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Fostering Algorithmic Literacy in Education: Navigating News Ecosystems for Critical Media Understanding

Fomento de la alfabetización algorítmica en la educación: Navegar por los ecosistemas de noticias para una comprensión crítica de los medios de comunicación

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ABSTRACT

In an era of algorithmically curated news feeds, the interplay between technology and human behavior is transforming global information consumption. This study systematically reviews literature from 2015 to 2024, examining algorithms' dual role as enhancers of personalization and drivers of polarization. It investigates how algorithmic bias influences news diversity, the effects of algorithmically driven news exposure on polarization, and the potential of media literacy to mitigate these impacts. The findings reveal a complex relationship between algorithmic curation, user behavior, and polarization, often exacerbated by system opacity. While algorithms can broaden exposure to diverse perspectives, they frequently reinforce existing beliefs through filter bubbles and echo chambers. Media literacy emerges as a vital tool, equipping individuals to critically engage with content and challenge biases. Addressing a growing research gap, this study explores the intricate dynamics between algorithmic personalization, polarization, and media literacy, proposing an educational framework to equip learners for AI-driven news environments. The proposed framework interconnects algorithmic curation, news exposure, user agency, media literacy, and polarization, emphasizing their cyclical dynamics. This research calls for algorithmic transparency, cross-cultural media literacy programs, and targeted studies in underrepresented regions, offering actionable pathways to support healthier public discourse through including algorithmic literacy in education.

RESUMEN

En la era de las noticias curadas algorítmicamente, la interacción entre la tecnología y el comportamiento humano está transformando el consumo global de información. Este estudio revisa sistemáticamente la literatura desde 2015 hasta 2024, examinando el doble papel de los algoritmos como potenciadores de la personalización e impulsores de la polarización. Investiga cómo el sesgo algorítmico influye en la diversidad de noticias, los efectos de la exposición a noticias impulsadas por algoritmos en la polarización y el potencial de la alfabetización mediática para mitigar estos impactos. Los resultados revelan una compleja relación entre la selección algorítmica, el comportamiento del usuario y la polarización, a menudo exacerbada por la opacidad del sistema. Aunque los algoritmos pueden ampliar la exposición a diversas perspectivas, con frecuencia refuerzan las creencias existentes a través de burbujas de filtros y cámaras de eco. La alfabetización mediática emerge como una herramienta vital, que prepara a los individuos para comprometerse críticamente con el contenido y desafiar los prejuicios. Abordando un creciente vacío en la investigación, este estudio explora la complicada dinámica entre la personalización algorítmica, la polarización y la alfabetización mediática, y propone un marco educativo para preparar a los alumnos para entornos informativos impulsados por la IA. El marco propuesto interconecta la curación algorítmica, la exposición a las noticias, la agencia del usuario, la alfabetización mediática y la polarización, haciendo hincapié en su dinámica cíclica. Esta investigación exige transparencia algorítmica, programas interculturales de alfabetización mediática y estudios específicos en regiones subrepresentadas, ofreciendo vías de actuación para apoyar un discurso público más sano mediante la inclusión de la alfabetización algorítmica en la educación.

KEYWORDS | PALABRAS CLAVE

Algorithmic Curation, Media Literacy, Polarization, Filter Bubble, Algorithmic Literacy.
Curación algorítmica, alfabetización mediática, polarización, burbuja de filtros, alfabetización algorítmica.

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1. Introduction

The modern media landscape is profoundly shaped by algorithmic technologies, offering both opportunities and challenges. Algorithms enable personalized information delivery and foster engagement but also raise concerns about their influence on information access and societal dynamics. As social media increasingly serves as a primary information source, questions arise about whether these algorithms promote balanced perspectives or exacerbate polarization, deepen divides, and harm political discourse. Recent global crises—wars, pandemics, and socio-political tensions—have heightened public demand for information while amplifying concerns about the effects of algorithmically curated content on democratic values. Critics argue these systems can reinforce misinformation and divisions (Alonso & Gil-Torres, 2023; Alsaad, Taamneh, & Al-Jedaiah, 2018; Baldi, 2018). In response, media literacy has emerged as a vital skill, equipping individuals to critically evaluate sources, understand news production processes, and identify misinformation.

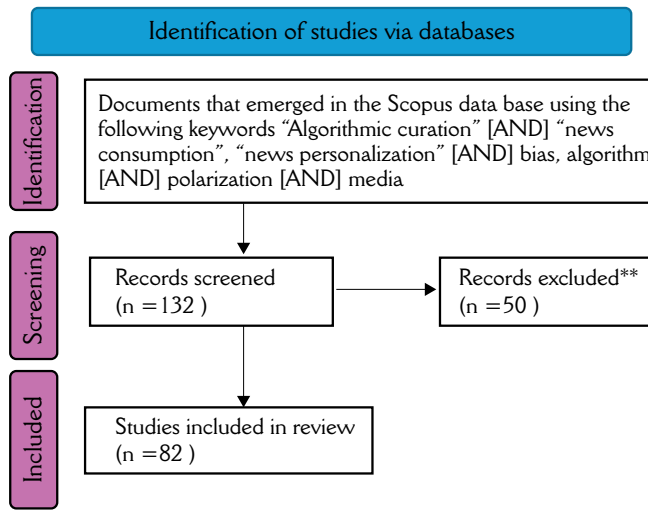
This article explores the relationship between algorithmic curation, news consumption, and polarization, emphasizing the need for global understanding. This paper examines the intersections of algorithmic curation, news exposure, and polarization, calling for culturally inclusive approaches and positioning education as key to fostering critical engagement with AI-driven systems. It addresses a core research gap: the absence of integrative frameworks linking algorithmic literacy with media studies and civic education, and proposes a pedagogical model to help learners navigate these dynamics across diverse contexts.

2. Literature Review

Recent scholarship underscores the societal impact of algorithmic curation, particularly its implications for polarization (Feezell, Wagner, & Conroy, 2021) and news diversity (Bechmann & Nielbo, 2018). Studies such as Bouchaud and Ramaciotti (2024) critique recommender system audits, while Jürgens and Stark (2022) trace how diversity in news exposure erodes over time. Such findings form the theoretical and empirical basis of this review, underscoring the need to advance algorithmic literacy in education. Additionally, research highlights how personalization algorithms create "filter bubbles" and "echo chambers" that reinforce existing beliefs (Bechmann & Nielbo, 2018; Bouchaud & Ramaciotti, 2024). However, evidence is mixed, with some studies suggesting diverse online information diets influenced by human behavior (Bruns, 2019; Budak et al., 2024). The opacity of these systems complicates their evaluation, leaving gaps in understanding their long-term societal impacts and cultural variations (Calice et al., 2023; Hermann, Eisend, & Bayón, 2020). While media literacy offers a promising response to algorithmic bias, its Western-centric focus limits global relevance (Røsok-Dahl & Ihlebæk, 2024).

3. Methodology

Figure 1: PRISMA Sample Selection Procedure (Source: Author).



This study uses a qualitative systematic review to explore the relationship between algorithmic curation, news exposure, and polarization. Its primary objective is to identify key themes in the literature and examine their interconnections, particularly the interplay between user agency and platform algorithms, and their contribution to polarization (Grant & Booth, 2009). The analysis emphasizes media literacy implications based on findings from relevant studies over the past decade, aiming to address critical questions:

1. How does algorithmic bias affect news diversity?
2. What are the effects of algorithmically driven news exposure on polarization?
3. Can media literacy mitigate algorithmic bias in news consumption?

The sampling followed the PRISMA model (Page et al., 2021), including peer-reviewed Scopus articles (2015–2024) in English on algorithmic curation related to media, news, or polarization. Technical studies lacking media context were excluded. Boolean searches used terms like 'algorithmic curation' AND 'news consumption' AND 'polarization'. See Figure 1 for the process.

4. Results

The qualitative systematic review identified main themes and research gaps through a manual review of abstracts and keywords, grouping recurring concepts into broader themes with calculated coverage percentages. Generative AI tools, including Notebook LM and ChatGPT, assisted in figure creation and analysis, with results supervised and confirmed by the author.

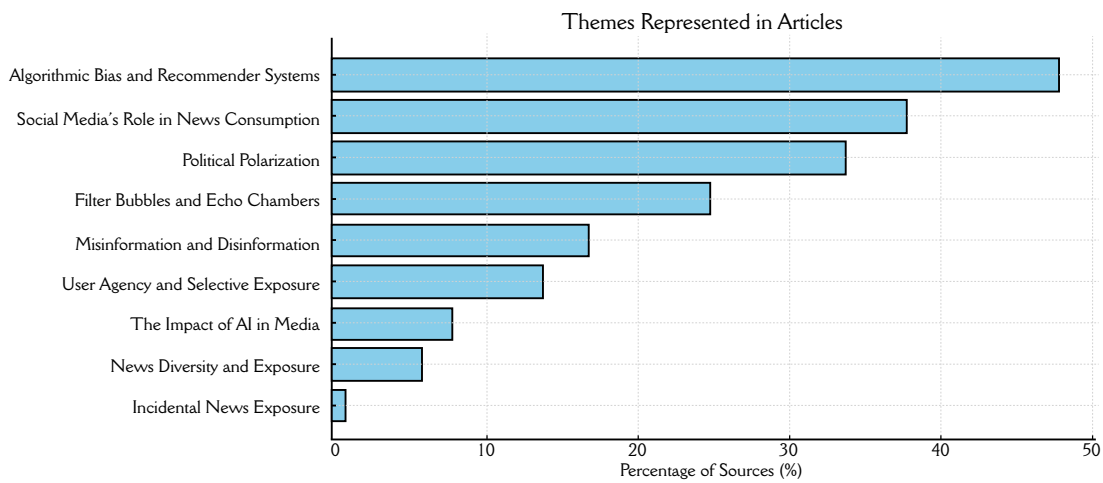
Based on the reviewed articles for this area, the following are the main themes encountered, ordered from most to least frequent.

- Algorithmic Bias and Recommender Systems: This theme examines how algorithms in social media and news platforms create bias, leading to filter bubbles and echo chambers. It also includes research on how these algorithms curate content and influence user exposure. This is the most prominent theme, representing approximately 48% of the sources, as it is central to the concern about technology's impact on information consumption. (Alonso & Gil-Torres, 2023; Alsaad et al., 2018; Alzhrani, 2020; Arce-García, Márquez, & Fondevila-Gascón, 2021; Baldi, 2018; Beall, Makri, & McKay, 2023; Bechmann & Nielbo, 2018; Bouchaud & Ramaciotti, 2024; Bruns, 2019; Budak et al., 2024; Burton, 2023; Calice et al., 2023; Chapman, 2023; Chavalarias, Bouchaud, & Panahi, 2024; Cheng et al., 2022; Cheong, Baksh, & Ju, 2022; Cinelli et al., 2021; Dahlgren, 2021; Daus, 2024; Denemark, 2023; Dillet, 2022; Duan et al., 2022; Emamgholizadeh et al., 2020; Entman & Usher, 2018; Evans, Jackson, & Murphy, 2023; Faverjon & Ramaciotti, 2023; Feezell et al., 2021; Feio & Oliveira, 2024; Foster, 2023; Gao, Liu, & Gao, 2023; García-Marín & Serrano-Contreras, 2023; García-Orosa, 2021; Garcia, 2023; González-Bailón et al., 2023; Gramigna, 2022; Kaluža, 2022; Knees, Neidhardt, & Nalis, 2023; Lu & Gao, 2021; Park & Park, 2024; Rodilosso, 2024; Seargeant & Tagg, 2019; Shin & Jitkajornwanich, 2024; Sîrbu et al., 2019; Smets, Ballon, & Walravens, 2021; Yesilada & Lewandowsky, 2022)
- Social Media's Role in News Consumption: This theme explores how social media platforms like Facebook, Twitter, YouTube, TikTok, and others influence news consumption habits, as well as how users engage with content. About 38% of the sources analyze social media's role in news consumption and information dissemination. (Alsaad et al., 2018; Arce-García et al., 2021; Beall et al., 2023; Calice et al., 2023; Emamgholizadeh et al., 2020; Evans et al., 2023; García-Marín & Serrano-Contreras, 2023; García-Orosa, 2021; González-Bailón et al., 2023; Hemphill, Culotta, & Heston, 2016; Jia et al., 2024; Kaluža, 2022; Kupferschmidt, 2023; Lim, 2017; Lu & Gao, 2021; Ludwig et al., 2023; Palmer & Toff, 2024; Pedro-Carañana, Carrasco-Campos, & Tornay-Márquez, 2024; Scala, 2023; Seargeant & Tagg, 2019; Serrano Plata et al., 2023; Shin & Jitkajornwanich, 2024; Sîrbu et al., 2019; Smets et al., 2021; Surjatmodjo et al., 2024; Thorp & Vinson, 2024; Thorson & Wells, 2015; Ulver, 2022; Villagra et al., 2023; Wazzan & Aldamen, 2023; Wojcieszak et al., 2021; Yan et al., 2021; Yang et al., 2020; Yesilada & Lewandowsky, 2022)
- Political Polarization: A significant portion of the research focuses on how social media and algorithmic curation contribute to political polarization, often through the formation of echo chambers and filter bubbles. Approximately 34% of the sources relate to this theme. (Baldi, 2018; Burton, 2023; Feezell et al., 2021; Feio & Oliveira, 2024; Garcia, 2023; Gramigna, 2022; Hamdi, 2024; Hemphill et al., 2016;

Hermann et al., 2020; Kaluža, 2022; Kupferschmidt, 2023; Lim, 2017; Lu & Gao, 2021; Ludwig et al., 2023; Luengo, García-Marín, & De Blasio, 2021; Madraki et al., 2025; Neyazi, 2020; Palmer & Toff, 2024; Pansanella et al., 2023; Park & Park, 2024; Pedro-Carañana et al., 2024; Rodilosso, 2024; Romero-Rodriguez, Civila, & Aguaded, 2021; Røsok-Dahl & Ihlebæk, 2024; Saraswat et al., 2023; Serrano Plata et al., 2023; Sîrbu et al., 2019; Wazzan & Aldamen, 2023)

- Filter Bubbles and Echo Chambers: These concepts, which are closely related to algorithmic bias, are frequently investigated as drivers of polarization and information isolation. This theme is covered in approximately 25% of the sources. (Alonso & Gil-Torres, 2023; Bruns, 2019; Cinelli et al., 2021; Dahlgren, 2021; Daus, 2024; García-Marín & Serrano-Contreras, 2023; González-Bailón et al., 2023; Kaluža, 2022; Knees et al., 2023; Ludwig et al., 2023; Pansanella et al., 2023; Park & Park, 2024; Rodilosso, 2024; Scala, 2023; Seargeant & Tagg, 2019; Shin & Jitkajornwanich, 2024; Sîrbu et al., 2019)
- Misinformation and Disinformation: A number of studies deal with the spread of false or misleading information on social media and how algorithms can amplify it. About 17% of the sources focus on this. (Budak et al., 2024; Calice et al., 2023; García-Orosa, 2021; Hamdi, 2024; Lim, 2017; Lu & Gao, 2021; Meng, 2024; Neyazi, 2020; Park & Park, 2024; Rodilosso, 2024; Saraswat et al., 2023; Surjatmodjo et al., 2024; Villagra et al., 2023; Wojcieszak et al., 2021)
- User Agency and Selective Exposure: Several studies look into the role of users in choosing and interacting with content, as opposed to purely blaming algorithms, often relating to confirmation bias and self-filtering. About 14% of the sources explore this theme. (Beall et al., 2023; Bruns, 2019; Chapman, 2023; Dahlgren, 2021; Duan et al., 2022; García-Orosa, 2021; Hemphill et al., 2016; Neyazi, 2020; Palmer & Toff, 2024; Smets et al., 2021; Thorson & Wells, 2015; Wojcieszak et al., 2021)
- The Impact of AI in Media - Some articles discuss artificial intelligence's role in content moderation, generation, and recommendation in online political contexts. This is covered in about 8% of the sources. (Calice et al., 2023; Jia et al., 2024; Meng, 2024; Neyazi, 2020; Rodilosso, 2024; Saraswat et al., 2023; Wojcieszak et al., 2021)
- News Diversity and Exposure: Research here looks at the extent to which algorithms promote or hinder exposure to diverse news sources and viewpoints. Approximately 6% of the sources are related to this theme. (Arce-García et al., 2021; Bechmann & Nielbo, 2018; Evans et al., 2023; Jürgens & Stark, 2022; Røsok-Dahl & Ihlebæk, 2024; Thorp & Vinson, 2024)
- Incidental News Exposure: Some articles examine how people encounter news while not actively seeking it out and how algorithms may affect it. This is covered in about 1% of the sources. (Palmer & Toff, 2024)

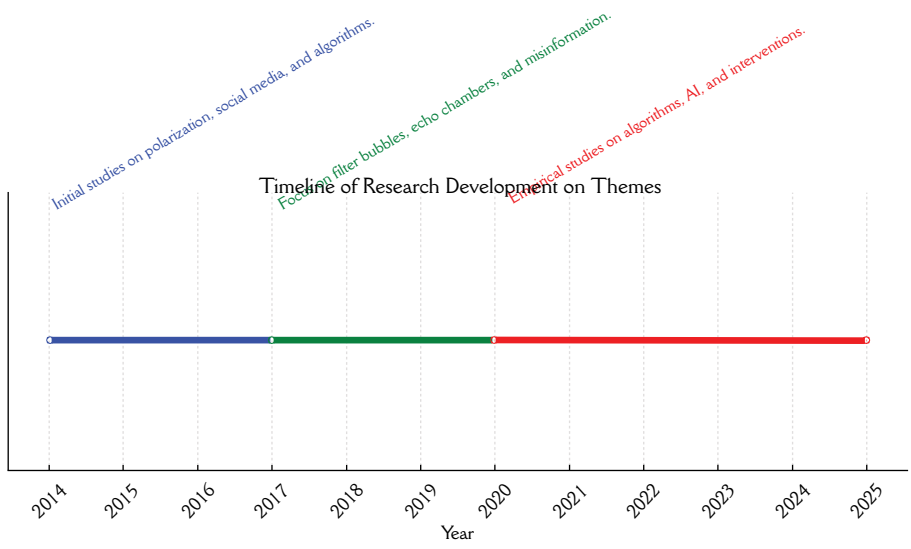
Figure 2: Main Themes in Articles On Algorithmic Curation and News Exposure (Source: Author).



Between 2015 and 2024, research on algorithmic curation, news exposure, and polarization evolved significantly. Early studies (2015-2016) laid the foundation by exploring online polarization, algorithmic bias, and social media's role in shaping discourse. Hemphill et al. (2016) analyzed partisanship in social media content and user polarization on Facebook and YouTube. Thorson and Wells (2015) introduced a framework for mapping media exposure in the digital age. From 2017 to 2019, the focus shifted to filter bubbles, echo chambers, and misinformation. Bechmann and Nielbo (2018) analyzed information similarity among Danish Facebook users, and Seargeant and Tagg (2019) emphasized user agency in understanding filter bubbles. Bruns (2019) clarified misconceptions around filter bubbles.

Recent research (2020-2024) has adopted advanced methodologies to empirically test algorithmic effects on political attitudes and behavior. Studies investigated bots, trolls, and social media's role in polarization (e.g., Feezell et al., 2021; García-Marín & Serrano-Contreras, 2023). Platform-specific analyses examined YouTube (Yesilada & Lewandowsky, 2022) and TikTok (García-Marín & Serrano-Contreras, 2023). Researchers employed experiments and qualitative methods to measure polarization and algorithmic influence (Cinelli et al., 2021; Foster, 2023). Recent works focus on mitigating algorithmic biases (Bouchaud & Ramaciotti, 2024; Jia et al., 2024) and understanding AI's role in content moderation (Wojcieszak et al., 2021). The timeline demonstrates growing sophistication in examining algorithms, user behavior, and their societal implications.

Figure 3: Timeline of Research Development based on the Presented Themes (Source: Author).



5. Analysis and Discussion

This section provides an insightful analysis based on the conducted review to explore the main questions that the study puts forward.

5.1. Algorithmic Curation and News Exposure

This section examines questions like: how do algorithms shape users' information environments by addressing two core questions drawn from existing research? How does algorithmic bias influence the diversity of news individuals are exposed to? Research indicates that algorithmic curation has both positive and negative effects on news diversity, with nuanced short- and long-term implications (Jürgens & Stark, 2022). A study of 10,000 German citizens by Jürgens and Stark (2022) found that algorithms initially expose users to diverse content. However, as algorithms learn user preferences, they tend to narrow exposure, aligning content with users' existing beliefs and reducing diversity over time (Jürgens & Stark, 2022; Shin & Jitkajornwanich, 2024). This narrowing effect is linked to filter bubbles and echo chambers, which

restrict information diversity. Filter bubbles arise when algorithms personalize content based on user behavior, isolating users in information silos (Bruns, 2019; Kaluža, 2022). Echo chambers emerge when users engage primarily with like-minded individuals, reinforcing shared beliefs and amplifying polarization (Kaluža, 2022). The attention economy exacerbates these effects, as algorithms prioritize engagement-maximizing content, often at the expense of diverse perspectives (Pansanella et al., 2023). This focus on user attention can lead to algorithmic negativity bias, favoring divisive or sensational content that further entrenches polarization (Chavalarias et al., 2024).

User behavior also significantly impacts news diversity. While some users avoid echo chambers, others actively seek them, influencing the content they consume (Beall et al., 2023). This dynamic reflects a tension between platform goals and public interests, raising critical questions about algorithms' societal impacts (Kaluža, 2022). In conclusion, algorithms initially promote diverse perspectives but often reduce news diversity over time, contributing to polarization and highlighting the need for deeper insights into algorithmic curation (Jürgens & Stark, 2022; Kaluža, 2022).

Another question: What Are the Effects of Algorithmically Driven News Exposure on Individuals' Polarization Levels? The response suggests that algorithm-driven news exposure influences polarization by creating filter bubbles and echo chambers, limiting users' exposure to diverse perspectives and reinforcing their existing beliefs. These mechanisms can push users toward more extreme views (Alsaad et al., 2018; Baldi, 2018; Beall et al., 2023; Bechmann & Nielbo, 2018; Lu & Gao, 2021; Pansanella et al., 2023; Rodilosso, 2024; Shin & Jitkajornwanich, 2024). Furthermore, algorithms encourage engagement with like-minded individuals, deepening polarization (Sîrbu et al., 2019). Research offers mixed results regarding the extent of these effects. Some studies reveal positive outcomes, such as promoting perceptions of ethnic diversity (Hermann et al., 2020). However, political biases heavily influence user perceptions of algorithmic news bias (Calice et al., 2023). A large-scale analysis of 208 million U.S. Facebook users during the 2020 election demonstrated ideological segregation, finding that users engaged with less ideologically diverse news than what was available (González-Bailón et al., 2023). Conversely, other research challenges this narrative, suggesting algorithms had limited influence on political division during the same period (Thorp & Vinson, 2024).

Further studies indicate that algorithmic effects depend on usage patterns and content sentiment. Negative content recommendations increase polarization over time (Ludwig et al., 2023). Nonetheless, algorithmically driven news can boost political participation without significantly increasing partisan polarization (Feezell et al., 2021). Importantly, polarization is shaped by user behavior and social dynamics. Many users actively seek content that aligns with their views, creating intentional echo chambers (Seargeant & Tagg, 2019). Others prioritize curating social status over diverse content, engaging in "self-filtering" (Daus, 2024). Awareness of filter bubbles remains low, and users often fail to seek alternative perspectives.

The study of algorithmic effects is hindered by limited transparency into platform operations, complicating efforts to isolate algorithmic influences (Budak et al., 2024; Yesilada & Lewandowsky, 2022). Polarization itself is a multifaceted concept, encompassing social, political, and ideological dimensions, which must be distinguished to avoid misleading conclusions (Dahlgren, 2021; Emamgholizadeh et al., 2020). A nuanced approach is essential to understand the interplay between algorithms, user behavior, and societal polarization. The findings discussed provide rich implications for integrating AI tools into classrooms to teach critical evaluation skills. The dual impact of algorithms—initially exposing users to diverse content but eventually narrowing perspectives—offers an opportunity for educators to use these dynamics as case studies. For instance, simulations and role-playing activities can replicate how algorithms create filter bubbles and echo chambers, helping students visualize their societal impacts. By focusing not merely on mitigating biases but on comprehending how algorithms function, educators can position algorithmic literacy as a central pillar of digital education. This approach can also illuminate the complex interplay between news diversity and polarization, encouraging students to critically analyze how algorithmic prioritization of engagement affects public opinion and fosters polarization.

5.2. Implications for Media Literacy

This section explores the third key question: Does increased media literacy mitigate the impacts of algorithmic bias in news consumption? Algorithmic filtering often limits exposure to diverse content by prioritizing familiar information, creating feedback loops that obscure alternative perspectives and less popular

news sources. Biases—stemming from training data or platform goals like maximizing engagement—amplify sensational or emotionally charged viewpoints while diminishing balanced or controversial content (Spurava & Kotilainen, 2023). Many users remain unaware of these processes, reducing their ability to critically engage with curated information or seek alternative sources (de Groot, de Haan, & van Dijken, 2023). This curation impacts critical thinking. By reinforcing users' beliefs, algorithms weaken critical analysis and nuanced news evaluation (Bilić & Brajdić Vuković, 2023; de Groot et al., 2023). Declining source evaluation skills exacerbate this issue, as algorithms prioritize engagement over credibility, leading users to overlook factors like a source's reputation or expertise (Shabani & Keshavarz, 2022; Tully, Vraga, & Smithson, 2020). Consequently, algorithmic curation increases vulnerability to misinformation, exposing users to biased or false content with limited fact-checking (Akram, Nasar, & Arshad-Ayaz, 2023; Ferrucci & Hopp, 2023).

Additionally, algorithmic curation contributes to information overload, making credible information harder to identify and leading some to avoid news altogether (Feldvari, Mičunović, & Badurina, 2022; Heiss, Nanz, & Matthes, 2023). Overwhelming news flows, often lacking context, diminish users' critical engagement, especially when paired with limited understanding of media bias in personalized feeds (Johnston, 2020). The opacity of algorithms further obscures the forces shaping news experiences, undermining media literacy efforts (de Groot et al., 2023). These challenges underscore the urgent need for media literacy to counteract the adverse effects of algorithmically curated information environments. Media literacy—encompassing algorithmic literacy—serves as a critical defense against algorithmic bias. Individuals with advanced media literacy are more likely to understand algorithmic mechanisms, recognize filtering effects, and actively seek diverse information sources (Bilić & Brajdić Vuković, 2023; Cheng et al., 2022; Schofield et al., 2023; Spurava & Kotilainen, 2023).

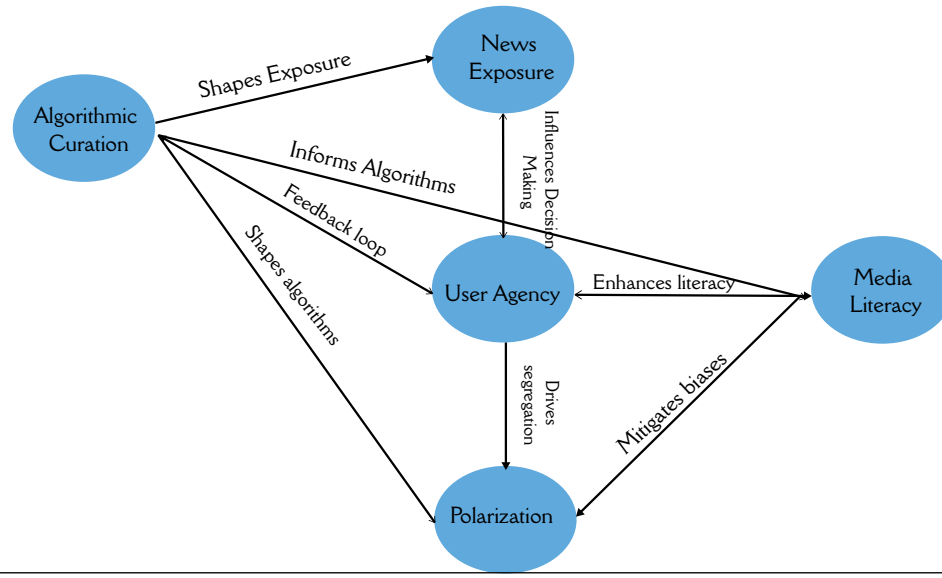
By developing critical evaluation skills through media literacy education, individuals can assess information, identify bias, and distinguish fact from fiction (Bilić & Brajdić, 2023; Cheng et al., 2022; Johnston, 2020). These skills empower users to navigate complex information ecosystems, challenge personal biases, and engage with diverse perspectives (Ferrucci & Hopp, 2023; Verma et al., 2023). Media literacy also fosters responsible information sharing by promoting content verification and source credibility assessment before dissemination (Shabani & Keshavarz, 2022). Media literacy supports informed citizenship and democratic participation by encouraging critical engagement with information and appreciation for diverse perspectives (Currie & Kelly, 2022; Pavlounis, Pashby, & Sanchez Morales, 2023). However, it is not a cure for all algorithmic bias issues. The evolving relationship between media literacy, algorithmic systems, and news consumption calls for continuous adaptation and further integration of algorithmic literacy into educational frameworks. While it cannot solve every challenge, media literacy remains an essential tool for navigating today's algorithmically mediated information landscape.

5.3. A Framework for Algorithmic Literacy in Education

This study presents a model of five interconnected factors—algorithmic curation, news exposure, user agency, media literacy, and polarization (See Figure 4)—offering a foundation for integrating algorithmic literacy into education. Algorithmic curation, which shapes news diversity, highlights how echo chambers and filter bubbles emerge, a concept educators can use to teach critical evaluation skills. News exposure influences user agency, emphasizing the need for learners to critically engage with content and reflect on its broader societal impacts. Media literacy, as a counterbalance, equips students to recognize bias, seek diverse perspectives, and navigate algorithmically curated information responsibly. By integrating case studies, simulations, and algorithmic transparency into curricula, educators can use this model to foster critical thinking and balanced discourse. These dynamics offer practical implications for educators: by modeling how algorithmic systems foster echo chambers, teachers can guide students through critical simulations and self-assessment activities that mirror real-world algorithmic filtering. Such learning experiences empower students to identify algorithmic influence and resist digital polarization.

This model highlights the cyclical relationship between algorithmic curation and polarization, where technology and human behavior reinforce ideological divides. Addressing this requires systemic interventions: promoting algorithmic transparency, embedding diversity mechanisms, and integrating media literacy into education. These steps empower users to critically engage with content, fostering balanced discourse and mitigating polarization.

Figure 4: Interconnected Dynamics of Algorithmic Curation, News Exposure, User Agency, Media Literacy, and Polarization (Source: Author).



6. Conclusion: Toward Algorithmic Literacy in Education

This study underscores the intricate interplay between algorithmic curation, news exposure, and polarization, highlighting their educational potential in fostering critical thinking and informed public discourse. By integrating algorithmic literacy into media education, students can better understand how algorithms shape ideologies and societal cohesion. Media literacy, when culturally responsive, equips learners to navigate diverse perspectives, fostering empathy and reducing the impact of filter bubbles and echo chambers. Policymakers, educators, and platform designers must prioritize transparency and accountability in algorithmic systems, ensuring they balance diversity with engagement. Future research should explore underrepresented regions and the societal impacts of algorithmic systems over time. Cross-disciplinary collaboration can inform inclusive educational strategies and policies, empowering individuals to critically engage with algorithms and contribute to healthier, more empathetic digital environments.

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