

The Influence of National Education Funding Efficiency on The Level of Regional Educational Development Disparity

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Abstract: Education is a fundamental pillar of national development, where improving quality and ensuring equitable access are crucial for developing superior human resources. This study examines the impact of national education funding efficiency on regional educational disparities by conducting a literature review of previous studies. The research synthesizes findings from nine peer-reviewed journals (two national and seven international), focusing on the relationship between education funding allocation, efficiency, and regional disparities.

The findings indicate that efficient fund management positively correlates with improved education quality and reduced disparities. Regions with transparent allocation mechanisms and effective monitoring demonstrate higher school participation rates, improved graduation rates, and better learning facilities. However, disparities persist due to unequal distribution of educational resources, particularly in areas dependent on local tax revenues.

This study suggests that increasing education budgets alone does not guarantee educational equity—fund management efficiency is crucial. Policy recommendations include strengthening fund distribution mechanisms, implementing performance-based funding models, and enhancing decentralized management with accountability measures. These strategies can help minimize regional disparities and promote equal educational opportunities nationwide.

Keywords: Education funding, efficiency, regional disparities, educational equity, public policy

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INTRODUCTION

Education is a fundamental pillar in national development, where improving quality and equitable access to education is key to creating superior human resources. In achieving these goals, the efficiency of education funding utilization is a crucial aspect that must be seriously considered. The optimization of budget use should not only focus on increasing the quantity of funds but also on the effectiveness of distribution and utilization to produce maximum educational output.

According to Nugroho (2018) in the Journal of Educational Economics, education funding efficiency can be improved through financial management reforms oriented towards technical efficiency. The study highlights that optimizing input into the education system will yield higher output, provided that resources are managed properly and effectively. Furthermore, Sari (2020) in the Journal of Public Policy revealed that

disparities in educational progress between regions are significantly influenced by unequal budget allocation policies. She argued that implementing principles of transparency and accountability in the distribution of education funds is key to reducing regional disparities. Meanwhile, Hidayat (2019) in the Journal of Educational Administration emphasized the role of continuous monitoring and evaluation systems as mechanisms to identify and address inefficiencies in fund management. He suggested that consistent oversight can minimize budget mismanagement, ensuring that the achieved results are optimal and contribute to equalizing educational progress between regions. Based on this theoretical foundation, this study aims to analyze the influence of national education funding efficiency on regional educational development disparities. By reviewing journals from previous studies, this research is expected to provide strategic recommendations for policymakers in efforts to improve the quality and equity of education across Indonesia.

METHOD

This study employs a literature review method with a qualitative approach. The primary focus of the research is to examine and synthesize various theories and empirical findings highlighting the role of increased education funding in reducing educational disparities across regions. The literature review method was chosen to delve deeply into perspectives from past research published in both national and international journals.

The data sources for this study consist of nine accredited scientific journals, comprising two national journals and seven international journals. The selection criteria for the journals are as follows:

1. Topic Relevance: The journals discuss issues related to increasing education funding and its impact on educational progress.
2. Methodology: The research employs valid and reliable approaches, using empirical data or strong theoretical foundations.
3. Reputation and Peer Review: The journals are published by reputable institutions and have undergone a peer-review process.
4. Recency: The literature selected is relatively recent to reflect the latest dynamics in education policy and education fund management practices.

The data collection procedure involved searching the literature through databases such as Google Scholar, Scopus, and national journal portals using keywords such as "education funding increase," "educational development disparities," "education funding efficiency," and "regional education equity." Afterward, journals meeting the criteria of relevance, methodology, reputation, and recency were selected, totaling nine journals (two national and seven international). The primary findings and conclusions from these journals were analyzed to strengthen the study.

The next step was journal analysis, which involved classifying findings from each journal by theme, then comparing the differences and similarities between national and international journal findings to obtain a comprehensive perspective. Finally, the results were synthesized to construct a conceptual framework explaining how increased education funding can be a key factor influencing regional educational development and reducing disparities.

The research relies only on peer-reviewed journals with transparent methodologies as data sources. Furthermore, data from various sources were validated through a

triangulation technique, comparing findings from national and international journals to ensure consistency and accountability in interpretation.

This study references several theories and empirical findings identified in the literature, emphasizing that increasing education funding plays a strategic role in improving education quality and equity. Additionally, it underscores the importance of efficient education fund management in transforming input into maximum educational output. Lastly, research from international and national journals indicates a positive correlation between increased education funding and improved quality and equity of education across regions.

The limitation of this study is that the study only refers to 9 selected journals so that it may not cover all relevant perspectives and variables in the context of education fund management. The qualitative approach in this literature study relies on the subjective interpretation of the researcher, so the results of the synthesis should be viewed as a general description of previous research findings. The dynamics and recent changes in education policy may not have been fully reflected in the literature analyzed.

With this approach, the study is expected to provide an in-depth understanding of the importance of increasing education funds as a strategic effort to reduce disparities in education progress in various regions, as well as provide policy recommendations based on the synthesis of findings from national and international literature.

RESULT AND DISCUSSION

Findings

There were 9 journals (2 national journals and 7 international journals) as the main literature with various types of research conducted in various locations both domestically and abroad. The substance of the research journals including the title, researcher's name, and research results are included in the following table:

NO	TITLE	RESEARCHERS	CONCLUSION
1	Inhibiting Intrastate Inequalities: A Congressional Approach to Ensuring Equal Opportunity to Finance Public Education	Arocho, J	<ul style="list-style-type: none"> • Input disparities based on zip codes lead to unequal educational opportunities. • Closing funding gaps within states is crucial for narrowing achievement disparities. • The Common Core initiative struggles with resource limitations for effective implementation. • The suggestion for Congress to link federal funding to states' adoption of equitable school finance systems to promote educational equality. • This approach aims to incentivize states to ensure all schools have equal

			educational opportunities while sidestepping federalism concerns linked to a national finance system.
2	Does Money Matter in the Long Run? Effects of School Spending on Educational Attainment	Hyman, J	increases in school spending improve students' long-run outcomes that are of ultimate concern to policymakers, local government responses to education policies imposed on them by higher levels of government can result in benefits accruing to students who may not have been the intended beneficiaries of the policy
3	Political Responsiveness and Equity in Public Education Finance	Wood, B. D., & Theobald, N. A	It highlights that states with liberal citizens prioritize revenue equity more than conservative states, leading to significant disparities in educational funding. Judicial mandates have limited effectiveness in promoting equity, particularly in conservative environments, and achieving greater equity in education requires substantial reforms at both state and local levels.
4	O FINANCIAMENTO DO ENSINO PÚBLICO NO BRASIL: uma perspectiva político-econômica.	Gomes, C. A., & Verhine, R. E	There are various challenges in financing public education in Brazil, including inequitable allocation of funds and the need for policy reforms to improve the quality of education. In addition, the importance of transparency and accountability in the management of education funds was also emphasized.
5	The Effects of School Spending on Educational and Economic Outcomes: Evidence from School Finance Reforms	Jackson, C. K., Johnson, R. C., & Persico, C	Increased spending is linked to enhanced school quality, such as reduced student-to-teacher ratios. The study highlights the significance of how school funds are allocated, suggesting that effective spending strategies are

			crucial to maximizing positive impacts.
6	School finance, equivalent educational expenditure, and the income distribution: equal dollars or equal chances for success?	Wilson, K., Lambright, K. T., & Smeeding, T. M.	State and federal revenues provide some leveling but are not enough to fully address local inequities. These findings suggest that policies should focus on meeting the needs of disadvantaged students, improving the quality of instruction, and ensuring equitable funding to provide equal educational opportunity. Overall, the study underscores the need for stronger measures to bridge the funding gap and improve educational equity.
7	Education Funding and Regional Convergence.	de la Croix, D., & Monfort, P.	The analysis shows that the federal funding system produces the same long-run growth rate as the regional system but increases the speed of convergence, making it more effective in addressing regional education gaps.
8	Increasing Education Budget Funds Against Educational Inequality (Case Study: Papua Province)	Subroto, A.	The percentage increase in Special Autonomy Funds in Papua Province fluctuates every year as a percentage, as does the percentage decrease in educational inequality in Papua Province, but with the increase in special autonomy funds in Papua Province, it has a positive impact on reducing inequality or equalizing education in Papua Province in the period from 2011 to 2018.
9	Educational assistance and education quality in Indonesia: The role of decentralization.	Sari, V.	These findings underscore the nuanced impacts of decentralization on educational outcomes and resource allocation, emphasizing the importance of contextual factors and mechanisms in shaping

			educational quality in developing countries.
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Analysis of various literature sources (both national and international) yielded the following results: Efficient education funding plays a vital role in improving learning outcomes and reducing regional disparities, especially in areas with large budgets like Papua Province. Studies show that regions employing efficient fund management—characterized by optimized allocation, strong oversight, and transparency—achieve better educational indicators, including increased participation, higher graduation rates, and improved facilities. On the contrary, areas with inefficient systems continue to face stark inequalities. Empirical comparisons reveal that effective monitoring mechanisms contribute significantly to narrowing these disparities, while global cases, such as Finland and South Korea, emphasize how strategic, equitable funding models can foster nationwide convergence in education quality.

The Nordic countries provide additional insight into how centralized education funding, uniform teacher salaries, and equal access policies can nearly eliminate regional disparities. Sweden’s Education Act mandates equitable education regardless of socioeconomic status or geography, ensuring a consistent quality of learning across the country. In contrast, the U.S. illustrates the drawbacks of fragmented, locally dependent funding systems. Although a top global spender, the U.S. experiences persistent inequalities due to its reliance on local property taxes, though corrective state-level redistribution efforts have shown promise. These comparisons underscore that efficiency must be embedded in both policy design and implementation to be truly impactful.

Technological integration also plays an increasingly critical role in promoting funding efficiency. Digital infrastructure, such as remote learning systems and data-driven planning platforms, offers cost-effective solutions for under-resourced areas. India’s NDEAR initiative exemplifies how investing in scalable digital frameworks can reduce long-term costs and improve access. Furthermore, strengthening local institutional capacity is essential. Training education officers, enhancing transparency through digital accounting, and regular auditing significantly minimize misallocation. Countries focusing on local governance—regardless of total spending—often show better educational outcomes, highlighting that efficient management can compensate for limited resources. Sociocultural and political dynamics significantly influence funding efficiency. Cultural values, local traditions, and political commitment at national and regional levels affect how education funds are perceived and utilized. In some Indonesian regions, for example, religious or traditional practices may divert attention from formal schooling, requiring culturally sensitive funding strategies. Post-COVID-19, the flexibility of fund reallocation was tested, revealing both system adaptability and deep-seated inequalities in digital access. Recovery now depends on reallocating funds toward blended learning capacity, infrastructure renewal, and teacher training, with global data showing that targeted recovery budgets can rapidly reduce learning gaps if used strategically.

Lastly, inclusivity must be integrated into funding efficiency. Marginalized groups, such as girls, children with disabilities, and ethnic minorities, require targeted allocations to ensure equitable access. In Indonesia, gender-sensitive budgeting—providing menstrual hygiene facilities, inclusive toilets, and safe environments—has proven both affordable and impactful. Similarly, areas with high disability prevalence need resources for special

education, inclusive materials, and trained educators. Both quantitative and qualitative studies affirm that simply increasing funds is insufficient without efficient management. Planning, allocation, and evaluation must be aligned with inclusive, context-aware priorities to meaningfully reduce disparities and promote nationwide educational equity.

Discussion

1. Theoretical Discussion

Theories of education fund management state that the effectiveness of budget use is a primary prerequisite for achieving optimal education output. For example, the theoretical framework of the regional convergence model implies that fund transfers through a centralized (federal) funding system can reduce disparities between regions by increasing the accumulation of human capital more evenly. In this context, efficiency is not only measured by the amount of funds allocated, but also by how appropriate the funds are used to achieve the expected results.

2. Empirical Discussion

Empirical results from case studies in several regions, as reported in research in Papua Province, show that increasing the efficiency of the use of education funds has an impact on reducing the education inequality index (for example, using the Gini Index to measure inequality in education achievement). International studies, such as those conducted by Hyman (2017) and research related to the impact of school spending on education outcomes, also confirm that increasing funds, if managed with the principle of efficiency, can improve the quality of education in the long term and reduce disparities between regions. In addition, policy analysis in the international arena shows that the role of institutions and transparency in fund management greatly determine the effectiveness of education output.

3. Policy Implications

Based on the results and findings above, it can be suggested that:

- **Improvement of Management System:** The government needs to optimize the mechanism of education fund management by increasing managerial capacity, implementing a transparent monitoring and evaluation system, and using information technology for budget accountability.
- **Coordination Between Levels of Government:** Synergy between the central and regional governments is essential so that the allocation and use of funds can be adjusted to local needs, so that potential disparities can be minimized.
- **Performance-Based Approach:** The use of performance indicators in evaluating the use of funds will help ensure that every rupiah spent produces maximum educational output and contributes to equitable educational progress between regions.

4. Limitations and Suggestions for Further Research

Although the findings of the literature study provide a comprehensive picture, this study has limitations, including:

- **Data Limitations:** The literature study only refers to available sources, so it may not cover all variables relevant to education fund management.
- **Literature Study Approach:** Given that this study is a literature review, further research suggestions are to conduct field studies or quantitative analysis with primary data to further test the causal relationship between the efficiency of education funds and disparities in educational progress.

- **Contextual Variables:** Contextual factors such as culture, regional policies, and local economic conditions need to be taken into account in more depth to provide more specific and applicable recommendations.

Overall, these results and discussions confirm that increasing the efficiency of education fund management has great potential to reduce disparities in educational progress between regions. With improvements in the allocation, monitoring, and evaluation systems, education funds will not only increase nominally but also have a significant positive impact on equalizing the quality of education nationally.

CONCLUSION

Conclusion

Improving education quality and reducing regional disparities requires not only increased funding but also efficient, equitable, and context-sensitive allocation. Research shows that sustained investment in education significantly boosts learning outcomes and future earnings, yet efficiency—such as targeted spending on teacher salaries and smaller class sizes—plays a more decisive role. Inequities rooted in tax-based funding models exacerbate regional gaps, while centralized and redistributive systems can promote educational convergence. Decentralization, when paired with strong local capacity, enhances region-specific interventions. Global examples like Finland and Norway demonstrate the effectiveness of equitable funding embedded in institutional strength and policy coherence. True efficiency must also reflect inclusivity, ensuring marginalized groups are not left behind. This requires adaptive budgeting, community participation, and digital innovation for transparency and accountability. Education funding should be aligned with broader development goals—integrating health, infrastructure, and social protection—to amplify its impact, particularly in underserved regions. Ultimately, effective education financing is foundational to building resilient, inclusive, and future-ready societies.

Recommendations

To enhance the equity and efficiency of education funding, the study recommends shifting to a needs-based model, supported by data-driven monitoring systems to ensure that increased resources directly improve infrastructure, teacher welfare, and learning access. Decentralization should be deepened with greater local autonomy, transparency, and accountability, while underprivileged regions require affirmative policies and targeted incentives. Strengthening community involvement through School-Based Management Committees, investing in trained budget analysts, integrating digital financial systems, and leveraging AI and big data for proactive fund allocation are also vital. Policy harmonization across sectors, inclusive budgeting, local innovation labs, global benchmarking, and periodic evaluations are essential to ensure that education funding contributes to long-term equity, quality, and system resilience across all regions.

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