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The Resource Curse and Corruption in Indonesia: A Governance Analysis

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Abstract

The integration of artificial intelligence (AI) in education offers significant opportunities for innovation, including personalized learning, adaptive assessment, and administrative efficiency. However, these advancements simultaneously present critical ethical and governance challenges, particularly concerning data privacy, algorithmic bias, transparency, and the risk of widening educational gaps. This research aims to critically examine how ethical and governance principles can be designed to balance the benefits of AI innovation with the need for responsible accountability. The research method uses a qualitative analysis of global policy documents, AI guidelines (such as those from UNESCO and OECD), and institutional case studies, complemented by semi-structured interviews with education and technology experts. The results indicate that while AI holds vast potential to transform pedagogical practices, existing governance mechanisms are often fragmented and inconsistently implemented. Key gaps identified include low ethical literacy among educators, weak institutional accountability structures, and the absence of harmonized global policies. The contribution of this research is to propose a conceptual model of AI governance in education that integrates principles of transparency, fairness, and accountability with innovation strategies. This model offers clear direction for policymakers, institutions, and educators to use AI responsibly while safeguarding human values, thereby strengthening the discourse on the ethical use of AI in education.

Keywords: AI in education; ethics; governance; accountability; innovation; education policy

INTRODUCTION

Artificial Intelligence (AI) has emerged as one of the most transformative technologies in the last decade, reshaping diverse sectors, including education. Its rapid integration has opened unprecedented opportunities such as personalized learning pathways, adaptive assessments, real-

time feedback systems, and administrative efficiency that potentially enhance institutional performance and learners' outcomes (Holmes et al., 2022; Luckin, 2023; Chen & Zou, 2024). Within the Indonesian context, the adoption of AI is also gaining momentum, aligned with the government's digital transformation agenda and the increasing demand for flexible learning ecosystems in the post-pandemic era. However, despite these promises, the accelerating wave of AI-driven educational innovation simultaneously generates critical challenges that cannot be overlooked. Concerns about data privacy, algorithmic bias, transparency, and institutional accountability highlight the fact that innovation is not value-neutral but deeply entangled with ethical, legal, and governance dimensions (Williamson & Eynon, 2022; Zawacki-Richter, 2023; Selwyn, 2024).

While global initiatives such as UNESCO's Recommendation on the Ethics of Artificial Intelligence (2021) and OECD's AI Principles (2019) emphasize fairness, inclusivity, and human-centered values, their implementation across national and institutional contexts including in Indonesia remains fragmented. Ethical literacy among educators is still limited, and mechanisms for accountability and oversight are inconsistently enforced (Nguyen, 2023; Schiff, 2022; Fu, 2024). This gap underscores the urgency of constructing a governance framework that not only interprets international ethical principles but also contextualizes them into actionable models suited to local realities.

Previous studies have attempted to respond to this need. Holmes et al. (2022) mapped AI's pedagogical opportunities through adaptive learning environments, while Gouseti (2025) offered a systematic review of AI ethics in K–12 education. Barus (2025) examined students' perceptions of generative AI governance in higher education, and Kamali et al. (2024) investigated the ethical awareness of educators. Although these studies collectively highlight the importance of ethics, they remain fragmented some limited to technical potential, others to normative principles without producing an integrated governance model that balances innovation with accountability.

This research, therefore, seeks to address three critical gaps: first, the predominance of normative discussions without operational frameworks; second, the lack of harmonized policy connecting global principles to local educational needs; and third, the limited empirical exploration of governance mechanisms in practice. The novelty of this study lies in proposing a conceptual framework that integrates ethics, governance, and innovation into a unified model of responsible AI in education. Rather than positioning ethics as a constraint, this approach treats ethics as the foundation of sustainable and fair innovation. The contribution of this study is twofold: theoretically, to advance discourse on AI governance in education; and practically, to provide a roadmap for policymakers, institutions, and educators in strengthening ethical literacy and institutional capacity.

By adopting a qualitative analytical approach to global policy documents, international AI guidelines, and institutional case studies, this study aims to critically examine the ethical and governance challenges of AI in education and propose a conceptual model that balances innovation with accountability. The expected implications include supporting harmonized global and local policy frameworks, improving institutional readiness, and ensuring that educators are equipped to integrate AI responsibly within teaching and learning practices.

METHODS

This study adopts a critical qualitative approach with in-depth document analysis and semi-structured interviews as the primary data collection techniques. The approach was selected to critically examine the ethical and governance challenges in the application of Artificial Intelligence (AI) in education and to construct a conceptual model that balances innovation with accountability. The research design integrates document review, targeted case studies, and primary data from expert interviews.

Data Source

1. Thematic Analysis: Data from policy documents, case studies, and interviews are processed through thematic coding to identify recurring patterns in ethical concerns (transparency, fairness, accountability), governance mechanisms, and innovation strategies.
2. Comparative Analysis: Differences in AI implementation are explored by comparing policies and practices across countries and institutions, highlighting contextual strengths and weaknesses in aligning governance with ethical principles.
3. Conceptual Model Development: Findings from the analysis are synthesized to propose a conceptual framework for AI governance in education that integrates ethical values, innovation imperatives, and accountability mechanisms.

Data Analysis Techniques

1. Thematic Analysis: Data obtained from policy documents, case studies, and interviews will be analyzed using a thematic analysis approach. This process involves identifying key themes related to ethical principles (transparency, fairness, accountability), governance challenges, as well as the need to integrate innovation with accountability.
2. Comparative Analysis: To understand the differences in the implementation of AI in education, the researcher will conduct a comparative analysis between AI policies in different countries and institutions. The main focus is on a comparison between existing governance practices and ethical principles that should be applied.
3. Conceptual Model Preparation: Based on the findings of the data analysis, this study will develop a conceptual model of AI governance in education. This model integrates ethical principles, innovation strategies, and accountability in a single framework that can be used by policymakers, educational institutions, and educators.

Data Collection Procedure

1. Document Collection: This process involves collecting and sorting policy documents from various international organizations relevant to the topic of AI in education.
2. Qualitative Data Collection from Interviews: Semi-structured interviews will be conducted with 10 to 15 informants, consisting of education practitioners, AI experts, as well as policy makers involved in the implementation of AI in the education sector. These interviews are conducted online or face-to-face, depending on the availability of informants.

Validity and Reliability Criteria

1. Data Triangulation: To improve the validity and reliability of the findings, this study uses a data triangulation technique, by combining the results of document analysis, case studies,

and interviews. This process helps ensure that the findings obtained reflect a broader reality and are not limited to a single data source.

2. Member Checking: The results of the interview will be presented back to the informant to ensure that the interpretation and findings produced are accurate and in accordance with their perspective.

Ethical Procedures

As the study involves human participants, the following research ethics procedures will be strictly adhered to:

Informed Consent: All potential informants will receive a detailed information sheet and sign a formal consent form prior to the interview. This document explicitly outlines the research purpose, potential risks/benefits, confidentiality measures, and the right to withdraw at any time. Confidentiality and Anonymity: All collected data will be anonymized using pseudonyms (e.g., Informant A, Policy Maker B) to protect the identity of the participants and their institutions. Data storage follows institutional research standards (e.g., encrypted servers).

Data Security: Interview recordings and transcripts will be stored securely on password-protected devices, accessible only to the primary researcher, and destroyed after the required retention period stipulated by the funding/academic institution.

RESULTS AND DISCUSSION

Natural Resources Wealth and Corruption Levels in Indonesia

Indonesia is known as a country with abundant natural resources, including coal, nickel, gas, palm oil, and tropical forests. These natural resources play an important role in the country's economy, with these sectors accounting for more than 30% of Indonesia's total exports. Although it has great potential, this wealth does not automatically improve people's welfare. Facts show that although Indonesia has very abundant natural resources, the country still faces great challenges in managing and utilizing these resources to the fullest.

Based on the latest data from the Corruption Perceptions Index (CPI) 2024, Indonesia obtained a score of 34/100, placing the country at 115th out of 180 countries. This shows that, despite Indonesia's rich natural resources, high levels of corruption remain a serious problem. Corruption mainly occurs in sectors directly related to natural resources, such as mining licensing, forest management, and palm oil exports. This shows that there is an imbalance between the potential of natural resources owned by Indonesia and the achievement of social welfare that is not even.

This phenomenon reflects a paradox that is often referred to as the "resource curse" or the curse of natural resources. In the Indonesian context, although natural resources should be an asset to improve people's welfare, in reality these natural resources are actually the cause of social inequality. The high number of cases of corruption in the natural resources sector shows that such wealth is often misused by political and economic elites for personal gain, ultimately hindering inclusive and equitable economic growth.

Table 1: Indonesia's Natural Resources Wealth and Corruption Index (2024)

Key Indicators	Data Indonesia
Key Resources	Nickel, coal, palm oil, gas, tropical forests
Natural Resources Contribution to Exports	±30% of total exports
CPI Score 2024	34/100
Global CPI Rankings	115 of 180 countries
Corruption Issues Related to Natural Resources	Mining permits, coal mafia, forest management

This condition also exacerbates existing social inequalities, where most of the benefits from natural resources are not felt by the wider community. The Indonesian government needs to face the great challenge of managing these natural resources in a transparent and accountable manner so that its great potential can be harnessed for sustainable development, not just for the benefit of a few elites who control it.

Thus, although Indonesia has abundant natural resources, non-transparent management and rampant corruption have hindered the optimal benefits for the community. Implementing more transparent policies and strengthening supervisory institutions is an important step so that natural resources can provide real benefits for the development and welfare of the Indonesian people.

Weaknesses of Rent-Seeking Institutions and Practices in Indonesia

One of the main weaknesses undermining the effective and equitable adoption of AI in Indonesia's education sector lies in the absence of operational institutional frameworks capable of translating abstract ethical AI principles into actionable practice. While some universities and schools have rapidly begun experimenting with AI tools for functions like automated assessment, personalized learning path recommendations, and plagiarism detection, these nascent practices are critically not accompanied by ethical review boards or robust monitoring and auditing mechanisms. This gap creates an unregulated space where technological risks can easily manifest. Furthermore, informants frequently pointed out the challenge of overlapping and ambiguous regulations specifically, the lack of harmony between broad national Information and Communications Technology (ICT) policies and specific institutional guidelines which generates significant confusion and regulatory uncertainty for educators on the ground (Hadi & Anwar, 2023).

Empirical Evidence of Governance Failure Data derived from semi-structured interviews (n=12) with educators and administrators corroborate this institutional fragility, revealing three recurring and critical issues that function as major obstacles to ethical AI integration:

Lack of Ethical and Digital Training: Educators are often compelled to adopt AI tools without receiving proper ethical literacy training, relying predominantly on generalized vendor instructions. This deficit prevents them from critically evaluating AI outputs or identifying potential biases in the tools they deploy (Sari & Putra, 2022).

Significant Policy Gaps: The majority of educational institutions currently rely on antiquated or generic ICT policies that are insufficient for governing AI. These policies often lack specific AI-

related clauses addressing issues like algorithmic transparency, data use consent, or the intellectual property of AI-generated content, leaving critical operational decisions ad hoc and inconsistent (Santoso, 2021).

Ambiguous Accountability Issues: A crucial finding is the complete breakdown in the chain of command when algorithmic errors occur. When AI-driven systems produce errors, such as biased grading or wrongful plagiarism accusations, there is no clear accountability line delineating responsibility between the technology vendors, the deploying institutions, and the individual educators. This ambiguity allows systemic errors to persist without effective recourse for students (Wijaya & Susanto, 2024).

Collectively, these operational and policy gaps demonstrate that without urgent, targeted governance reform, the rapid integration of AI risks becoming a source of systemic educational instability and inequity rather than a driver of inclusive quality improvement.

Table 2: Examples of Natural Resources Corruption Cases in Indonesia

Year	Sector	Main Cases/Modes	Actors Involved	Potential Losses
2019	Oil and gas	Bribery for project procurement at Pertamina	State-Owned & Private Offices	IDR 250 billion
2021	Coal	Illegal mining permits in East Kalimantan	Regional Heads & Companies	IDR 1.8 trillion
2022	Oil palm	Manipulation of CPO (palm oil mafia) export quota	Ministry officials	IDR 3.5 trillion
2023	Minerba	Bribe for the extension of nickel mining permits	District Offices & Operators	IDR 2.1 trillion
2023	Forestry	Conversion of protected forests	Regional Heads & Investors	IDR 800 billion

This rent-seeking phenomenon not only has an impact on financial losses, but also worsens the quality of governance of the natural resources sector. Rent-seeking practices encourage officials and economic actors to focus more on personal gain than sustainability and equitable management of natural resources. It also hinders long-term development efforts that focus on the well-being of the community as a whole.

In addition, a complex bureaucratic system also makes things worse. Although the government has developed an OSS (Online Single Submission) system to facilitate licensing, implementation on the ground still shows direct interaction between officials and capital owners, which opens up space for illegal transactions. Although the digitization of the licensing system is expected to reduce corrupt practices, the reality is that this system is still hampered by weak supervision and law enforcement at the regional level.

The rent-seeking practices that take place in Indonesia show that the natural resources sector is often used for political and personal interests, rather than to advance the welfare of the community. Weaknesses in natural resource management institutions worsen resource management that should be able to bring more equitable economic benefits. Without profound institutional reforms, including improvements in transparency and accountability, Indonesia risks continuing to be trapped in a vicious cycle related to natural resources.

The Role of Stakeholders and Regulatory Challenges in AI Governance

The phenomenon of the resource curse or natural resource curse in Indonesia is not only reflected in the high level of corruption in the natural resources sector's management, but is also greatly influenced by the country's political economy dynamics.

Since the New Order era, Indonesia has leveraged its wealth of natural resources, such as oil and gas, to fund development and strengthen political power. Revenues derived from natural resources were used to support infrastructure development and reinforce the system of political patronage, where resources were essentially used to buy political support and finance power contests. Although Indonesia has transitioned to a democratic system, the legacy of this political patronage system still persists, creating a sustained dependence on the natural resources sector as a primary source of political funding (M. T. S. Siregar, 2020).

The legacy of this dependence is clearly visible in the post-reform era. The dominance of money politics and the high cost of elections have driven politicians and parties to actively seek funding from resource rents (D. F. J. Maizland, 2023). This scheme strengthens the grip of the business-political oligarchy that historically maintains exclusive access to major mining permits and large plantation concessions. Post-reform decentralization, which was intended to bring decision-making closer to the local community, has instead fractured the rent (rent fragmentation).

In the context of electoral democracy, the very high political costs have prompted politicians and parties to seek sources of financing from natural resource rents. Corruption cases in the management of mining permits, oil palm plantations, and the forestry sector often involve politicians selling access to natural resources to fund their political campaigns. The ICW report (2023) revealed that the natural resources sector is one of the largest contributors to corruption cases, with potential state losses of billions of rupiah. This shows that natural resources in Indonesia are more often used for the short-term interests of a handful of political and business elites, not for the benefit of the wider community.

Table 3: Political Economy Dynamics of Natural Resources in Indonesia

Aspects	Key Characteristics	Impact on Natural Resources Governance
Political System	Electoral democracy at a high political cost	Natural Resources are used as a source of campaign financing
Decentralization	Authority of natural resources permits at the regional level	Rent fragmentation, rampant local corruption
Political-Business Relations	Mining & palm oil business oligarchs dominate parliament & executive	Pro-corporate bias policies
Transparency	EITI & OSS initiatives have not been running optimally	Limited public access, prone to manipulation
Law & Enforcement	KPK weakens after revision of law (2019)	Low deterrent effect, relatively immune elite

This practice is also linked to the phenomenon of economic oligarchy in Indonesia, where a handful of business elites, especially in the mining and plantation sectors, have a great influence in political decision-making. With such a great deal of control over the natural resources sector, these groups are able to influence government and legislative policies that in turn tend to favor

their interests, often at the expense of the interests of the people. In addition, post-reform decentralization gives great authority to local governments to issue mining and plantation permits. However, this policy does not strengthen good governance, but instead opens up opportunities for more local corruption practices.

With the enormous influence of political and business elites on natural resource management, institutional reform involving transparency in the management of this sector is urgent. Without significant changes in the governance and political system, Indonesia risks being caught in a perpetual cycle of corruption, where natural resources are used as tools to consolidate power and exacerbate economic and social inequality.

Political and economic dynamics that are closely intertwined with the natural resources sector make Indonesia vulnerable to the curse of natural resources. Entrenched patronage systems and reliance on natural resources-based political funding have created unsustainable management patterns. Indonesia needs reforms in natural resource governance that involve increased transparency, strengthening anti-corruption institutions, and economic diversification to avoid deeper resource curse traps.

The Impact of Development and Resource Curse in Indonesia

The resource curse phenomenon in Indonesia is defined not merely by systemic corruption in the natural resources sector, but by its far-reaching profound impact on uneven economic and social development. Endowed with abundant natural wealth, Indonesia theoretically possesses the fiscal muscle to accelerate crucial public investments in vital areas like infrastructure, education, and health. Yet, empirical evidence suggests the country is grappling with this curse, where heavy reliance on natural resources is often associated with lower long-term growth and failed wealth distribution (Hilmawan & Clark, 2019; Rosser, 2007; Erdoğan et al., 2020). This paradox is fundamentally rooted in governance failure: a significant portion of this potential national wealth is systematically leaked or mismanaged through systemic corruption, illicit financial flows, and persistent rent-seeking practices involving powerful political and business actors across the archipelago (KEMITRAAN, 2021; KPK, 2019).

This chronic leakage prevents the resource sector from translating into inclusive public welfare, thereby intensifying social and regional inequality. The wealth generated is often captured as rent by a handful of elites, instead of being channeled into productive sectors that could diversify the economy and support human capital development. This governance challenge highlights a critical deficiency in institutional capacity to manage natural resource revenues transparently and accountably. Ultimately, this failure creates a stark contrast: regions that supply Indonesia's massive resource wealth often suffer from underdevelopment, inadequate public services, and environmental degradation, while the economic benefits are centralized, perpetuating a destructive cycle where resources act as a source of national disparity rather than a foundation for shared prosperity.

From a macroeconomic perspective, Indonesia has experienced relatively stable economic growth with an average annual GDP of 5% over the past decade. However, although the natural resources sector contributes significantly to exports and GDP, its impact on job creation is very limited due to the capital-intensive nature of the natural resources industry. The mining and energy sectors, which are Indonesia's mainstay sectors, tend to require large investments and a

limited number of skilled workers. Therefore, although Indonesia is experiencing economic growth, the improvement of people's welfare is uneven, and social inequality remains high.

Table 4: Development Indicators and Resource Curse in Indonesia

Indicators	Indonesia Data (2023–2024)	ASEAN Comparison	Main Notes
Average GDP growth	±5% per annum	Malaysia 4.5%; Vietnam 6.0%	Stable, but the natural resources are not optimal
Natural Resources contribution to GDP	±11%	Nigeria ±20%; Venezuela >40%	Relatively moderate
HDI	0.707 (high category)	Malaysia 0.803; Thailand 0.800	Left behind despite abundant natural resources
Gini Index	0,38–0,40	ASEAN averages 0.35	Inequality is quite high
CPI Score	34/100	Malaysia 50; Singapore 84	Relatively high corruption
Environmental Issues	Deforestation, illegal mining	Philippines (lower natural resources)	Natural Resources → ecological degradation

Meanwhile, the impact of the resource curse is also seen in stagnant human development indicators. According to a UNDP report (2023), Indonesia has a Human Development Index (HDI) of 0.707, which puts the country in the "high" category. However, Indonesia is still lagging behind other ASEAN countries such as Malaysia (0.803) and Thailand (0.800). This indicates that although Indonesia has abundant natural resources, this wealth has not been able to translate into improved quality of education, health, and a better standard of living for the community.

In addition, social inequality also remains a big problem in Indonesia. Indonesia's Gini Index has been stagnant in the range of 0.38 to 0.40 for the past five years, which shows that although Indonesia is rich in natural resources, the distribution of wealth is still very uneven. The main cause of this inequality is the dominance of the business-political elite in the management of natural resources, which worsens people's access to the benefits of natural resources. Many of the benefits of the natural resources sector are concentrated in a handful of individuals and groups, while the majority of the population remains marginalized.

On the environmental side, ecological damage caused by the poorly managed exploitation of natural resources is also a significant impact of the resource curse. Deforestation resulting from aggressive oil palm plantation expansion, water pollution caused by coal mining, and extensive environmental damage from the burgeoning nickel industry are clear examples of how resource exploitation in Indonesia often leads to greater ecological losses than it provides in short-term economic benefits.

This massive environmental degradation, in turn, severely worsens the quality of life for local communities, particularly in areas that depend directly on healthy natural resources such as forests, clean water, and coastal ecosystems for their livelihoods. The cycle created by the resource curse means that the wealth generated is captured by a few political and business elites, while the costs, in the form of environmental destruction and diminished human well-being, are disproportionately borne by the poor and marginalized.

The development impact of the resource curse in Indonesia is very clearly seen in the form of high economic and social inequality, even though the country has abundant natural resources.

This wealth does not fully translate into an increase in people's welfare. Abundant natural resources are supposed to be important capital to improve people's quality of life, but dependence on the natural resources sector and weak management have exacerbated social inequality, damaged the environment, and hindered inclusive development.

Discussion

The study's findings reveal a paradoxical reality: Indonesia's abundant natural resources have failed to translate effectively into widespread, inclusive public welfare (Sachs & Warner, 1995). In line with the classic resource curse theory, natural resource wealth, which should inherently drive development, is often associated with high corruption and weak institutions. Despite being rich in coal, nickel, palm oil, and tropical forests, Indonesia continues to face significant social inequality. This governance deficit is now mirrored in the rapid adoption of Artificial Intelligence (AI) in education. As M. Johnson (2021) notes, countries implementing new technology without robust ethical frameworks often encounter issues like algorithmic bias and severe data security risks, thereby hindering the social and economic benefits these technologies are meant to deliver. These systemic weaknesses in natural resource management, driven by rent-seeking behavior where political and economic elites capture resource profits (Krueger, 1974) now manifest as a "governance-seeking" gap in the education sector. Institutions are prioritizing the rapid adoption of AI tools over establishing clear ethical protocols and accountability lines, with interview findings clearly demonstrating that the lack of training, significant policy gaps, and accountability issues (Table 2) are major obstacles to equitable and ethical AI integration.

The detrimental impact of poor management on the quality of life for resource-dependent communities now finds an echo in the potential for educational inequity via AI. The potential for algorithmic bias in AI assessment and recommendation tools can lead to greater educational injustice, especially for marginalized groups, far outweighing short-term efficiency gains (M. Smith, 2022). The fact that Indonesia is categorized in the "high" Human Development Index (HDI) category with a score of 0.707 (UNDP, 2023) but still lags behind neighboring nations underscores this problem: non-transparent AI implementation and rampant policy gaps could severely hinder the achievement of more equitable educational development. This condition indicates that Indonesia has not been fully immune to the risk of governance failure in AI adoption. As Acemoglu & Robinson (2012) emphasize, inclusive institutions are critical to ensuring that all resources (including transformative technologies) are utilized maximally for public benefit and long-term development. Therefore, governance reforms that enforce greater transparency, establish ethical review boards, and define clear accountability lines are key to ensuring AI becomes a source of development blessing, not a new form of educational inequality.

CONCLUSION

This study firmly establishes the imperative for robust AI governance within Indonesia's education sector to ensure ethical, equitable, and effective integration. While the rapid deployment of AI tools promises significant advances in personalized learning and administrative efficiency, this adoption is fraught with fundamental risks that must be proactively managed. These core risks include the threat to data privacy and security from collecting massive student datasets, the potential for algorithmic bias to codify and worsen existing social and regional inequalities, and the danger of widening the digital divide by exclusively benefiting well-resourced

institutions. A failure to regulate this technology adequately risks eroding public trust and ultimately hindering AI's transformative potential to genuinely improve the quality and equity of education across the archipelago.

To maximize benefits and mitigate these systemic risks, Indonesia must prioritize developing clear, adaptive, and inclusive policies for AI use in educational settings. This crucial policy roadmap involves establishing transparent accountability mechanisms for all AI-driven decisions, alongside significant investment to strengthen the digital and AI competency of both teachers and students. Furthermore, the governance framework must mandate the highest possible standards for data protection and sovereignty, ensuring that student data is handled securely and ethically. Only by institutionalizing this ethical and responsible AI governance can Indonesia successfully transform the technology into a sustainable tool for inclusive educational quality and genuinely equitable access for all its citizens.

BIBLIOGRAPHY

Daftar Pustaka Acemoglu, D., & Robinson, J. A. (2012). Why Nations Fail: The Origins of Power, Prosperity, and Poverty. Crown Business.

Barus, A. H. (2025). Students' perceptions of generative AI governance in higher education: A case study from Indonesia. Journal of Education Technology.

Chen, J., & Zou, D. (2024). A systematic review of artificial intelligence in education: Implications for research and practice. Computers and Education: Artificial Intelligence, 5, 100155.

Erdoğan, S., Saraçoğlu, B., & Akbostancı, E. (2020). The natural resource curse in developing countries: The role of institutional quality. Resources Policy, 67, 101683.

Fu, W. (2024). The policy gap in AI ethics: Assessing the implementation challenges of UNESCO's AI recommendation in Asian education systems. Asian Education and Development Studies, (Ahead-of-Print).

Gouseti, A. (2025). A systematic review of AI ethics in K–12 education: Mapping risks and governance principles. Learning, Media and Technology, 50(1).

Hadi, S., & Anwar, B. (2023). Overlapping regulations and policy fragmentation: Challenges for digital governance in Indonesian higher education. Journal of ICT Policy and Governance, 11(2), 150-168.

Hilmawan, E. C., & Clark, D. P. (2019). Does the natural resource curse exist in developing countries? The Quarterly Review of Economics and Finance, 71, 109-115.

Holmes, W., Persson, J., Rutz, O., & Wagner, A. (2022). Artificial intelligence and its potential in education. European Parliament, Directorate General for Parliamentary Research Services.

ICW (Indonesia Corruption Watch). (2023). Laporan Tren Korupsi 2023: Sektor Sumber Daya Alam Penyumbang Kerugian Negara Terbesar. Jakarta: ICW.

Kamali, B., Ali, R., & Zare, H. (2024). Investigating the ethical awareness of educators toward the adoption of AI in tertiary education: A cross-cultural study. International Journal of Educational Technology in Higher Education, 21(1).

KEMITRAAN. (2021). Studi Kasus Kebocoran Keuangan Negara di Sektor Sumber Daya Alam Indonesia. Jakarta: Kemitraan Partnership.

KPK (Komisi Pemberantasan Korupsi). (2019). Kajian Tata Kelola Sektor Pertambangan dan Sumber Daya Alam. Jakarta: KPK.

Krueger, A. O. (1974). The political economy of the rent-seeking society. The American Economic

Review, 64(3), 291-303.
Luckin, R. (2023). AI and education: A global perspective on the future of learning. Routledge.
Maizland, D. F. J. (2023). Political Financing and the Oligarchic Control of Natural Resources in Indonesia. Journal of Southeast Asian Political Studies, 45(1).
M. Johnson. (2021). AI adoption without ethics: Algorithmic bias and data risks in developing economies. Policy Review Quarterly, 15(4), 88-105.
M. Smith. (2022). Algorithmic bias in educational assessment: Implications for marginalized student populations. Educational Technology Research and Development, 70(3), 850-869.
Nguyen, T. P. (2023). The imperative for ethical literacy: Challenges in adopting AI in Vietnamese higher education. Journal of Applied Educational Technology, 7(1), 45-60.
OECD. (2019). Recommendation of the Council on Artificial Intelligence. OECD.
Rosser, A. (2007). The politics of the resource curse: Indonesia and the resource curse debate. Third World Quarterly, 28(2), 349-369.
Sachs, J. D., & Warner, A. M. (1995). Natural resource abundance and economic growth. National Bureau of Economic Research Working Paper Series, No. 5398.
Santoso, R. (2021). Policy vacuum in the digital age: A critique of ICT policy for governing AI in Indonesian education. Jurnal Kebijakan Pendidikan Nasional, 5(3), 201-218.
Sari, D., & Putra, W. (2022). Enhancing ethical literacy: Training models for educators in AI-driven assessment environments. International Journal of Educational Research and Reviews, 10(1), 12-25.
Schiff, D. (2022). The ethical adoption of AI in education: A framework for policy and practice. Educational Policy Analysis Archives, 30(30), 1-28.
Selwyn, N. (2024). Troubleshooting AI in Education: Critical perspectives on technology and teaching. Routledge.
Siregar, M. T. S. (2020). The political economy of natural resources: Patronage and corruption in post-Suharto Indonesia. Contemporary Southeast Asia: A Journal of International and Strategic Affairs, 42(3), 441-463.
UNDP. (2023). Human Development Report 2023/2024: Breaking the Gridlock. United Nations Development Programme.
UNESCO. (2021). Recommendation on the Ethics of Artificial Intelligence. UNESCO.
Wijaya, A., & Susanto, H. (2024). Algorithmic errors and the crisis of accountability: The challenge of AI grading in Indonesian high schools. Journal of Educational Measurement and Evaluation, 12(1), 50-65.
Williamson, B., & Eynon, R. (2022). AI, education and the governance of innovation: A critical analysis. Routledge.
Zawacki-Richter, O. (2023). Ethical challenges and implications of AI in higher education: A systematic review. Distance Education, 44(1), 1-20.