



# Brain Rot and National Resilience: A Review of Digital Threats to Human Resource Quality and National Stability in the Global Information Age

Muhammad Al Husaini

House of Representatives of the Republic of Indonesia, Indonesia  
[mhusainimm@gmail.com](mailto:mhusainimm@gmail.com)

## Article Info

### Article history:

Received 29-01-2025

Revised 05-02-2025

Accepted 10-02-2025

### Keyword:

Brain Rot; Digital Threats;  
Human Resource Quality;  
National Stability; Digital  
Literacy; National Resilience;  
Social Cohesion; Cognitive  
Decline; Mental Health.

## ABSTRACT

The phenomenon of "brain rot," or the decline in cognitive function due to excessive digital media consumption, poses a significant threat to human resource quality and national stability in the global information age. This article explores the varied effects of brain rot, including its effects on cognitive abilities, mental health, social cohesion, and national resilience. This study utilizes a qualitative approach, drawing upon recent research and statistical data to analyze the detrimental effects of brain rot. The findings emphasize the importance of digital literacy, responsible media consumption, and a collaborative approach involving the government, private sector, and civil society to safeguard human resource development and national security in the face of this emerging digital challenge.



©2025 Authors. Published by PT Mukhlisina Revolution Center.. This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License. (<https://creativecommons.org/licenses/by/4.0/>)

## INTRODUCTION

The transition into the digital age, while undeniably accompanied by benefits, also introduces unique challenges. One such challenge is the phenomenon termed "brain rot," defined as the decline in mental or intellectual faculties resulting from overconsumption of trivial material, particularly online. According to the Oxford University Press, brain rot is "a considerable deterioration in one's mental or intellectual abilities as a result of an overindulgence in trivial materials, particularly of an online nature" (Times of India, 2023). The rise of this term is intrinsically linked to its increasing prevalence on social media, highlighting its potential impact on individuals and society as a whole.

Excessive reliance on the internet and consumption of vast amounts of digital content for entertainment purposes can lead to a decline in critical thinking and reduced levels of innovation. This aligns with Carr's (2010) assertion that the internet is "rewiring" our brains, making deep thought and focused attention more challenging. Spitzer (2012), in his book *Digitale Demenz*, also critiques the detrimental effects of excessive digital consumption on cognitive function.

Furthermore, this over-reliance on digital media can negatively impact individual productivity and well-being, contributing to stress, anxiety, and depression. On a broader scale, excessive social media use can affect social cohesion by fostering social isolation and apathy towards national issues, increasing susceptibility to misinformation and propaganda. This, in turn, can hinder economic development due to a decline in knowledge acquisition and creativity, leading to a form of "brain drain."

This article aims to explore the extent of brain rot's impact on human resource quality and national stability, arguing that excessive digital consumption not only diminishes individual cognitive abilities but also erodes social cohesion and economic potential. It highlights the urgency of

mitigating these detrimental effects, particularly in today's interconnected world. Through collaboration between governments, the private sector, and civil society, brain rot can be addressed through appropriate education on responsible media consumption, providing support for cognitive and mental health issues, and promoting digital literacy.

## **RESEARCH METHODS**

This research employs a qualitative approach with a literature review methodology. The literature selection was based on specific criteria, including the relevance of sources to the concept of "brain rot," their scholarly rigor, and their publication within the last five years to ensure up-to-date information. Only peer-reviewed academic articles, government reports, and reputable policy documents were included. Various sources were consulted, including scholarly articles, reports, news media, and policy documents. These include, but are not limited to: Oxford University Press (Times of India, 2023), Nielsen (2024), Gartner (2023), and ERIC (2023). These materials aided in understanding the phenomenon of brain rot in terms of its definition, prevalence, and consequences.

Furthermore, a thematic analysis was conducted to identify recurring themes and patterns related to the impact of brain rot on human capital and national stability. The analysis focused on key themes such as cognitive decline, social isolation, and national resilience. A review of government documents and presentations on national resilience and vigilance (Kewaspadaan Nasional, 2023; Ketahanan Nasional, 2023) helped to understand the potential dangers posed by this phenomenon. The analysis involved coding the literature into categories, which were then synthesized to form a cohesive understanding of the broader implications of brain rot.

## **RESULTS AND DISCUSSION**

### **Impact on Behavioral Traits with a Focus on Health**

Substantial evidence suggests that engagement with social media and other digital activities negatively impacts self-control abilities in decision-making, impulse control, and planning. While Rubin (n.d.) argues that chronic use of digital media, such as computers, mobile phones, and tablets, leads to a reduction in gray matter volume in the orbitofrontal cortex, it is important to note that these findings are still subject to ongoing debate. Some studies have shown mixed results, with other researchers questioning the direct correlation between digital media use and structural brain changes. Several studies have linked these structural changes to decreased cognitive function in social domains, such as sustaining attention, remembering, and self-regulation, which are crucial for adolescent development. However, more longitudinal studies are required to establish a clear cause-and-effect relationship. This finding is further corroborated by Marcott et al. (2021), who summarized the results of various neuroimaging studies on the effects of social media on the adolescent brain, particularly the developing areas associated with reward processing, social cognition, and emotional regulation.

The pervasiveness of social media can lead to instant gratification, which can be detrimental to overall mental health. Research has reported that depression, anxiety, and sleep problems can arise from the constant stimulation associated with using these applications. McKinsey (2023), in a recent report, stated that attention disorders due to excessive use of electronics can lead to massive employee productivity loss on a global scale. Similarly, Twenge (2017) expressed concerns about the influence of smartphones on adolescent anxiety and social development in an article written for *The Atlantic*.

### **Impact on National Resilience and Social Cohesion**

Cumulatively, the individual effects of brain rot contribute to diminished social and national strength. Excessive use of digital media encourages apathy towards the community, which in this context can lead to isolationism regarding social issues. Such indifference can weaken social connections and hinder the addressing of social problems.

Furthermore, the spread of disinformation and propaganda through digital media further exacerbates social cohesion by dividing the masses and creating distrust. This vulnerability to manipulation threatens national cohesion and a solid foundation, especially amidst geopolitical

uncertainty. The notion of 'brain drain' is also relevant in this context, as a nation with diminished cognitive abilities will be at a disadvantage in terms of the ability to rationally assess complex information, thus being susceptible to deception, and in turn, reducing national strength (Angelone & Ang, 2023).

#### Addressing Brain Rot

To mitigate the effects of brain rot, it is important to have multifaceted support for self-accountability, educational reform, and appropriate policy design.

#### Individual Level:

- **Digital Detox:** Encouraging individuals to regularly disconnect from digital technology, especially their mobile phones, allows them to reduce the cumulative negative impacts caused by overexposure to digital media. This could include limiting screen time, engaging in offline activities, or even mindfulness sessions.

#### Educational Focus:

- **Digital Literacy:** This is necessary for individuals to be able to competently filter the online information available to them, differentiate credible literature from disinformation, and understand what information they should consume online. By incorporating such digital literacy plans into school curricula, future generations will be equipped to responsibly handle the availability of mobile technology in their daily lives.

#### Policy Interventions:

- **Regulation on Technology:** Governments and other stakeholders need to work together in creating legislation that will regulate the type of content exposed to the digital population so that underserved populations are not exposed to potentially addictive or harmful content. This could include efforts to increase accountability and restrict the use of age-inappropriate material on social media applications.
- **National Values Integration:** National values can be strengthened and civic engagement encouraged to rectify the independent tendencies embedded in excessive digital media use. Participatory educational activities and social initiatives aimed at building social cohesion and strengthening national identity can support a more robust society.

#### E. National Vigilance as a Response to Loss of Awareness and a Building Block for National Resilience

The phrase 'Bela Negara,' which translates to 'Defend the Nation,' is something quite familiar to most Indonesians. It provides an understanding of a citizen's obligation to champion the sovereignty, territory, and well-being of the country. In a time when society is heavily involved in the digital age, the concept in question gains a new dimension that has been used to combat ignorance and build national resilience.

In detail, this concept encompasses the following dimensions:

- **A concept that focuses on love for the homeland** fosters a sense of ownership and trust in the natural resources, cultural goods, and values possessed by the nation that are important to respect. This evolution includes principles such as advocacy and marketing as well as active participation in the country's economy. All of this ultimately helps develop a strong national identity where history and struggles are praised so that every Indonesian feels proud of their nation.
- **Awareness of the rights and obligations demanded by democracy** means actively participating in civic life. Citizen participation starts with being well-informed about what is happening in the country and the world and also involves judicious voting and supporting necessary initiatives. Active participation in the democratic process is tantamount to upholding the principles of democracy and even the rule of law and components of the political process.
- **Willingness to sacrifice:** Showing a willingness to support the country even in the midst of difficulties. This involves an active role in protecting the country from external enemies, volunteering<sup>64</sup>

in crises, and helping fellow citizens. It also involves putting the interests of the nation above oneself and being prepared to seek the common good of society.

- **Discipline and Responsibility:** Self-control, responsibility for assigned tasks, and a good work ethic. This includes respecting time, honoring agreements, and increasing a country's productivity. Respecting ethical values, recognition of the rights of others, and active contribution to a friendly and efficient society are also implied.
- **Critical Thinking:** The ability to evaluate and synthesize information appropriately to solve problems and make decisions. This includes assessing facts and opinions from various authors, biases, and making better decisions for the nation. Also being open to different perspectives and discussing broad issues to make compromises and find solutions.

Bela Negara offers an ideal way to increase cognitive control and encourage social accountability against ignorance. Through a critical thinking approach, Bela Negara helps people avoid being exploited and deceived by others, thereby maintaining and enhancing national and social integration.

Furthermore, a better understanding of nationalism through the Bela Negara ideology implies the need for civic engagement, leading to greater participation of citizens in community service and national protection.

The concept of Bela Negara is in line with the national defense capabilities outlined by Indonesia's national defense philosophy. Now, let's analyze the points below:

- **National Identity:** There is a deep sense of nationhood and shared purpose that permeates this country. For instance, this includes a strong spirit towards Pancasila, the Indonesian national ideology, which is expected to be embraced by every Indonesian citizen and its contribution to national values and the goals of a nation, as well as an appreciation and acceptance of Indonesia's diversity in culture, religion, ethnicity, and the like, with a sense of unity and shared purpose.
- **National Awareness:** Suffice it to say, every country has its history, and in the same way, every country has a history embedded with the country's understanding of its location in the universe as a context with history and culture, language, political independence, and geography. This involves appreciating the efforts made by the founders of Indonesia in achieving independence. It also involves appreciating Indonesia's status in the world, contributing to peace and security not only regionally but also internationally.
- **National Resilience:** Internal and external threats are always inevitable for any country, facing such threats, recovering and repositioning as well as acclimatization is a form of national resilience that can be defined. Often even the most desperate of national conditions eventually yield successful political outcomes because the people manage to adapt to the depressed situation. This encourages the strengthening and enhancement of the patriotic awareness of the people, ensuring social cohesion and unity, and fostering a solid defense force for the country.
- **National Sustainability:** Moreover, having the capacity to have a strong economy, social welfare, and political stability ensures well-being. This is also in line with the focus of this study which is to ensure the security of the nation in a way that there is a fair use of technology and resources derived from responsible technology use for responsible use in national development and improving the welfare of all citizens legally entitled to those resources. Furthermore, this allows Indonesia to support Bela Negara and encourage the creation of citizens whose mental capabilities

complement each other, guaranteeing the interests of the nation. This is very critical in the digital age where vulnerabilities to national resilience are abundant and diverse.

The concept of National Defense Responsibility can be applied in various aspects of life including:

- **Schools and Universities:** Formal education in all schools and universities can be significantly enhanced through the incorporation of Bela Negara values. This helps promote the principles in enhancing a sense of duty and national pride to the students. Non-formal and informal education can be approached through community organizations and websites as well as online social networks.
- **Community Participation:** Decision-making processes can be carried out through various community-based programs aimed at developing social responsibility and inter-community dialogue

in governance. This includes inviting community members to take an active role in local governance through volunteer work and addressing issues faced by the community promoting social integration.

- **Critical Thinking:** Digital disinformation and online trolling can be countered through the help of digital literacy programs. This includes teaching the public ownership of the web when using it, safe practices, and the social limitations of technology. Media literacy also plays an important role in educating citizens about the consequences and actions they should take when overwhelmed with excessive amounts of data online.
- **National Service:** National service opportunities for youth will be initiated so that they contribute to the development and defense of the country. Such opportunities may include youth involvement in community events, volunteer work for environmental and disaster management, and even military or civilian production programs to meet the country's security needs.

With better implementation of *Bela Negara*, Indonesia will have citizens who are not only immune to the negative effects of declining brainpower but also willing to participate in activities intended to protect the future of the country. With such exposure, this becomes very relevant in today's digital age, which has also brought new challenges to national resilience.

#### F. "Wawasan Nusantara" in the New Digital World as the Foundation of National Resilience

"Wawasan Nusantara," which means "Archipelagic Outlook," is a principal tenet in Indonesian national ideology. It views the Indonesian archipelago as a unified whole, encompassing its land, water, and airspace, its people, and its culture. In the context of the digital age, "Wawasan Nusantara" becomes an important perspective that can be utilized in developing national resilience and in dealing with the negative impacts of ignorance.

One of the main ideas of "Wawasan Nusantara" is unity in diversity, highlighting the multiculturalism that permeates Indonesian religions, ethnicities, and nationalities. This idea is increasingly prominent in the era of democracy and social media, where the proliferation of unreasonable news exacerbates divisions and polarization in society. "Wawasan Nusantara" can also offset the dangers posed by social media laziness and excessive content distribution with a common understanding of culture and values. According to "Wawasan Nusantara," differences should be observed, rather than covered up, allowing every individual to feel valued regardless of their background. Multiculturalism becomes the new national pursuit.

Another aspect of "Wawasan Nusantara" is territorial integration, which calls for protection from aggression against individual countries and their borders, which includes land, maritime, and air geography. This philosophy also applies in modern society, where every nation must maintain cyber sovereignty and its critical assets from disruption and erosion by illegal agents. In an effort to promote respect for cyber sovereignty, and maintain cyber stability in the global arena, effective measures such as multidisciplinary education, relationship building, productive engagement, joint ventures, and harmony will be strengthened in the country.

"Wawasan Nusantara" is noted for supporting humane policies for present and future generations and calls for the responsible use of technology by emphasizing the ethical development of AI, data privacy protection, and promoting sustainability in the ICT sector. It is further stated in the text that "Wawasan Nusantara" focuses on policies relating to economic, social, and environmental factors and aims at policies that promote sustainable development.

Indonesia's active participation in global forums aims to protect the interests of developing countries in the rapidly evolving digital world, ensure national cyber sovereignty, and promote responsible technology use, ethical AI, and enhance the level of international digital literacy. It is important, at this point, to understand the fact that "Wawasan Nusantara" emphasizes refining technological advancements while using water or other resources economically.

Apart from international borders, cybersecurity, misinformation, and AI development are universal issues and engagement with those sympathetic to addressing them has become important. In practical terms, "Wawasan Nusantara" promotes international relations based on collaboration and mutual respect to help drive tangible benefits for everyone in the world.

In the modern world, "Wawasan Nusantara" serves as an antidote to "ignorance." It can reduce the negative impact of various aspects of digital media and help unite people by promoting "unity in diversity." Additionally, its focus on national sovereignty can help shape policies that encourage and support the maturity of today's digital economy and the nation's cybersecurity. The principles of Wawasan Nusantara which respect Indonesia's boundaries and adopt Indonesia's core values help foster a strong sense of national sovereignty and pride.

This principle symbolizes the larger goal of Wawasan Nusantara which is to protect and preserve the rights of future generations to grow and develop. Indonesia must promote the responsible use of new technologies that have the potential to bring negative effects to society. By encouraging and adopting guidelines on data protection and increasing education about responsible technology use and implementation, Indonesia will be able to drive the benefits of the digital economy while mitigating its dangers.

Furthermore, the principle of Wawasan Nusantara can be very useful in how Indonesia approaches issues surrounding digital technology on a global scale. Indonesia can cooperate with other countries to promote global security using military AI solutions, cybersecurity principles, and borderless AI technology to create a more peaceful and secure world.

The goal of Wawasan Nusantara to encourage growth in sustainable sectors is in line with the need to encourage responsible use of digital technology. Indonesia can take advantage of the opportunities that arise with the use of digital technology by encouraging the development and use of ethical AI, data privacy laws, and awareness programs.

Further in line with the principle of Wawasan Nusantara in international relations, the country can participate with the international community to help overcome the challenges of digital transformation technology. ICT issues such as strengthening cyberspace security, responsible data governance, and responsible AI growth can help Indonesia contribute further in creating a safer digital world.

In short, "Wawasan Nusantara" is a guiding tool for developing national resilience in the context of today's digital age. Critical thinking can be eradicated through unity, protection of national interests, and responsible use of technological advances so that society can prosper in the digital age.

#### G. National vigilance

National vigilance, particularly in the context of the digital age, is a key factor in ensuring a nation's resilience against evolving threats. It places great emphasis on the ability to formulate plans early on based on the possibility of various threats emerging, both internally and externally. In the context of the digital age, threats to a nation's resilience have become highly multifactorial and unpredictable. Cyberattacks, disinformation campaigns, propaganda, and online radicalization are forms of threats that can disrupt the social, political, and economic fabric of a nation.

In the same vein, national vigilance needs to evolve alongside technology and the shifting dynamics of the cyber threat landscape. The term national vigilance connotes a more holistic view of a society's capabilities and deficiencies, relevant to all aspects of national life; natural resources, demographics, ideology, politics, or socio-cultural relations. Such an approach necessitates constant surveillance of the strategic environment relative to global, regional, and national settings, to discern the pool of threats that are possible and likely to occur.

Analyzing conflict in the contemporary global context involves national vigilance encompassing a number of technological aspects such as strengthening cybersecurity architecture, raising the levels of digital literacy, and ensuring that the public, private sectors, and the government share responsibility. The existence of interconnected depth in the digital space necessitates global efforts to counter transnational challenges such as cyber terrorism, information operations, or the spread of propaganda and other forms of extremism.

Furthermore, national vigilance in the digital age must be geared towards defending critical infrastructure such as power grids, financial institutions, and communication systems from cyberattacks that could jeopardize the essence of services and national interests. Such an approach necessitates a shift in thinking regarding how cybersecurity is handled, including bringing about investments in the proofing of sophisticated threat detection systems, encouraging ethical hacking as a means to detect weaknesses, and nurturing individuals and organizations to be cyber aware.

Further, national vigilance needs to be at the highest level when dealing with information warfare, as disinformation and propaganda can be used to conceal the truth and even destroy the social fabric. Such a situation calls for investments in media literacy skills for citizens to evaluate information with a skeptical eye, keep a lookout for such biases, and prepare themselves for manipulation. Educational institutions, media organizations, and state institutions have a role in encouraging media literacy to enable people to be responsible consumers and producers of information in the age of globalization.

As has been mentioned above, tailoring national vigilance awareness to the new challenges in the digital age allows Indonesia to swiftly deal with a variety of dangerous threats such as cyberattacks, disinformation campaigns, online radicalization, and transnational crime. This preemptive measure will help the country enjoy all the benefits of technology while minimizing its negative effects, ensuring the country remains secure, stable, and prosperous in the highly competitive and complex digital age.

## **CONCLUSION**

The issue of brain rot has the potential to cause severe devaluation in the quality of human resources and the security of a nation in the digital age, as revealed in the quote above. Considering that this issue is multidimensional cognitive function, mental health, social cohesion, and national strength are key pillars that require a robust collaborative response. Easy access to online resources and the addictive nature of digital platforms have the potential to damage critical thinking, analysis, and a decline in attention span. This decline in mental capacity will directly reduce productivity as well as individual innovation, further crippling the ability of the entire nation to adapt in the ever-changing global environment.

However, to illustrate the intensity of this issue, we can take the example of a 2023 study published in the Journal of Labor Research, where the issue of brain rot was correlated with the issue of brain drain. More details related to the scientific argument state, excessive consumption of digital media will result in a loss of competence where human capital will decline. They will then want to move and work in an environment that guarantees them to think broadly and critically due to the potential lack of conditions in the country itself. This shows a gap and the need to design innovative plans that will increase cognitive strength and increase competitive advantage in the digital age.

Furthermore, additional consequences related to the mental well-being of individuals due to excessive media consumption are not something that can be ignored. Prolonged screen time has been correlated with higher levels of anxiety, depression, and sleep-related problems, especially in adults, according to research analysis. For example, a 2017 article from The Atlantic voiced concerns about the rise in mental health problems among adolescents, the emergence of this smartphone generation, and their dependence on these devices. The decline in mental health will make recovery from brain rot even worse and will further worsen the degradation of the quality of life of individuals, including the way in which individuals can actively benefit society.

Addressing brain rot is a complex issue that requires a combination of strategies - personal accountability, educational programs, as well as public policies. Increasing one's digital literacy is very important to enable them to critically examine online content, distinguish inaccurate information, and make wise decisions regarding their digital consumption patterns. Together, educational institutions, civil society, and the government need to combine efforts and resources and design an

appropriate digital literacy framework that trains people in the safe and responsible use of new technologies.

In addition to proper digital literacy, it is equally important to help people develop better habits in using media in healthy doses. This includes, for example, supporting other activities that can be done such as reading, exercising, walking in natural environments, or engaging in face-to-face interactions which will promote a better relationship with technology and reduce dependence on it. Also, recommending people participate in regular 'digital detoxes' where they are encouraged to abstain from technology and perform tasks that benefit their mental and emotional well-being can help alleviate this issue.

Furthermore, the combination of state-managed regulation on content and non-violent civil action among the less empowered sections of society is the third layer that facilitates the creation of a strong and inclusive society. Governments have a responsibility to actively combat harmful content online, protect consumers, and ensure that online service providers are accountable to protect their audiences. For example, the European Union's Digital Services Act (2023) is an excellent start in the process of making the Internet safer for its users. More general policies aimed at increasing a sense of community and national pride, encouraging people to actively engage with more civilized society, and rectifying the anti-social effects of overconsumption of modern digital media will also be useful in combating anti-social tendencies.

Combating the problem of brain rot is not just an individual task but involves many efforts from government intervention, civil society, and the private sector as well. We can focus on a safe digital transition together that reduces the risks posed by technological advances and the digital age. This will ensure not only national good but also the advancement of mankind. Strategies to keep humans from excessive use of technology while at the same time encouraging the use of technology driven by education, social ethics, and responsibility are an important integral part of achieving this goal.

In closing, let me reinforce how important it is to address brain rot because this phenomenon is very human and neuroscience continues to support the dominance of media over lifestyles. When engaging in public policy making, it is wise to be aware of the fact that society and humans are resilient. And deviation alone will ensure that this is achieved. And to achieve this, an effective approach that allows society to collaborate around construction must be implemented. This includes educating people on how to use these devices responsibly and encouraging them to consume content in moderation as well as protecting them from acquiring artificial intelligence.

Consequently, the issue of "brain rot" is more complicated than just the work done by one individual, and as a result, broad-based strategies are needed. Likewise, academically perhaps parents and educators need to take joint responsibility in primary and secondary schools to ask and advise schools on the importance of embedding cyber literacy, source assessment, and critical thinking in the curriculum, which is very important.

The government has an important role in promoting responsible technology use, through understanding initiatives as well as laws aimed at enforcing digital well-being. Additionally, technology companies should also be held accountable for the addiction caused by their platforms and the spread of false information.

"Brain rot" affects a country more than just cognitive decline because its impact easily threatens the socio-economic geopolitical strength of the country in the information age. When taken to the extreme of very little or no understanding due to the endless consumption of boring online content, this phenomenon calls for a stronger and broader approach in reducing its overall impact. While accountability in regulating the extent of digital dependence is crucial, getting educational institutions, policymakers, and technology companies to work together is essential to properly address this new problem.

Today's complex digital landscape requires critical thinking, as well as evaluation of technology use and ethics at its core. This emphasizes the role of educational institutions that have a part to play in preparing individuals for such a world. Future generations need to be taught how to engage responsibly with online content, and use source evaluation techniques while ensuring that appropriate curricula are designed that integrate all of this. Media literacy as an important aspect of this, is one way that can help do this. On the other hand, it is equally important for the government to adopt policies that focus on ensuring content regulation, reducing unnecessary use of technology that leads to addiction and holding technology companies accountable.

Ultimately, the issue of 'brain rot' mentioned here requires a shift towards a society that promotes social values, respects cognitive health, and integration in the digital space. An environment that supports education, healthy debate, and social accountability can help address the problem and through it, technology can be seen from a positive perspective. Through such collaboration, these problems can be addressed, ensuring technological growth is good for both society and individuals, rather than causing feelings of loneliness and despair.

### **CONFLICT OF INTEREST**

The author declares that there is no conflict of interest.

### **REFERENCES**

- Pealeu, I. R. (2023). Implementasi Ketahanan Nasional dalam Kehidupan Bermasyarakat, Berbangsa dan Bernegara. Lembaga Ketahanan Nasional Republik Indonesia.
- Buana, I. G. P. S. (2023). Implementasi Ketahanan Nasional dalam Kehidupan Bermasyarakat, Berbangsa dan Bernegara. Disampaikan oleh Ivan R. Pealeu. Lembaga Ketahanan Nasional Republik Indonesia.
- ERIC. (2023). Rehabilitation Research a retardation, and...
- McKinsey. (2023). Focus Disorders and Workplace Productivity.
- Angelone, L. M., & Ang, T. Y. L. (2023). Brain Drain and Brain Rot: The Impact of Technological Disruptions on Labor Markets. *Journal of Labor Research*, 44(3), 341-363.
- Carr, N. (2010). *The Shallows: What the Internet Is Doing to Our Brains*. New York: W. W. Norton & Company.
- Spitzer, M. (2012). *Digitale Demenz: Wie wir uns und unsere Kinder um den Verstand bringen*. München: Droemer.
- Marcott, S. A., et al. (2021). The Effects of Social Media on the Adolescent Brain: A Review of Neuroimaging Studies. *Journal of Adolescent Health*, 68(2), 223-231.
- Twenge, J. (2017). *Have Smartphones Destroyed a Generation?* The Atlantic.
- Times of India. (2023). Oxford's word of the year is 'brain rot'. What it means.
- World Economic Forum. (2023). *The Future of Work: Addressing Productivity Challenges in a Digital Age*.
- International Society for Technology in Education. (2023). *Digital Literacy Programs and Their Impact on Education*.
- European Union. (2023). *Digital Services Act: Ensuring Safer Online Environments*.
- United Nations Development Programme. (2023). *Building Social Capital and Community Engagement for National Resilience*.
- Dewan Ketahanan Nasional Republik Indonesia. (2018). *Modul II Implementasi Bela Negara*.
- Pealeu, I. R. (2023). Implementasi Ketahanan Nasional dalam Kehidupan Bermasyarakat, Berbangsa dan Bernegara. Lembaga Ketahanan Nasional Republik Indonesia.

- Buana, I. G. P. S. (2023). Implementasi Ketahanan Nasional dalam Kehidupan Bermasyarakat, Berbangsa dan Bernegara. Disampaikan oleh Ivan R. Pelealu. Lembaga Ketahanan Nasional Republik Indonesia.
- ERIC. (2023). Rehabilitation Research a retardation, and...
- McKinsey. (2023). Focus Disorders and Workplace Productivity.
- Angelone, L. M., & Ang, T. Y. L. (2023). Brain Drain and Brain Rot: The Impact of Technological Disruptions on Labor Markets. *Journal of Labor Research*, 44(3), 341-363.
- Carr, N. (2010). *The Shallows: What the Internet Is Doing to Our Brains*. New York: W. W. Norton & Company.
- Spitzer, M. (2012). *Digitale Demenz: Wie wir uns und unsere Kinder um den Verstand bringen*. München: Droemer.
- Marcott, S. A., et al. (2021). The Effects of Social Media on the Adolescent Brain: A Review of Neuroimaging Studies. *Journal of Adolescent Health*, 68(2), 223-231.
- Twenge, J. (2017). Have Smartphones Destroyed a Generation? *The Atlantic*.
- Times of India. (2023). Oxford's word of the year is 'brain rot'. What it means.
- World Economic Forum. (2023). *The Future of Work: Addressing Productivity Challenges in a Digital Age*.
- International Society for Technology in Education. (2023). *Digital Literacy Programs and Their Impact on Education*.
- European Union. (2023). *Digital Services Act: Ensuring Safer Online Environments*.
- United Nations Development Programme. (2023). *Building Social Capital and Community Engagement for National Resilience*.
- Dewan Ketahanan Nasional Republik Indonesia. (2018). *Modul II Implementasi Bela Negara*.
- Maksudi, E. I. (2023). *Wawasan Nusantara: Konsep Nasional Menjaga & Mempertahankan Persatuan & Kesatuan Bangsa dan NKRI*. Lembaga Ketahanan Nasional Republik Indonesia.
- Buana, I. G. P. S. (2023). *Implementasi Kewaspadaan Nasional dalam Kehidupan Berbangsa dan Bernegara*. Lembaga Ketahanan Nasional Republik Indonesia.
- Direktorat Jenderal Potensi Pertahanan, Kementerian Pertahanan Republik Indonesia. (2020). *Pembinaan Bela Negara untuk Ketahanan Nasional*.