Inovasi Kurikulum

Digital literacy curriculum transformation to overcome filter bubble in Pancasila character understanding

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ABSTRACT

The rapid development of technology and social media has created a filter bubble phenomenon that limits the diversity of information and threatens national values including the character of Pancasila in the younger generation. This research aims to examine the influence of the filter bubble phenomenon on social media in the context of Pancasila values, as well as formulate effective strategies and transformation of the education curriculum to strengthen awareness of diversity, unity, and mutual cooperation. This research uses a qualitative approach with phenomenological methods to explore participants' subjective experiences and meanings, which are analyzed descriptively through the concept of epoche. The data collection techniques used were observation, interviews, documentation, and questionnaires, then analyzed through data reduction, data presentation, and conclusion drawing. The results show that the bubble filter phenomenon on social media affects the way individuals access and understand information, mainly because algorithms tend to present content that matches personal preferences, thus limiting exposure to alternative perspectives. The impact is seen in the homogenization of information, strengthening of confirmation bias, and polarization of understanding, which has the potential to cause distortion of Pancasila values, so digital literacy, algorithm transparency, and transformation of the education curriculum are needed to overcome it.

ABSTRAK

Pesatnya perkembangan teknologi dan media sosial memunculkan fenomena filter bubble yang membatasi keberagaman informasi dan mengancam nilai-nilai kebangsaan termasuk karakter Pancasila pada generasi muda. Penelitian ini bertujuan untuk mengkaji pengaruh fenomena filter bubble di media sosial dalam konteks nilai-nilai Pancasila, serta merumuskan strategi efektif dan transformasi kurikulum pendidikan guna memperkuat kesadaran akan kebhinekaan, persatuan, dan gotong royong. Penelitian ini menggunakan pendekatan kualitatif dengan metode fenomenologi untuk mengeksplorasi pengalaman dan makna subjektif partisipan, yang dianalisis secara deskriptif melalui konsep epoche. Teknik pengumpulan data yang digunakan yaitu observasi, wawancara, dokumentasi, dan kuesioner, lalu dianalisis melalui reduksi data, penyajian data, dan penarikan kesimpulan. Hasil penelitian menunjukkan bahwa fenomena filter bubble pada media sosial memengaruhi cara individu mengakses dan memahami informasi, terutama karena algoritma cenderung menyajikan konten yang sesuai dengan preferensi pribadi, sehingga membatasi paparan terhadap perspektif alternatif. Dampaknya terlihat pada homogenisasi informasi, penguatan bias konfirmasi, dan polarisasi pemahaman, yang berpotensi menyebabkan distorsi nilai-nilai Pancasila, sehingga diperlukan literasi digital, transparansi algoritma, serta transformasi kurikulum pendidikan untuk mengatasinya.

Kata Kunci: filter bubble; karakter; literasi digital; Pancasila

INTRODUCTION

Education is essential for building character and shaping strong moral values in individuals. The educational process aims to provide meaningful experiences that support the optimal development of students' potential, both in cognitive, affective, and psychomotor aspects (Sharma & Ankit, 2023). In line with this, character education has become an important element, especially in Indonesia, where the values of Pancasila are the main pillars in shaping national identity. However, according to Rakhmah in her article entitled "*Gen Z Dominan, Apa Maknanya bagi Pendidikan Kita?*" published in 2021, new challenges have emerged with the rapid development of technology and social media, which have not only changed the way individuals interact, but also influenced the way they think, behave, and understand the noble values of Pancasila (see:https://pskp.kemdikbud.go.id/gagasan/detail/gen-z-dominan-apa-maknanya-bagi-pendidikan-kita).

Social media, which was initially expected to be a platform for the democratization of information, has instead given rise to the filter bubble, a condition in which internet users are only exposed to information that aligns with their preferences and views. This phenomenon occurs due to algorithms designed to personalize content, but instead, limit the diversity of information received. Algorithms on social media create a narrowly curated information space based on user preferences, known as an "echo chamber" (Wulandari et al., 2021). This phenomenon distorts understanding, narrows perspectives, and potentially erodes national values, including the Pancasila principles. As a result, young people, the primary social media users, are vulnerable to deviations from national values that should serve as the foundation for life in a nation and state.

This situation is exacerbated by Microsoft's 2021 report through the *Digital Civility Index* (DCI), which shows that Indonesian netizens have the lowest level of civility in Southeast Asia. Additionally, data from the Ministry of Communication and Information Technology shows that by April 2021, over 2.6 million social media accounts had been blocked for spreading harmful content, highlighting the significant challenges faced in upholding national values in the digital age, as noted by Kure (2021) in his article "*Kemkominfo telah blokir 2,6 Juta akun konten negatif*" (see: https://investor.id/it-and-telecommunication/264404/kemkominfo-telah-blokir-26-juta-konten-negatif).

As a result, users can become isolated from different points of view, exacerbating societal polarization and threatening diversity of opinion (Bozdag & Hoven, 2015). Filter bubbles seriously impact the younger generation's character formation, including their understanding of Pancasila values. The Pancasila character, which upholds unity, tolerance, and justice, can be distorted when the younger generation only receives uniform and biased information. Therefore, a digital literacy-based educational approach is needed to overcome this phenomenon. This article aims to propose a digital literacy-based curriculum transformation to deal with the influence of filter bubbles and strengthen the understanding of Pancasila's character in the digital era.

Furthermore, digital literacy is also critical in shaping students' character. Studies show that students must be able to analyze and evaluate the information they receive on the internet to avoid filter bubbles, which can blur the values of Pancasila (Utaminingsih et al., 2023). Previous research has also shown that filter bubbles can cause losses in various aspects of life. Filter bubbles tend to expose users to similar viewpoints, reducing information variety and exacerbating social polarization (Wulandari *et al.*, 2021).

Several studies highlight the importance of awareness of the impact of filter bubbles on personal health information, including its implications for mental health. From an educational perspective, filter bubbles can hinder the development of Pancasila values in the younger generation (Holone, 2016). Pancasila-based education is necessary to instill positive morality and mentality in the younger generation. However,

542

globalization's influence and filter bubbles can weaken the understanding of these noble values (Rusdiyani, 2016). Therefore, developing educational programs that combine digital literacy with Pancasila character education is significant and relevant (Octavia & Tirtoni, 2024).

As the ideological pillar of the State, Pancasila emphasizes the values of unity, tolerance, and humanity that must be internalized in social life. However, the penetration of foreign cultures, increasingly open social interactions, and uncontrolled access to information through social media create significant challenges in actualizing these values. Therefore, innovation in the education system, particularly through a digital literacy-based curriculum transformation, is needed to help the younger generation understand, internalize, and implement Pancasila values wisely. This study aims to examine the influence of the filter bubble phenomenon on social media on information diversity, confirmation bias, and social polarization in the context of Pancasila values, as well as to formulate effective strategies such as increasing digital literacy, reforming algorithms, and transforming the education curriculum to strengthen awareness of diversity, unity, and cooperation in the digital era. With a focus on digital literacy, this research offers innovative curriculum development solutions that equip young people with critical, creative, and wise skills in using social media. This digital literacy-based curriculum transformation is expected to be an effective strategy for facing the challenges of the digital era and maintaining the existence of Pancasila values amid the tide of globalization.

LITERATURE REVIEW

Review of Philosophische Grondslag

Philosophy Grondslag is a term from Pancasila coined by Ir. Soekarno. Wartoyo, in his book entitled "*Filsafat dan Ideologi Pancasila: teori, kajian dari isu kontemporer*" states that "Pancasila is an ideology that contains a philosophical system based on philosophical theories." The interesting dynamics of the Indonesian philosophical system known as "Panca Sila" (literally meaning "five principles") are very interesting to observe from a philosophical perspective. The words that form "Di era pemerintahan Soekarno, muncul istilah yang menggambarkan bagaimana Pancasila sebagai sistem filsafat, yakni dengan istilah '*Philosofische Grondslag*' (dasar filosofis). Istilah ini muncul ketika Soekarno tengah mempersiapkan kemerdekaan bangsa Indonesia".

Pancasila is deeply embedded in the nation's worldview and basic philosophy, making it an ideal candidate for an open ideology. This ideology is a concise yet comprehensive framework of well-integrated and balanced fundamental principles, forming a strong value system. Within this framework, according to Rakhmat in his book "Pendidikan Pancasila dan Kewarganegaraan" (Pancasila Education and Citizenship), we can define values as the distinction between what is considered right and wrong, or, in this context, what is aspired to achieve. "Philosophische Grondslag" is "the foundation, philosophy, deepest thoughts, soul, and deepest desires upon which the building of an independent Indonesia is established." The phrase "upon which the building of an independent Indonesia is established" explains that Pancasila as Philosophische Grondslag is equivalent to "state foundation." Therefore, the meaning of Pancasila as the "foundation of the State" is none other than Pancasila as the "philosophical foundation of the State." As a diverse nation, Indonesia requires Pancasila as its ideology. Pancasila can serve as a bridge for the Indonesian people, providing a sense of security and comfort for all its citizens. The population of Indonesia consists of various ethnic groups, religions, races, and cultures.

Review of Pancasila Character Education

The theory of character education states that understanding Pancasila also requires an understanding of character education, which includes learning about the values of Pancasila rooted in Indonesian culture and society. Character education is a system of naming character values. This system includes the components of knowledge, awareness, or willingness, and actions to implement these values. These values are directed towards God Almighty, oneself, others, the environment, and nationality, according to Lickona in his book "Educating For Character". The development of national character cannot be separated from the development of individual character. However, an individual's character development must be carried out in a specific social and cultural environment.

In this increasingly sophisticated information age, connecting is easier for everyone. The phenomenon of the filter bubble in society will influence the views of every social media user regarding information, opinions, and even issues. Understanding the character of Pancasila is a form of Pancasila character education aimed at shaping good and intelligent citizens. Pancasila can serve as a unifying tool for the Indonesian nation and a source of values in social, national, and State life (Hasanah, 2021). This theory of character education is considered very important, given that every human being must have good character to live their life.

Review of Filter Bubbles

The development of information technology has brought about changes in society. The emergence of social media has caused shifts in cultural, ethical, and normative behavior patterns (Cahyono, 2016). At the same time, the internet itself is a neutral platform that can be personalized according to the needs of its users. The filter bubble algorithm is constructive for users in shaping their desired scope. To specify the platforms studied about the internet and their connection to filter bubbles, the researchers asked respondents to choose the platform they used most often to search for information (Wulandari et al., 2021). Filter bubbles are a social phenomenon produced by social media that provides limited information from a single perspective and is filtered online. Consuming information based on what is provided by the internet through a filter bubble continuously causes a person only to obtain information about that topic, so there is no enrichment of information, and it even tends to be unbalanced.

In addition, the diversity of opinions on social media can cause the phenomenon of a "filter bubble," where people are only given views that match their beliefs (Habibi et al., 2024). At the same time, filter bubbles can encourage understanding, tolerance, and cooperation among individuals. The positive impact of filter bubbles is not to promote or support intolerance as a barrier to unity. However, to achieve true unity, we need to find ways to resolve our differences peacefully, respect human rights, and work together to face common challenges.

Review of the Digital Literacy Curriculum

In facing the challenges of the digital age, the digital literacy curriculum in Indonesia, especially in the context of Pancasila character education, is becoming increasingly important. This curriculum transformation aims to overcome the phenomenon of filter bubbles, in which people are trapped in information that matches their personal beliefs, which reduces their broad understanding of Pancasila values. As the foundation of the Indonesian State, Pancasila embodies noble values that must be instilled

in education so that the younger generation can develop good character (Wahono et al., 2021). Furthermore, internalizing Pancasila values amid rapid technological and informational advances requires new approaches. One example is the Mengajar Merdeka (Freedom to Teach) Platform, which is designed to enable more interactive learning based on Pancasila values (Susilawati et al., 2021).

The importance of Pancasila education as a source of character in line with the philosophy of the Indonesian nation has been recognized in the higher education system. This education helps foster national and international awareness and improve 21st-century skills, such as digital literacy (Saleh & Solihin, 2023). In line with this, educators can use technology and various methods to create more engaging and interesting learning experiences for students so that they not only understand the theory but can also apply it in their daily lives (Hidajati et al., 2025; Susanti et al., 2023). Various formats and media can also be developed to facilitate knowledge transfer in the learning process (Dewi et al., 2023). Therefore, it is hoped that incorporating digital literacy into the curriculum will help students understand and apply Pancasila values in an increasingly complex digital world (Kailani et al., 2021).

METHODS

This study uses a qualitative approach with a phenomenological method. The researcher chose this approach to explore the experiences and meanings of the research results. The phenomenological method focuses on understanding the participants' daily lives and intersubjective world. The approach is straightforward, with a natural attitude postponed until a specific basis is found. This postponement is commonly referred to as *epoche*. The concept of *epoche* distinguishes the data area (subject) from the researcher's interpretation. This data is then analyzed descriptively to identify common themes, structures, and meanings from individual subjective experiences.

The participants in this study were individuals aged 18-30 years who were in an active stage of development, had social media, and were willing to be respondents. Based on a survey by APJII and SRA Consulting (January 2023) in an article by Melasyaharani entitled "10 Provinsi dengan Tingkat Penetrasi Internet Tertinggi di Indonesia Tahun 2023," the internet penetration rate in Indonesia reached 78.19% or 215 million people out of a total population of 275 million, with West Java reaching 82.73% (see: goodstats.id/statistic/10-provinsi-dengan-tingkat-penetrasi-internet-tertinggi-di-indonesia-tahun-2023-LdHH4).

Therefore, the research location was centered in Greater Bandung, West Java. Data collection techniques were selected based on the required data types. Data sources can include primary and secondary sources. Data collection methods can include observation, interviews, documentation, questionnaires, and a combination of all four. The interactive data analysis model is the most straightforward technique, encompassing data reduction, data presentation, and conclusions/verification.

RESULTS AND DISCUSSION

The data from the field corresponded to the research problems and were then described and analyzed as a basis for conclusions. The respondents in this study consisted of 12 individuals with various demographic backgrounds, including lecturers, teachers, students, and government employees, with a diverse age range from young adults to adults. Most respondents were male and female with higher education, most

of whom were lecturers and teachers teaching at universities and schools in Bandung. In comparison, some were students pursuing higher education in the city.

Regarding social media usage, almost all respondents were active on platforms such as Facebook, Twitter, Instagram, and WhatsApp, primarily communicating, sharing information, and following current issues. Their social media usage patterns tended to form certain information circles, with most choosing to follow accounts or groups relevant to their professional fields or personal interests. The improvement of educators' digital skills through technology training aligns with the findings in this study, where several educators felt more capable and prepared to utilize technology after collaborating with students. The influence of this filter bubble can limit their understanding of more complex and diverse issues and shape a narrower view when interacting with information in the virtual world.

Analysis of the *Filter Bubble* Phenomenon on Social Media

A phenomenological study of filter bubbles found that personalization algorithms on social media play a significant role in shaping users' experiences with the content they consume. This phenomenon is rooted in collecting and analyzing users' digital activity data, including search history, clicks, and social interactions. Based on this analysis, algorithms predict user preferences and present personalized, relevant content. Three main stages are described to understand the mechanism of the filter bubble.

1. Activity History
   This stage emphasizes that social media algorithms analyze a user's digital footprints, including activity history, such as posts they have liked, comments made, accounts they follow, and other interactions. These activities create data that the algorithm then continuously collects.

2. Interest Prediction
   After analyzing activity history, the algorithm makes predictions about user interests. Visualized in the image, approaches such as Genetic Algorithms allow algorithms to sort and prioritize which content is most likely to attract the user's attention. In the context of filter bubbles, the algorithm "selects" the content that is considered most appropriate based on an analysis of the user's previous activity history.

3. Content Presentation
   The final stage is content presentation. After the algorithm predicts user interests, it compiles a homepage or news feed based on the content that best matches user preferences.

These three stages show that social media algorithms systematically create a personalized user experience. However, this approach also contributes to filter bubbles, where users are only exposed to information that reinforces their preferences, reducing the diversity of perspectives. This phenomenon can trigger information homogenization, reinforce confirmation bias, and potentially cause social polarization. From interviews conducted with social media users, it was found that most respondents were aware that the content they consumed tended to be uniform and in line with their personal preferences. Respondents mentioned that:

"Mereka sering melihat konten yang relevan dengan minat mereka, tetapi jarang mendapatkan informasi dari perspektif yang berbeda."

546

"Beberapa responden mengaku merasa "terjebak" dalam lingkaran informasi yang sama, yang memperkuat pandangan mereka terhadap suatu isu."

"Mayoritas responden menyatakan bahwa mereka hanya mengandalkan platform media sosial tertentu untuk mendapatkan informasi, seperti Instagram, Facebook, dan YouTube."

Based on the interview results, most respondents know that the content they consume on social media tends to be uniform and in line with their personal preferences, thereby limiting their exposure to different perspectives. Some respondents even felt "trapped" in the same information circle, reinforcing their views on an issue. In addition, most respondents only relied on specific social media platforms, such as Instagram, Facebook, and YouTube, as their primary source of information, which further reinforced the homogenization of information. Furthermore, observations were made on user activity on social media. Based on these observations, it was found that platform algorithms consistently present content relevant to users' interests based on the frequency of interaction with certain content, such as the number of "likes," comments, or time spent watching videos. The recommendation patterns emerge, such as advertisements or posts directly related to users' latest searches or interactions. Observations also indicate that users tend to engage longer with personally relevant content, which indicates that the algorithms are working to maximize engagement.

Research shows that the filter bubble phenomenon significantly impacts how social media users access information. The emergence of social media as a new technology will undoubtedly change how people live. The ability to obtain information quickly and efficiently, without being hindered by time, place, or high costs, is one of several changes (Rafiq, 2020). However, it is important to remember that social media can also hurt users. The large amount of misinformation, also known as "fake news," has become a significant concern and is disturbing the public. Social media platforms like Facebook, Instagram, and YouTube are the most vulnerable to this phenomenon because their algorithms are highly oriented toward user engagement. This phenomenon leads to the homogenization of information, reinforces confirmation bias, and limits the diversity of perspectives, which can trigger social polarization.

The filter bubble phenomenon is a condition where social media users are only exposed to information that matches their preferences or views. This filter bubble phenomenon occurs due to personalization algorithms designed by digital platforms to increase user engagement. The process involves collecting data from users' activity histories, such as searches, clicks, or interactions, which is then used to predict their interests. In line with this, the filter bubble phenomenon exposes users only to content that matches their interests, thereby reducing their exposure to information that could broaden their understanding of pluralism (Lomboe et al., 2024). As a result, the content displayed becomes highly relevant to users' interests but isolates them from alternative perspectives.

Illustration of Genetic Algorithms, where each element, such as "Gene," "Chromosome," and "Population," represents data and choices analyzed by the algorithm. The algorithm can filter out content that is considered inappropriate or less interesting to users. The algorithm then uses this data to build user profiles and select content according to their preferences and interests (Kaluža, 2022). This process shows that algorithms do not work randomly but use a systematic and scientific approach to maximize content relevance for users. Although this approach aims to provide a more engaging personalized experience, it can also limit exposure to diverse information and cause users to be in a filter bubble. As a result, users often only see a uniform point of view, reducing awareness of other perspectives and triggering polarization of understanding on an issue.

The Implications of the *Filter Bubble* on the Character of Pancasila

In a digital environment filled with algorithms, the sources of information displayed on homepages or search results often come from the same media or platforms. As a result, users lose the opportunity to compare information from various sources and gain a broader understanding of an issue. The *filter bubble* significantly impacts the understanding of Pancasila values, especially in the digital age dominated by personalized social media algorithms and a tsunami of information. Based on the interview results, respondents revealed that they were often only exposed to information relevant to their personal preferences, so they rarely got different perspectives. Some respondents found comparing information from various sources difficult because social media algorithms tend to reinforce confirmation bias.

In addition, respondents from the teenage group admitted that social media had become an integral part of their lives, but they rarely questioned the credibility of the information they received. The influence of filter bubbles on information consumption can be seen from several important aspects—first, the homogenization of information. Second, filter bubbles reinforce confirmation bias in information consumption. In addition, filter bubbles also encourage the emergence of information polarization among users. Polarization occurs because each group lives in its own "information bubble" and finds it increasingly difficult to accept other perspectives. Furthermore, the limited diversity of information sources also impacts filter bubbles.

Teachers, students, and University students are also affected because filter bubbles limit their perspectives, creating fragmented interpretations of Pancasila and losing its holistic context. For the community, especially teenagers, social media has become an addiction that makes users unable to go a day without opening social media (Putri et al., 2016). The internet or social media will continue to present information based on the user's search history, so that the information presented is from the same point of view. Social media networks are crucial for solving problems and helping people achieve their goals (Anggreini, 2016). Additionally, social media can negatively impact its users, including unverified information or so-called hoaxes, which are widely found on social media and cause significant public concern (Winantika et al., 2022). Therefore, critical digital literacy, awareness of information diversity, and constructive dialogue are essential to ensure that the values of Pancasila remain relevant and serve as a strong foundation for social cohesion.

Based on interviews, observations, and documentary studies, it was found that social media algorithms create conditions in which users are more frequently exposed to information from the same sources. Such repeated exposure to information from the same sources leads to information homogenization, which reduces the diversity of perspectives that should enrich users' understanding of an issue. In the context of Pancasila values, this information homogenization causes fragmented interpretations, especially regarding diversity and cooperation, because users are rarely exposed to different views.

Given that Pancasila serves as the foundation of the Republic of Indonesia, this shows that Pancasila is bound by legal force. This formal power structure consists of legal beliefs or an inner atmosphere that governs the foundation of the State (Susilawati, 2021). The digital community's perception of the character of Pancasila in the social media era shows various significant challenges. In the context of understanding Pancasila values, respondents in the digital era face distortions caused by filter bubbles created by social media algorithms. These algorithms, which are designed to present information based on user preferences, often narrow the information space so that respondents are only exposed to uniform views, weakening their awareness of the values of diversity, unity, and cooperation.

In addition, technological advancement intersects with human behavior and influences the ideology and national awareness of the younger generation (Suheri *et al.*, 2022). As active users of social media, young people are a vulnerable group to these negative impacts, resulting in their understanding of Pancasila values often being superficial or biased. To address these challenges, the government, society, and digital platforms must collaborate to create a healthy information ecosystem by enhancing digital literacy, ensuring algorithm transparency, and promoting content supporting Pancasila values.

Strategies to Prevent Distortion of Pancasila Values Due to Filter Bubbles on Social Media

One of the main strategies found to overcome the impact of filter bubbles is improving digital literacy. Digital literacy encompasses the ability of the public to understand, evaluate, and critically use information in the digital world. Based on the results of a documentary study, digital literacy helps users recognize algorithmic bias and realize that information received on social media does not always reflect the truth or diversity of perspectives. With this ability, the public can proactively seek information from diverse sources, thereby maintaining a comprehensive understanding of Pancasila values.

In the context of Pancasila as the foundation of the State's moral guide for the Indonesian people, filter bubbles can threaten a comprehensive understanding of Pancasila values. Filter bubbles tend to expose users only to similar perspectives and minimal variation in information, which can lead to division and polarization within society (Wulandari et al., 2021). As a result, interpretations of values such as diversity, justice, and unity may be distorted. Therefore, efforts to prevent and reduce filter bubbles are crucial, mainly to ensure that the understanding of Pancasila's character remains intact and undistorted.

Efforts to overcome the filter bubble so that the character of Pancasila is not distorted include recognizing the type of content needed and cross-checking information from various sources, utilizing platform features to limit or filter content that appears, focusing on content that has benefits or value for life, and appreciating quality and valuable content. It can be concluded that the main way to overcome the filter bubble problem is by improving digital literacy among the public. Digital literacy involves understanding, evaluating, and critically utilizing information in the digital world. Other studies emphasize the importance of improving media literacy and transparency on social media platforms to address this phenomenon (Krafft & Donovan, 2020). In addition, improving critical skills is also essential in selecting and evaluating the content consumed (Van de Ven & van Gemert, 2022). Social media users should be taught to recognize algorithmic biases and understand that not all information they receive reflects the truth or a complete perspective. By increasing this awareness, the public can seek information from diverse sources to ensure they are not exposed to only a particular viewpoint.

Furthermore, it is important to encourage social media users to actively explore diverse content. Social media can potentially improve society's literacy (Hadiapurwa *et al.*, 2023). Many digital platforms provide options to follow pages or groups with different perspectives. Disseminating diverse information and inviting discussion encourages users to question their perspectives and open themselves up to other points of view (Makhortykh & Wijermars, 2021). For example, to understand the values of Pancasila, someone can join an online discussion community that focuses on tolerance, diversity, and national insight. By interacting in forums that contain various views, users will be exposed to broader perspectives so that their understanding of values such as unity and social justice can develop more inclusively.

Digital platform developers can be encouraged, even regulated, to create algorithms that encourage the exploration of diverse information rather than narrowing users' preferences. The design of social media platforms plays an important role in breaking filter bubbles and promoting access to diverse information to strengthen democracy (Bozdag & Hoven, 2015). Encouraging digital platform developers to design algorithms that promote the exploration of diverse information can be achieved, for example, by providing content recommendation features from different perspectives or displaying content based on specific important themes such as nationality or social issues. With this intervention, filter bubbles can be reduced systematically.

Through a combination of digital literacy, algorithm reform, critical education, government policy, and individual awareness, the negative impact of filter bubbles on understanding Pancasila values can be significantly reduced. The role of the government is also no less important in dealing with the effects of filter bubbles on social media. Social media struggles to teach diversity because their algorithms often filter content to suit user preferences, causing a filter bubble effect (Lomboe et al., 2024). Therefore, adequate regulations must be implemented to ensure digital platforms adhere to specific ethical standards in information distribution. As such, the government can collaborate with platform providers to ensure that their algorithms do not undermine social cohesion or narrow the space for public discussion.

Curriculum Transformation and Social Media Regulation to Strengthen Pancasila Character

Interview results indicate that "curriculum transformation in education can play a crucial role in strengthening public understanding, particularly among the younger generation, of the Pancasila character." By integrating digital literacy as an integral part of the formal education curriculum, from elementary school through higher education, students are taught about technology and how social media algorithms function, recognize misinformation, and understand the importance of information diversity. Efforts to build character that need to be focused on in Indonesia through the analysis of filter bubbles on social media and their implications for the distortion of character understanding through digital literacy are in line with Peraturan Presiden Nomor 7 Tahun 2018 tentang Badan Pembinaan Ideologi Pancasila and Peraturan Pemerintah Republik Indonesia Nomor 71 Tahun 2019 tentang Penyelenggaraan Sistem dan Transaksi Elektronik. Integrating digital literacy into the education curriculum also positively impacts students' digital literacy skills. Therefore, it is important to pay attention to the facilities developed by the government to support digital literacy, such as ensuring internet accessibility and digital services. Thus, the role of educational institutions is crucial in building a society capable of addressing the challenges posed by filter bubbles.

In addition, critical thinking, understanding issues from various perspectives, and applying Pancasila values in daily life must be part of formal and informal education programs. The moral values of belief in God and just and civilized humanity from the principles of Pancasila must be the basis for developing science and technology (Kartawijaya *et al.*, 2021). Pancasila has the power to stop the adverse effects of globalization and encourage the younger generation to have positive morals and perspectives. As Indonesians, we can maintain the integrity of the Pancasila ideology to preserve the unity of the State and the nation (Rizqullah & Najicha, 2022).

Fundamentally, education based on Pancasila can foster good citizenship and patriotism (Rusdiyani, 2016). This process can be carried out through discussions, debates, or project-based activities involving students exploring differences and finding solutions. Thus, this curriculum transformation can reduce the

influence of the filter bubble by opening space for students to get to know various perspectives so that the inclusive values in Pancasila can be better internalized.

In addition to curriculum transformation, this study provides strategic policy recommendations related to social media algorithm regulation. The State needs to regulate digital platforms through policies that prioritize algorithm transparency. This transparency allows the public to understand the mechanisms behind information filtering, thereby minimizing the risk of information manipulation. Improving media literacy and transparency of social media platforms is very important in dealing with this phenomenon (Krafft & Donovan, 2020). This step requires technology companies to disclose how algorithms organize and present information to users. Thus, algorithm transparency and effective regulation are essential to prevent information manipulation and ensure access to diverse information.

Regulations must also include oversight of content that can potentially reinforce polarization or spread disinformation. Strict sanctions must be imposed on platforms that violate the rules while maintaining a balance between regulation and freedom of expression (Kurnianto & Abdusshomad, 2024). On the other hand, government-owned media can be used as a tool to provide balanced information, educate, and promote Pancasila values to the broader community. To strengthen the positive impact of regulation and education, the State must also create inclusive spaces for dialogue in the real and digital worlds. Collaboration with civil society organizations, academics, and digital communities is also key in developing digital literacy programs and formulating policies responsive to the filter bubble's dynamics. Therefore, collaborative efforts between the government, the digital industry, and civil society are needed to strengthen the supervision and regulation of the digital industry and improve the digital and critical literacy of the public in dealing with this phenomenon (Akbar *et al.*, 2022).

Through a combination of curriculum transformation, transparent regulations, and strengthened dialogue spaces, the State can overcome the negative impacts of filter bubbles and strengthen public understanding of Pancasila's values. These strategic steps ensure the sustainability of Indonesian democracy, protect social harmony, and preserve cultural diversity as the nation's foundation.

CONCLUSION

The phenomenon of filter bubbles in social media shows how personalization algorithms can create homogeneous information spaces that limit users' exposure to alternative perspectives. This process is driven by the history of user activity collected by algorithms, resulting in predictions of interests that then organize relevant content according to preferences. Although this approach enhances the personalization experience, it also reinforces confirmation bias, reduces information diversity, and fuels social polarization. In the context of Pancasila values, this phenomenon can weaken awareness of diversity, unity, and cooperation and hinder a holistic understanding of the nation's ideology.

Overcoming the impact of filter bubbles requires implementing various strategic measures, including improving digital literacy, reforming algorithms, and transforming the education curriculum. Digital literacy is important in equipping the public to understand algorithmic mechanisms and encouraging the exploration of diverse information. Additionally, the government must regulate algorithm transparency and ensure regulations promoting inclusive content presentation. Educational institutions can also play a key role by incorporating Pancasila values into the curriculum to instill a deeper understanding of diversity and inclusivity. Collaborative efforts between the government, digital platforms, and society are necessary to maintain social cohesion, strengthen Pancasila values, and protect cultural diversity in the digital age.

AUTHOR'S NOTE

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554