 cited sample studies reveals that access serves as the foundational skill, enabling subsequent layers of cognitive engagement through analysis and evaluation, culminating in creation as the highest-order skill. These interconnected mechanisms align with existing research advocating for the integration of DML skills into educational and societal frameworks to counter disinformation effectively (Breakstone et al., 2021; Polanco-Levicán & Salvo-Garrido, 2022)

In general, this study reveals that maximizing the transformative potential of DML skills requires strengthening the foundational competencies of AAEC, as these skills build upon one another to enhance the accuracy of truth discernment and informed political participation. Drawing from the hierarchical principles of Bloom's Taxonomy (Anderson & Krathwohl, 2001; Bloom et al., 1956); revised by Anderson in 2001, Figure 2 below presents an inverted pyramid framework to illustrate how these interrelated skills collectively influence the accuracy of truth discernment. This influence is not limited to the political and legal domains. This framework extends the applicability of DML skills beyond the digital space into real-world applications, with profound implications for democratic participation and judicial integrity.

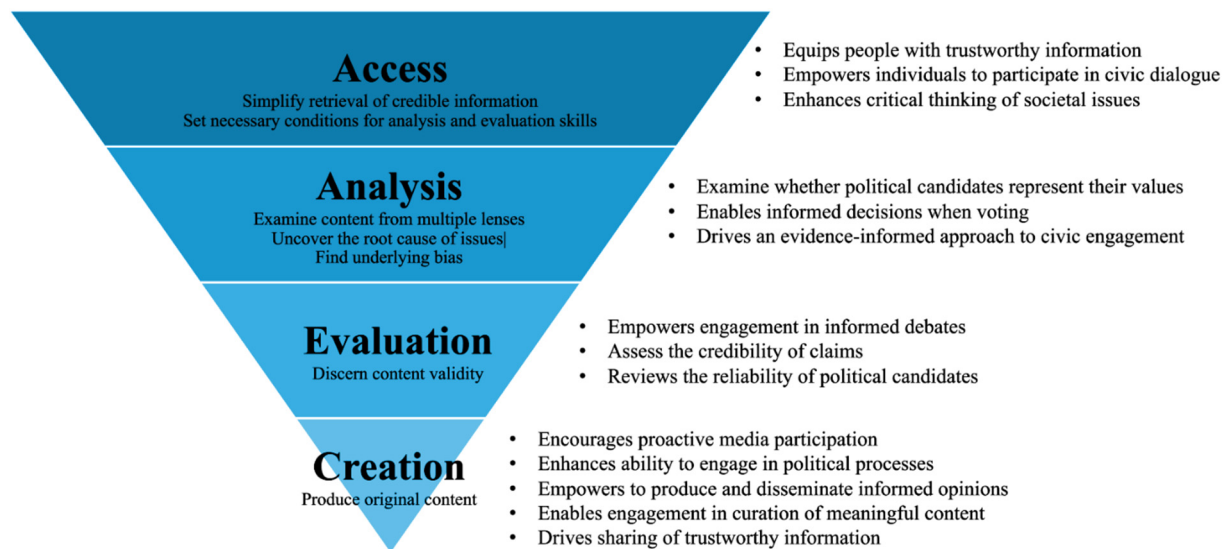


Figure 2. DML skills' direct and indirect impacts

Note. This diagram outlines the framework for how DML skills impact the accuracy of truth discernment directly and indirectly.

To summarize the findings of this study, Figure 2 above illustrates that access forms the foundational layer of this framework by facilitating the retrieval of trustworthy information, which is a prerequisite for subsequent analytical and evaluative processes. The analysis builds upon access by enabling individuals to examine content from multiple perspectives, identify biases, and uncover root causes. Evaluation further enhances this capacity by empowering individuals to assess the validity and credibility of information, enabling them to make informed judgments. Finally, creation represents the pinnacle of the pyramid, allowing individuals to actively produce and share evidence-based content, fostering a more informed and resilient information ecosystem.

4.4 Implications

These findings suggest that access serves as the foundational skill for other DML competencies, acting as the gateway for the accuracy of truth discernment. Analysis and evaluation serve as critical intermediaries, while creation represents the culmination of DML capabilities, driving informed political participation. The interconnected nature of these skills highlights their combined impact on building community resilience against disinformation and supporting democratic processes by fostering informed political participation.

Overall, the findings present a comprehensive DML framework that not only equips individuals with critical thinking and evaluative skills but also enables them to navigate legal information more effectively, thereby fostering trust in the judicial system and reinforcing the pillars of justice. Kahne et al. (2012) and Rubin and Conroy (2012) underscore the empowering effect of these competencies, highlighting how a critical appraisal of legal claims and evidence contributes to the cultivation of a more informed and engaged citizenry. Moreover, the

practical implications of DML are far-reaching, offering actionable strategies to mitigate the pervasive influence of disinformation. By integrating DML principles into educational curricula and professional training programs, the study demonstrates how these approaches can significantly reduce the risks posed by disinformation in both politics and law. In the political realm, a well-informed electorate—capable of discerning truth, resisting manipulative narratives, and advocating for policies grounded in credible evidence—emerges as a crucial outcome, as evidenced by research from Kahne and Bowyer (2019) and Pennycook, McPhetres et al. (2020).

Grounded in cognitive and educational frameworks, including Potter's (2010) model of DML, this study demonstrates how advancing these skills empowers both legal professionals and citizens to critically evaluate evidence and claims, thereby upholding judicial fairness and transparency (Koltay, 2011; Rubin & Conroy, 2012). By cultivating core competencies—access, analysis, evaluation, and creation (AAEC)—individuals are enabled to retrieve reliable information (De Paor & Heravi, 2020; Tully et al., 2022), examine content from multiple perspectives to uncover biases (Kellner & Share, 2005; Middaugh, 2019), assess the validity of claims (Shu et al., 2020; Weitz-Shapiro & Winters, 2017), and produce original content that enriches public discourse (Hobbs, 1998; Livingstone, 2004). These theoretical mechanisms illustrate the transformative potential of DML in fostering a critically engaged citizenry that is resilient against disinformation and capable of sustaining democratic and judicial integrity through informed evidence-based decision-making.

5. Discussion

This study's findings provide a comprehensive understanding of how core DML skills impact the accuracy of truth discernment and offer actionable insights into addressing the pervasive issue of disinformation. The results address the study's primary and subsidiary questions, revealing that these skills collectively enhance the accuracy of truth discernment while also demonstrating individual contributions and pathways through truth-seeking behaviors.

The results validate the primary research question that DML skills impact the accuracy of truth discernment. They also substantiate subsidiary questions, illustrating how access provides the foundational ability to locate credible information, analysis enhances critical evaluation of biases and messages, evaluation empowers the assessment of authenticity and credibility, and creation enables the dissemination of trustworthy content. Together, these findings highlight the interconnected and mutually reinforcing nature of these skills, underscoring their importance in fostering informed political participation.

5.1 Theoretical and Practical Implications

Overall, the findings contribute to the theoretical discourse by expanding Potter's (2010) framework, emphasizing the interaction between skills and behaviors in truth discernment. The study illustrates DML skills' direct and indirect effects by shaping behaviors like informed political participation and civic engagement, supporting earlier research within the sample studies.

Practically, the findings suggest critical applications in education, governance, and cross-sector collaboration:

- **Education and Training:** Incorporating hands-on DML training into curricula, as proposed by Manfra and Holmes (2020), could actively engage learners in evaluating and analyzing media content, bridging the gap between theoretical learning and practical application. Sample study #14, by Cuan-Baltazar et al. (2020) affirm that active engagement fosters critical thinking and ethical decision-making.
- **Institutional Support:** Developing government-backed programs to enhance citizens' skills in truth discernment could integrate DML training as a key performance indicator for educational and leadership initiatives, supporting a resilient civic infrastructure (Ford, 2021).
- **Cross-Sector Collaboration:** Partnerships among educational institutions, governments, tech companies, and media organizations could drive a cultural shift toward digital literacy, as Gleason (2018) demonstrated in his work on multi-stakeholder collaborations.

5.2 Limitations and Generalizability

While this study provides valuable insights, it is not without limitations. The reliance on qualitative content analysis may introduce subjective interpretations, and the sampled studies may not fully represent global perspectives. Future research may address these limitations by incorporating diverse datasets and employing mixed methods to enhance reliability and validity.

5.3 Future Research Directions

To address the potential over-emphasis on the qualitative analysis approach of this study, future research is strongly recommended to incorporate mixed methods to enhance the reliability and validity of findings in their specific domains or environments. Building on the study's findings, future research could:

- **Experimental Studies:** Experimental studies could assess the theoretical mechanisms of DML by designing and implementing environment-specific training programs. For example, researchers might measure how DML training impacts political candidates, lawyers, juries, and judges ability to discern truth from disinformation and fosters responsible digital participation. By comparing pre- and post-training assessments, these studies could provide empirical evidence on the effectiveness of different training approaches. Test the theoretical mechanisms of DML by measuring how specific training impacts truth discernment and fosters responsible digital participation (McGrew, 2020; Puniatmaja et al., 2023).
- **Quantitative Surveys:** Quantitative surveys could capture the broader impact of DML across the legal domain, exploring how groups within politics and the law domain interact with and evaluate online content. By identifying specific needs and tailoring interventions, these surveys can help determine how DML skills impact the accuracy of truth discernment. Exploring DML's impact across various demographics can enable a future researcher to assess how diverse groups interact with and evaluate online content to discern truth (McGrew et al., 2019).
- **Qualitative Interviews:** Qualitative methods, such as in-depth interviews, involving stakeholders from various sectors, such as policymakers, educators, and technologists could provide nuanced insights into the cognitive and motivational factors influencing truth discernment (Seo et al., 2021). Engaging with stakeholders enables future researchers to gather diverse perspectives and design more effective interventions for advancing DML. Interviews with diverse participants could reveal how DML shapes civic engagement and understanding of complex issues.

Additionally, future studies can delve deeper into the analysis of the relationships between DML skills and behaviors by identifying and measuring variables that influence this dynamic. Mediating factors such as motivation, engagement, cognitive biases, and self-efficacy could play significant roles in how DML skills drive truth-seeking behaviors and vice versa. Investigating these mediating factors would provide a comprehensive understanding of the interrelationships between DML skills and behaviors, offering insights into designing effective educational programs.

6. Conclusion

In conclusion, this study demonstrates that DML skills exert both direct and indirect effects on the accuracy of truth discernment. Directly, the cultivation of DML skills—such as critical thinking, evaluation, and creation—empowers individuals to scrutinize digital content rigorously, thereby enhancing their ability to discern truth in complex information landscapes. Indirectly, these skills foster truth-seeking behaviors, notably through informed political participation, which is further mediated by motivation and self-efficacy. In other words, when individuals are confident in their ability to access, analyze, evaluate, and create information and are intrinsically or extrinsically motivated, the positive impact of DML skills on truth discernment is significantly amplified. These findings underscore the potential of integrating DML training into educational, governmental, and technological frameworks as a means to strengthen democratic integrity, public trust, and civic engagement. Future research is recommended to empirically examine these theoretical mechanisms, exploring the long-term effects of DML training across various sectors and its effectiveness in strengthening community resilience against disinformation.

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Appendix

Top 100 Cited Sample Studies

Study #	Rank	CPY	Cites	YOP	Author (s)	Scholarly Article Short Title
1	42	54	216	2020	De Paor & Heravi	Information literacy and fake news
2	7	257	772	2021	Jones-Jang et al.	Does Media Literacy Help Identification of Fake News?
3	75	26	132	2019	Rasi, Vuojärvi, et al.	Media Literacy for All Ages
4	79	24	96	2020	Tully et al.	News media literacy, perceptions of bias, and interpretation of news
5	11	159	634	2020	Walter et al.	Fact-Checking: A Meta-Analysis of What Works and for Whom
6	21	105	1366	2011	Koltav	The media and the literacies: media literacy, information literacy, digital literacy
7	57	41	246	2018	McDougall et al.	The uses of (digital) literacy
8	77	25	126	2019	Godhe	Digital Literacies or Digital Competence: Conceptualizations in Nordic Curricula
9	62	35	174	2019	Kahne & Bowyer	Can media literacy education increase digital engagement in politics?
10	84	19	396	2003	Livingstone (1)	The Changing Nature and Uses of Media Literacy
11	17	125	623	2019	Sharma et al.	Combating Fake News: A Survey on Identification and Mitigation Techniques
12	94	12	231	2004	Yuill et al.	Honeyfiles: deceptive files for intrusion detection
13	78	24	560	2001	Baldwin & Baird	Discerning intentions in dynamic human action
14	10	166	663	2020	Cuan-Baltazar et al.	Misinformation of COVID-19 on the Internet: Infodemiology Study
15	20	111	443	2020	Kozyreva et al.	Citizens Versus the Internet: Confronting Digital Challenges with Cognitive Tools
16	58	37	222	2018	Lee	Fake news, phishing, and fraud: a call for research on digital media literacy education
17	31	68	342	2019	Valenzuela et al.	The Paradox of Participation Versus Misinformation
18	80	23	91	2020	Van Bommel et al.	Tracing teachers' transformation of knowledge in social media

Study #	Rank	CPY	Cites	YOP	Author (s)	Scholarly Article Short Title
19	34	65	387	2018	Waisbord	The elective affinity between post-truth communication and populist politics
20	26	91	1549	2007	Kellner & Share (1)	Critical Media Literacy, Democracy, and the Reconstruction of Education
21	93	12	182	2009	Akyüz & Samsa	The effects of blended learning environment on the critical thinking skills of students
22	82	22	172	2016	Benedek et al.	Assessment of creativity evaluation skills
23	22	101	2528	1999	Charnock et al.	DISCERN: an instrument for judging the quality of written consumer health information
24	41	55	384	2017	Cooke	Information Behavior and Critical Information Consumption for a New Age
25	91	13	65	2019	Middaugh	More Than Just Facts: Promoting Civic Media Literacy in the Era of Outrage
26	3	412	1236	2021	Pennycook & Rand	The Psychology of Fake News
27	52	47	186	2020	Pirhonen et al.	Older adults' perceptions of digital technologies in Finland and Ireland
28	39	59	829	2010	Potter	The State of Media Literacy
29	70	29	117	2020	Radu	Fighting the 'Infodemic': Legal Responses to COVID-19 Disinformation
30	55	42	127	2021	Rasi, Rivinen, et al.	Promoting Media Literacy Among Older People: A Systematic Review
31	56	41	165	2020	Saurwein et al.	Combating Disinformation on Social Media
32	50	47	236	2019	Shen et al.	The effects of source, intermediary, and digital media literacy on contextual assessment
33	83	19	305	2008	Silvia	Discernment and creativity: How well can people identify their most creative ideas?
34	89	14	85	2018	Torres et al.	Combating Fake News
35	23	100	299	2021	Vraga & Tully	News literacy, social media behaviors, and skepticism toward information on social media
36	88	16	82	2019	Wallis & Buckingham	Media literacy: the UK's undead cultural policy
37	38	60	423	2017	Chan et al.	Digital Literacy Learning in Higher Education Through Digital Storytelling Approach
38	48	48	334	2017	De Keersmaecker & Roets	The role of cognitive ability on the impact of false information on social impressions
39	27	82	246	2021	Drigas & Mitsea	8 Pillars X 8 Layers Model of Metacognition: Educational Strategies, Exercises & Trainings
40	99	7	33	2019	Eriksson	Disciplinary discernment: Reading the Sky in Astronomy Education
41	100	6	133	2003	Horn	Developing a Critical Awareness of the Hidden Curriculum through Media Literacy
42	53	46	229	2019	Ku et al.	What predicts adolescents' critical thinking about real-life news?
43	59	37	147	2020	List et al.	A framework of pre-service teachers' conceptions about digital literacy
44	45	49	246	2019	Lutzke et al.	Priming critical thinking
45	43	53	159	2021	Lyons et al.	Overconfidence in news judgments is associated with false news susceptibility
46	44	50	151	2021	Manca et al.	Think globally, act locally.
47	87	17	116	2017	Noh	A study on the effect of digital literacy on information use behavior
48	66	32	159	2019	Valtonen et al.	Media Literacy Education in the Age of Machine Learning
49	97	8	45	2018	Walton et al.	Information discernment, misinformation, and proactive skepticism
50	98	7	50	2017	Walton	Information literacy is a subversive activity
51	95	10	51	2019	Farmer	News literacy and fake news curriculum
52	6	300	899	2021	Apuke & Omar	Fake news and COVID-19
53	35	63	251	2020	Baptista & Gradim	Understanding Fake News Consumption: A Review
54	76	26	258	2014	Coffin Murray & Perez	Unraveling the Digital Literacy Paradox: How Higher Education Fails at the Fourth Literacy
55	14	132	1852	2010	Hobbs (1)	Digital and media literacy: a plan of action
56	29	70	1325	2005	Kellner & Share (2)	Toward Critical Media Literacy: Core concepts, debates, organizations, and policy
57	51	47	235	2019	Leaning	An Approach to Digital Literacy through the Integration of Media and Information Literacy
58	12	157	1097	2017	Rashkin et al.	Truth of Varying Shades: Analyzing Language in Fake News and Political Fact-Checking
59	25	94	468	2019	Su et al.	Mental health consequences of COVID-19 media coverage
60	30	69	344	2019	Tandoc	The facts of fake news: A research review
61	74	27	80	2021	Xiao et al.	Who Consumes New Media Content More Wisely?
62	69	30	209	2017	Weitz-Shapiro & Winters	Can Citizens Discern?
63	47	48	193	2020	Shu et al.	Combating disinformation in a social media age
64	92	12	74	2018	Willison	Research skill development spanning higher education: Critiques, curricula, and connections

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65	67	32	159	2019	Amazeen & Bucy	Conferring Resistance to Digital Disinformation
66	28	77	231	2021	Lewandowsky	Climate Change Disinformation and How to Combat It
67	4	341	1024	2021	Pennycook, Epstein, et al.	Shifting attention to accuracy can reduce misinformation online
68	2	549	2197	2020	Pennycook, McPhetres, et al.	Fighting COVID-19 Misinformation on Social Media
69	32	68	136	2022	Reijula & Hertwig	Self-nudging and the citizen-choice architect
70	71	29	87	2021	Sirlin et al.	Digital literacy is associated with more discerning accuracy judgments
71	19	113	563	2019	Talwar et al.	Why do people share fake news?
72	68	30	121	2020	Heard et al.	Critical Thinking: Skill Development Framework
73	61	35	383	2013	Lin, Tzu-Bin, et al.	Understanding New Media Literacy: An Explorative Theoretical Framework
74	81	22	151	2017	Wintersieck	Debating the Truth: The Impact of Fact-Checking During Electoral Debates
75	8	209	1046	2019	Abeler et al.	Preferences for Truth-telling
76	63	34	102	2021	Ahmed	Who inadvertently shares deepfakes?
77	1	1503	10519	2017	Allcott & Gentzkow	Social Media and Fake News in the 2016 Election
78	60	36	213	2018	Arif et al.	Acting the Part: Examining Information Operations Within #BlackLivesMatter Discourse
79	5	308	1847	2018	Aufderheide	Media literacy: a report of the National Leadership Conference on Media Literacy
80	13	151	604	2020	Bago et al.	Fake news, fast and slow: Deliberation reduces belief in false (but not true) news headlines.
81	86	17	52	2021	Björklund et al.	What is to be learnt? Critical aspects of elementary arithmetic skills
82	40	57	170	2021	Bryanov & Vziatysheva	Determinants of individuals' belief in fake news
83	24	95	568	2018	Bulger & Davison	The Promises, Challenges, and Futures of Media Literacy
84	49	48	143	2021	Collins et al.	Trends in combating fake news on social media – a survey
85	65	32	129	2020	Fraga-Lamas & Fernández	Fake News, Disinformation, and Deepfakes
86	72	29	116	2020	Guess & Munger	Digital literacy and online political behavior
87	16	126	880	2017	Hertwig & Grüne-Yanoff	Nudging and Boosting: Steering or Empowering Good Decisions
88	90	13	40	2021	Leiten & Gardner	Research Strategies to Discern Active Psychological Therapy Components
89	64	34	203	2018	Nagle	Twitter, cyber-violence, and the need for a critical social media literacy in teacher education
90	33	67	268	2020	Pangrazio et al.	What is digital literacy? A comparative review of publications across three language contexts
91	37	61	121	2022	Wineburg et al.	Lateral reading on the open Internet
92	36	63	375	2018	Gleason	Digital Citizenship with Social Media
93	54	44	1156	1998	Hobbs (2)	The Seven Great Debates in the Media Literacy Movement
94	15	131	1832	2010	Livingstone	Media Literacy and the Challenge of New Information and Communication Technologies
95	18	120	2753	2001	Bawden	Information and digital literacies: a review of concepts
96	46	49	245	2019	Druga et al.	Inclusive AI literacy for kids around the world
97	85	18	55	2021	Pei & Wang	Analysis of Computer Aided Teaching Management System for Music Appreciation Course
98	96	10	212	2003	Kolb & Hanley-Maxwell	Critical Social Skills for Adolescents with High Incidence Disabilities: Parental Perspectives
99	73	29	114	2020	Ten Cate & Chen	The ingredients of a rich entrustment decision
100	9	174	695	2020	Guess, Lerner et al.	A digital media literacy intervention increases discernment.

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Authors contributions

As the sole author, I was responsible for the literature review, study design, data collection, analysis, and manuscript drafting. My advisory committee members, Dr. Abdullah Alhayajneh, Dr. Scott Fisher, and Dr. Juste Codjo, provided critical guidance, feedback, and revisions that strengthened the rigor of this research. All contributions were essential in refining the study's focus and enhancing its academic integrity.

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