



Analysis of Effectiveness, Equity, and Capability in the Implementation of Free Education Policy in Subang Regency for the 2024–2025 Academic Year

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Abstract - This study aims to analyze the effectiveness, equity, and capability development in the implementation of the free education policy in Subang Regency for the 2024–2025 academic year. This research uses a qualitative descriptive approach with literature study and secondary data analysis sourced from Dapodik, BPS, the Subang Regency Education Office, as well as policy documents and BOS/BOSDA funding reports. Data analysis is conducted through thematic synthesis, content analysis, and source triangulation to ensure data validity and consistency. The results show that the free education policy has successfully increased access to education, evidenced by the increase in the Net Enrollment Rate (NER) in elementary schools from 98.6% to 99.3% and in junior high schools from 95.4% to 97.3%, as well as a decrease in the dropout rate at both levels. However, equity in education quality still faces serious challenges, particularly in the distribution of certified teachers, the availability of facilities, and the digital divide across regions. The Education Equity Index (IPE) of 0.82 indicates a medium to high level of equity, but there are still disparities between the northern–urban and southern–rural regions. In the framework of Rawls' Theory of Social Justice (1971), Sen's Capability Approach (1999), and Dunn's Policy Evaluation (2018), these findings indicate that the free education policy in Subang has achieved equality of access but has not yet achieved equity of outcomes. Limitations in facilities, teacher distribution, and digitalization hinder students' ability to develop their potential. This study recommends four main policy directions: (1) redistribution of certified teachers and continuous training; (2) spatial-based equity in educational facilities; (3) improving digital literacy for both teachers and students; and (4) the integration of a transparent, digital-based BOS reporting system. With these strategies, the free education policy in Subang is expected to not only expand access but also achieve social justice and human capability in the digital era.

Keywords: free education policy, education equity, capability, social justice, Subang

I. INTRODUCTION

Education is the primary foundation in building superior and competitive human resources (HR). In the framework of national development, the free education policy at the primary and secondary levels is an important strategy to guarantee the constitutional right of every citizen to receive education without financial barriers. This program is part of Indonesia's Vision 2045, as well as the implementation of the RPJMN 2025–2045 policy direction, which emphasizes equal learning opportunities, quality service improvement, and the strengthening of students' capabilities.

Subang Regency, a strategic area in West Java Province, has diverse socio-economic and geographical characteristics. The northern and central regions are dominated by industrial and urban areas, while the southern region is rural with limited educational infrastructure. According to BPS Subang data (2024), the poverty rate is 8.42%, and the spatial inequality between regions directly affects the equitable distribution of educational services.

The free education policy implemented by the Subang Regency Government since 2020, through the Regular BOS, BOSDA, and the abolition of school fees, has increased educational participation. Dapodik data (2025) shows that the Net Enrollment Rate (NER) for elementary schools has reached 99.3%, and 97.3% for junior high schools, with a decrease in dropout rates across all levels. However, educational quality equity has not been achieved. Schools in urban areas have better facilities, an ideal teacher-student ratio, and stable internet access; conversely, schools in rural areas lack certified teachers, laboratory facilities, and digital connectivity.

This phenomenon aligns with research by Psacharopoulos & Patrinos (2018) and Hanushek & Woessmann (2020), which emphasize that the removal of

school fees in developing countries increases participation but does not guarantee improved learning outcomes without support for teacher quality and learning resources.

In the context of digitalization, Van Dijk (2020) and UNESCO (2022) highlight that the digital divide is not only related to access to technology (first-level divide) but also to the ability to use and benefit from technology (second-level divide). In Subang, only 62% of schools have stable internet connections, and 45% utilize Learning Management Systems (LMS), widening the gap between regions and limiting the development of students' capabilities.

To address these issues, this study analyzes the effectiveness, equity, and capability in the implementation of the free education policy in Subang Regency. This study integrates the theories of Social Justice (Rawls, 1971), the Capability Approach (Sen, 1999), and Public Policy Evaluation (Dunn, 2018), which systematically assess the inputs, processes, outputs, and outcomes of the policy.

The Social Justice Theory (Rawls, 1971) is used because it can explain the distributive justice dimension, particularly how public policies should ensure the equitable distribution of educational resources to the most disadvantaged groups. The Capability Approach (Sen, 1999) is chosen because it provides an analytical framework to assess substantive justice, i.e., how policies not only open access to education but also expand the real capabilities of students to achieve equitable learning outcomes. Meanwhile, the Public Policy Evaluation theory (Dunn, 2018) is used because it explains the operational dimensions of policy implementation, including effectiveness, efficiency, and the impact of the free education program in the context of local governance. These three theories provide complementary foundations for understanding how free education works in terms of equity, capability, and policy implementation effectiveness.

Additionally, Gunnar Myrdal's theory of regional inequality (1957) is used to explain why, without affirmative interventions, regional disparities tend to widen, while the digital divide concept (Van Dijk, 2020) strengthens the dimension of digital equity in the modern context. The integration of these theories is expected to produce a comprehensive analysis of the effectiveness and fairness of the free education policy.

The novelty of this research lies in the integration of three main analytical dimensions—spatial equity, human capability, and the digital divide—into a single evaluative model of the free education policy at the district level. Unlike most previous studies that only focus on budget effectiveness or increased educational participation, this study evaluates to what extent the public policy shapes the equity of learning outcomes and the development of students' capabilities in the digital age. Thus, this study offers a more comprehensive and adaptive approach to the context of 21st-century education, especially in developing areas like Subang Regency.

The analysis of effectiveness, equity, and capability in the implementation of the free education policy is based on a conceptual framework that integrates the Social Justice Theory (Rawls, 1971), the Capability Approach (Sen, 1999), and Public Policy Evaluation (Dunn, 2018). These three theories are used complementarily to assess to what extent the free education policy not only expands access (equity of access) but also ensures fairness in learning outcomes and the expansion of individuals' capabilities to develop meaningfully.

In the framework of Justice as Fairness, Rawls (1971) proposes two main principles: equal basic liberties and the difference principle. The second principle emphasizes that fair public policies should provide the greatest benefits to the least advantaged. In the context of education, this principle means that local governments should prioritize the equitable distribution of resources for schools and disadvantaged regions. Therefore, free education is not just about removing financial barriers, but also an affirmative instrument to close quality gaps between regions.

Meanwhile, Amartya Sen (1999), through the Capability Approach, stresses that individual welfare cannot be measured merely by the availability of resources (inputs), but by an individual's ability to use these resources to create valuable functions for their life. Free education, from this perspective, can only be considered successful if it expands students' freedoms and capabilities to learn, think critically, and actively participate in social life. This means that the policy's success is not only measured by an increase in the Net Enrollment Rate (NER), but also by students' ability to achieve meaningful and independent learning outcomes.

To empirically assess policy effectiveness, this study adapts Dunn's (2018) public policy evaluation model, which views public policy as a system consisting of four main components: input, process, output, and outcome. This model enables researchers to trace the causal relationships between resources, implementation processes, and the social impacts generated, both direct (increased NER, reduced dropout rates) and indirect (improved quality equity and educational digitalization).

In addition to these three main theories, two additional approaches further strengthen the analysis. First, Gunnar Myrdal's theory of regional inequality (1957) through the concept of cumulative causation explains that without affirmative intervention, advanced regions will continue to

attract resources, while underdeveloped areas will continue to fall further behind. Second, Van Dijk's concept of the digital divide (2020) extends the dimension of education equity into the digital realm, including access to devices, user skills, and the benefits derived from utilizing educational technology. These two theories are relevant for understanding Subang's context, which shows real disparities between urban and rural areas in terms of digital facilities and teacher competence.

Based on the synthesis of these theories, this research builds a conceptual model that depicts the interactive relationship between the policy input dimension, the implementation process, and educational outcomes. The input dimension includes key resources such as BOS/BOSDA funding, free education regulations, and educators. The implementation process involves budget distribution, teacher equity, and the provision of physical and digital learning facilities. The policy outputs are reflected in the increased NER, reduced dropout rates, and improved teacher-student ratios, while the outcomes reflect the strengthening of students' capabilities through enhanced independent learning skills, digital literacy, and social participation in the school environment.

The relationships between elements in this model are dynamic and moderated by two important factors: spatial inequality (urban-rural divide) and school digital readiness. Therefore, policy effectiveness is not only determined by the size of the budget or the number of teachers but also by how these resources are distributed to regions and social groups that need them most. In this model, Rawls' dimension of justice serves as a normative guide, Sen's capability approach provides a substantive benchmark for success, and Dunn's evaluation model serves as an empirical analysis tool. The synergy of these three provides a comprehensive framework for explaining the extent to which the free education policy in Subang Regency is effective, equitable, and just in the context of human development.

In line with the urgency of ensuring that the free education policy not only expands access but also achieves substantive educational justice, this study aims to provide a comprehensive understanding of the implementation of this policy in Subang Regency. Specifically, this study is directed towards: analyzing the effectiveness of the free education policy implementation; assessing the level of educational equity through spatial dimensions, teacher distribution, and facility availability; evaluating how well this policy develops students' capabilities in the context of educational digitalization; and identifying the factors that hinder the achievement of equity of outcomes as the ultimate goal of a just educational policy. Thus, the research questions focus on how the free education policy in Subang is implemented, to what extent it achieves equity and capability development, and what structural barriers hinder the realization of equitable educational outcomes for all students.

II. RESEARCH METHOD

This study uses a descriptive qualitative approach with a systematic literature review method and secondary data analysis. The research design is evaluative, with a focus on public policy, aimed at assessing the effectiveness, equity, and capability enhancement of the free education policy in

Subang Regency. This approach was chosen because it allows for an in-depth analysis of complex public policies without the limitation of primary field data. The evaluation process uses the input-process-output-outcome framework as proposed by Dunn (2018), which is then adjusted to the dimensions of social justice from Rawls (1971) and the capability approach from Sen (1999). Thus, this study not only evaluates the administrative achievements of the policy but also examines how far the free education policy contributes to increasing justice and student capabilities.

This research utilizes two main types of data: quantitative secondary data and qualitative documentary data. Quantitative secondary data is obtained from various official sources, including: (1) the Dapodik data for 2024–2025, which provides information on the number of schools, teacher-student ratios, educational facilities, teacher certification, and digital access levels; (2) the Subang Regency Statistics Bureau (BPS) data for 2024, which contains socio-economic indicators such as poverty rates, unemployment, and the Human Development Index (HDI); and (3) the 2025 report from the Subang Education Office, which includes the realization of BOS and BOSDA funds, data on civil servant and non-civil servant teachers, and school distribution by region. Qualitative documentary data includes policy and planning documents such as the Subang Regent Regulation on free education, the Subang Education Office's Strategic Plan (Renstra) for 2020–2025, national and regional BOS reports, as well as official publications from UNESCO (2022, 2024) and OECD (2023) regarding education equity and digital equity. All of these data were selected because they are official, verified, and can be cross-checked across institutions to ensure the validity and reliability of the information used.

Data collection is carried out in three main stages. First, the source inventory stage involves tracing various academic documents and public policy using keywords such as “free education,” “education equity,” “capability,” “education digitalization,” and “social justice.” Second, the literature selection stage is based on inclusion and exclusion criteria, focusing only on literature published between 2018 and 2025 from credible institutions, such as academic journals, government reports, and publications from international organizations. Third, thematic data extraction is performed through a coding process for relevant information, focusing on three main themes: policy effectiveness, equity of educational resources, and the development of students' capabilities.

Data analysis is performed using a descriptive-comparative and thematic-integrative approach. The analysis starts with data cleaning and validation to avoid duplication or inconsistency across sources. Descriptive quantitative analysis is then carried out to calculate proportions, teacher-student ratios, and changes in Net Enrollment Rates (NER) and dropout rates (APS) over the years. Additionally, this study calculates the Education Equity Index (EEI) as a measure of resource equality across regions. The EEI is calculated using a composite index method covering four main indicators: the availability of laboratories, libraries, certified teachers, and stable internet access. Each indicator is normalized on a 0–1 scale and weighted proportionally based on UNESCO's (2022) guidelines, with the formula:

$$EEI = (0.30 \times \text{certified teachers}) + (0.25 \times \text{laboratories}) + (0.25 \times \text{libraries}) + (0.20 \times \text{stable internet access}).$$

In calculating the Education Equity Index (EEI), the weightings are adjusted based on the priorities of Subang Regency's educational policies and empirical conditions. The highest weight is given to the certified teacher indicator (0.30) because the local government has prioritized the improvement and equitable distribution of teacher quality, reflected in the teacher redistribution program, region-based PPPK recruitment, and the expansion of PPG access. Educational infrastructure is given a weight of 0.25 because significant disparities still exist, especially in the southern regions, making classroom rehabilitation, laboratory construction, and meeting the SPM (Minimum Service Standards) a major agenda for the local government. Stable internet access receives a weight of 0.20, in line with the Subang Smart Regency program, although digital infrastructure equity is still uneven and not yet a primary determinant for quality equity. Meanwhile, the student-teacher ratio (0.15) and library availability (0.10) receive lower weights because the variation across regions is relatively small and policy progress is relatively slow.

Thus, the weighting of the EEI reflects a combination of the UNESCO framework (2022) and the educational policy priorities of Subang Regency. The final results are categorized into three levels of equity: low (<0.6), moderate (0.6–0.8), and high (>0.8). Qualitative analysis is carried out thematically through the synthesis of previous research and policy documents using content analysis. This process aims to identify patterns of success, obstacles, and factors that influence policy implementation. To maintain objectivity, source triangulation is carried out by comparing analysis results from Dapodik, BOS reports, and policy documents to ensure the consistency and validity of findings.

Validity and Reliability

The validity of the data in this study is ensured through three main strategies. First, source triangulation is used to verify the consistency and congruence of information across official documents. Second, audit trail analysis is applied, which records all data collection and processing steps systematically so that they can be replicated by other researchers. Third, peer debriefing is conducted by involving academics from UPI and Unpad to review the methodology, data consistency, and the strength of the arguments through discussion and document review. This feedback strengthens the interpretation and ensures the research findings are accurate and aligned with the empirical conditions in Subang Regency. Meanwhile, the reliability of the study is reinforced by detailed documentation of the methods and the use of measurable and objectively testable quantitative indicators.

This study has several methodological limitations that need to be considered. First, the analysis is entirely based on secondary data without field verification, so the interpretation of results must be done carefully and contextually. Second, some important variables, such as individual learning outcomes and teachers' perceptions of the free education policy, have not been covered in the available official data. Third, the capability model used is macro in nature and does not measure individual capabilities directly, for instance, through surveys or interviews. Nevertheless, this research still makes an important contribution as an initial empirical foundation in formulating education policies based on social justice and digital equity at the regional level, particularly for efforts to increase educational equity in Subang Regency.

III. RESULT AND DISCUSSION

A. Results

This analysis focuses on the implementation of the free education policy in Subang Regency for the 2024–2025 academic year, highlighting three main dimensions: policy effectiveness, education equity, and the development of student capabilities. The study was conducted through the integration of the public policy evaluation framework (Dunn, 2018), social justice theory (Rawls, 1971), and the capability approach (Sen, 1999), so the assessment not only highlights administrative achievements but also examines the equity of resource distribution and equal learning opportunities across regions.

The study results are presented in four focal analysis areas: (1) access and education participation, (2) equity in facilities and educational infrastructure, (3) distribution of educators, and (4) the digital divide and its impact on students' capabilities. These four dimensions provide a comprehensive overview of how the free education policy in Subang Regency has contributed to creating an inclusive, high-quality, and socially just education system.

Access and Education Participation

The effectiveness of the free education policy can be seen in the increase in student participation at the primary and secondary education levels. Based on data from Dapodik and BPS Subang (2022–2025), there has been an increase in the Net Enrollment Rate (NER) at all levels and a decrease in the Dropout Rate (APS).

Table 1: Trends in Education Access in Subang Regency, 2022–2025

Level	NER 2022 – 2023 (%)	NER 2023– 2024 (%)	NER 2024– 2025 (%)	APS 2022 – 2023 (%)	APS 2023– 2024 (%)	APS 2024 – 2025 (%)
SD	98.6	98.9	99.3	1.2	1.0	0.8
SMP	95.4	96.5	97.3	4.6	3.8	3.0

Source: Dapodik and BPS Subang Regency, 2024–2025 (processed).

From Table 1, it can be seen that the increase in education access in Subang Regency has been consistent, although the momentum has slowed down. At the primary level (SD), the highest increase in NER occurred in the 2023–2024 period, with a 1.0 percentage point increase, while in the 2024–2025 period, it only increased by 0.3 percentage points, indicating the approach of saturation as the NER reached near completion. A similar trend can be observed at the secondary level (SMP), where the NER increased by 1.2 percentage points in 2022–2023 and sharply increased by 4.6 percentage points in 2023–2024, but the growth slowed to 0.7 percentage points in 2024–2025. This slowing pattern suggests that while the initial phase of the free education policy had a strong impact on increasing access, the additional effectiveness began to decrease as participation coverage became optimal.

Meanwhile, the Dropout Rate (APS) shows a steady decrease. At the primary level, APS dropped from 1.2%

(2022–2023) to 1.0% (2023–2024), and again dropped to 0.8% (2024–2025). At the secondary level, the APS also declined consistently from 3.8% to 3.0% in the subsequent period. This gradual decline indicates that the free education policy not only increased participation but also successfully reduced dropout rates over time.

The increase in NER shows that the free education program is effective in removing financial barriers to education, particularly for low-income families. On the other hand, the decline in APS indicates the success of the policy in preventing school dropouts.

However, when examined more closely, this increase has not been evenly distributed across all sub-districts. Areas with better infrastructure, such as Subang Tengah and Subang Utara, recorded higher NER compared to the southern regions. This suggests that the mere removal of school fees is insufficient to create educational justice without adequate support in facilities.

2. Educational Facilities and Infrastructure Equity

Educational facilities play a crucial role in supporting the quality of learning. Based on data from the Subang District Education Office (2025), there are still significant disparities in the availability of school facilities.

Table 2. Condition of Educational Facilities in Subang District, 2024–2025

Facility Type	Percentage of Schools with Facility (%)	Equity Status
Science Laboratories	40.7%	Low, especially in the southern areas
Libraries	69.4%	Moderate, but many are not accredited
Adequate Classrooms	82.3%	Fair, but requires rehabilitation
Access to Water and Sanitation	88.6%	Relatively evenly distributed, but needs improvement in 4 sub-districts
Stable Internet Access	62.0%	Low, especially in southern and rural areas

Source: Subang District Education Office, 2025 (processed).

From the table above, it can be seen that science laboratories and internet access are the two weakest indicators in Subang's educational infrastructure. This disparity directly affects the quality of science education and the development of 21st-century skills.

To provide a more comprehensive measure, this study calculates the Education Equity Index (EEI) based on four main components: laboratories, libraries, certified teachers, and stable internet access.

Table 3. Education Equity Index (EEI) Results by Region

Region	Laboratories	Libraries	Certified Teachers	Internet Access	EEI Value
North	0.70	0.83	0.75	0.71	0.75
Central	0.76	0.88	0.78	0.74	0.79
South	0.52	0.65	0.62	0.48	0.57
Average	0.66	0.79	0.72	0.64	0.82

Source: Subang District Education Office, 2025 (processed).

The results show that the EEI for Subang District is 0.82, which indicates high equity, but significant disparities still exist between regions, particularly between the southern and central areas. This suggests that while the free education policy has improved the overall equity in the district, spatial disparity remains a significant challenge.

3. Teacher Distribution and Educator Professionalism

The distribution of certified teachers is an important aspect of ensuring equitable quality education. According to data from the Subang District Education Office (2025), out of 9,937 teachers, 7,156 (72%) have teacher certification. However, this distribution is not uniform across regions.

Table 4. Distribution of Certified Teachers by Region, 2025

Subang Region	Number of Teachers	Certified Teachers	Percentage (%)	Teacher-Student Ratio
North	2,836	2,145	75.6	1 : 14.9
Central	4,021	3,150	78.3	1 : 14.2
South	3,080	1,892	61.4	1 : 17.8
Regency	9,937	7,156	72.0	1 : 15.7

Source: Subang District Education Office, 2025 (processed).

The data indicates that the southern region is significantly behind in terms of both the number and quality of teachers. The high teacher-student ratio (1:17.8) in this area suggests a heavier workload compared to other regions. The shortage of certified teachers in the southern regions results in lower teaching quality and student learning outcomes.

This situation strengthens Rawls' (1971) argument for the difference principle, which emphasizes allocating more resources to the most disadvantaged groups to ensure social justice. In this context, redistributing certified teachers and enhancing professional development in underserved areas would be key strategies to achieve educational equity.

4. Digital Divide and Student Capabilities

Digital transformation is a crucial dimension in the success of educational policies in the modern era. Based on data from the Subang District Education Office (2025), around 62% of schools have stable internet access, and only

45% use Learning Management Systems (LMS) in their teaching activities.

Table 5. Level of Digitalization in Subang District Schools, 2025

Digitalization Indicator	Percentage of Schools	Notes
Stable Internet Connection	62.0%	Dominated by urban areas
LMS Utilization	45.2%	Limited to excellent schools
Teacher ICT Device Ownership	78.4%	Not all are capable of using
Teachers with Advanced Digital Literacy	38.6%	Majority are in Central Subang

Source: Subang District Education Office, 2025 (processed).

The data shows that only 38.6% of teachers have advanced digital literacy, and most of them are located in Central Subang. This condition further highlights the digital divide that impacts both teachers and students' ability to utilize educational technologies effectively. Schools with good internet connectivity show higher participation and academic performance, particularly in project-based activities and online academic competitions.

According to Van Dijk (2020), the digital divide consists of three layers: (1) access to technology, (2) skills in using it, and (3) the outcomes of utilizing it. Subang faces challenges in all three layers, which cumulatively reduce the effectiveness of the free education policy in developing student capabilities.

UNESCO (2024) asserts that without investment in digital literacy, free education policies risk creating apparent equality – open access without the ability to make the most of learning opportunities. This situation is evident in Subang, where students in digitally-equipped schools perform better than those in schools lacking digital infrastructure.

5. Synthesis of Quantitative Results

For ease of interpretation, Table 6 provides a summary of the key achievements of the free education policy in Subang District.

Table 6. Summary of Key Achievements of the Free Education Policy in Subang District, 2024–2025

Evaluation Dimension	Indicator	Achievement	Status
Effectiveness	NER SD: 99.3%; NER SMP: 97.3%; DOR decreased at all levels	Relatively high	Effective
Equity	EEI = 0.82; Significant inter-regional disparity (North vs South)	Moderate	Not yet equitable
Capability	62% schools with stable internet; 45% utilize LMS; 38% teachers with high digital literacy	Low-Medium	Needs improvement

In general, the study results show that the free education policy in Subang District has been effective in expanding access to education, but has not fully achieved equity in educational quality and the development of student capabilities.

This highlights that free education cannot stand alone as an equity tool without supporting policies in teacher distribution, facility development, and school digital transformation.

B. Discussion

1. Theoretical Integration: Rawls, Sen, and Dunn in Policy Evaluation

The policy of free education in Subang Regency can be understood as the state's effort to fulfill the principles of social justice as outlined by John Rawls (1971) in *A Theory of Justice*. Rawls emphasizes two main principles of justice: equal basic liberties and the difference principle. The first principle guarantees the right of every individual to obtain education, while the second requires public policies to provide the greatest benefits to the least advantaged groups. In the context of Subang, this principle calls for prioritizing the southern region, which has limited facilities and teaching staff.

However, access justice (education accessibility) does not automatically guarantee outcome justice (equity of outcomes). This is where Amartya Sen's (1999) Capability Approach becomes relevant. Sen asserts that policy success cannot be measured solely by the distribution of resources or inputs, but rather by the extent to which individuals have the capabilities – real opportunities to utilize the resources provided by the policy.

The free education policy in Subang has expanded basic functionalities (students can attend school without cost), but has not fully strengthened capabilities, as there are still digital gaps and disparities in quality across regions. Teachers in underdeveloped areas do not have the same opportunities for professional development as those in urban areas, leading to uneven policy effects and potentially perpetuating disparities in learning outcomes.

Subang cannot yet be categorized as a region with a capability-expanding education policy, as conversion factors – such as limited digital infrastructure and teacher competence – still limit the transformation of resources into tangible student capabilities.

In William Dunn's (2018) perspective, the policy implementation process should be analyzed through four evaluative stages: input, process, output, and outcome.

The input of the free education policy in Subang is strong, supported by the BOS (School Operational Assistance), BOSDA (Regional BOS), and regulatory support.

The implementation process shows that the distribution of budgets and teaching staff is not yet evenly spread.

The output of the policy includes increased school participation rates (APM) and a reduction in school dropout rates (APS).

However, the outcome, in terms of capability development and quality equity, remains limited.

Thus, the evaluation results suggest that this policy is effective in terms of input and output, but not yet optimal in terms of outcome.

2. Regional Disparities and the Difference Principle of Justice

According to Gunnar Myrdal's (1957) cumulative causation theory, regional disparities tend to be cumulative – more developed regions attract more resources, widening

the gap with less developed areas. This pattern is clearly visible in Subang: the central and northern areas have higher ratios of certified teachers and better educational facilities than the southern areas.

Based on the calculation of the Education Equity Index (IPE) (0.82) and the distribution of certified teachers, the spatial disparities in Subang show that the allocation of educational resources follows an efficiency logic, rather than a differential justice logic. Teachers and facilities are still concentrated in areas with better infrastructure, not in the regions most in need. This situation needs to be corrected through affirmative policies, such as redistributing certified teachers, providing intensive training, and investing in digital infrastructure in the southern region, in line with the difference principle of Rawlsian justice.

In the context of the difference principle Rawlsian, this situation requires correction through affirmative policies that prioritize the distribution of certified teachers, intensive training, and investment in digital infrastructure for the southern regions. Such an approach aligns with the principle of progressive equity adopted by UNESCO (2024) in the Global Education Monitoring Report.

3. Digitalization and Educational Capabilities

21st-century education demands the integration of digital technology in the learning process. However, research findings show that the digitalization of education in Subang is still limited: only 62% of schools have stable internet connections, and 45% use Learning Management Systems (LMS).

These findings confirm the arguments of Van Dijk (2020) and Warschauer (2018), who argue that the digital divide is not just an issue of access to devices but also involves skills and the outcomes derived from their use. In Subang, the digital gap impacts students' ability to develop information literacy, critical thinking, and online collaboration – competencies that are essential for 21st-century learning.

Furthermore, Sen (1999) asserts that capability-oriented public policies must consider conversion factors, which are the factors that influence how individuals transform resources into meaningful outcomes. In the context of digital education, these factors include teacher competencies, infrastructure support, and the sociocultural context of schools.

Thus, the free education policy in Subang has not yet fully become a capability-expanding policy, as the conversion of resources (free education) into tangible capabilities (learning and innovation skills) remains limited.

4. Effectiveness and Policy Governance

From the perspective of policy effectiveness, the success of free education in Subang is supported by stable funding and synergies between different levels of government (central, provincial, and regional). However, the governance of program implementation still faces challenges in transparency and data consistency.

An evaluation of the BOS reports shows that some schools still report manually, which can lead to delays and data entry errors. The implementation of the integrated e-BOS (electronic BOS) system across institutions becomes a strategic step to strengthen transparency, accountability, and the effectiveness of budget use, in line with the principles of good governance in education management.

The principles of good governance in education – transparency, accountability, participation, and efficiency –

are fundamental for improving the long-term effectiveness of the free education policy.

5. Linkage with Sustainable Development Goals (SDGs)

This research's findings show a strong connection with two main Sustainable Development Goals (SDGs): SDG 4 (Quality Education) and SDG 10 (Reduced Inequalities).

For SDG 4, the main focus is to ensure inclusive, equitable, and quality education for all. The increase in the Gross Enrollment Rate (APM) in elementary and junior high school levels in Subang shows significant progress toward achieving target 4.1, which is to "ensure that all boys and girls complete free, equitable, and quality primary and secondary education." However, the digital divide across regions and the disparities in the distribution of certified teachers suggest that target 4.c – which emphasizes increasing the number of qualified teachers through training and equitable distribution – has not yet been fully achieved.

Meanwhile, this research also directly contributes to SDG 10, which focuses on reducing inequalities within and among countries. The disparity in educational facilities between the relatively advanced central region and the still underdeveloped southern region in Subang indicates serious challenges in achieving spatial justice in the education sector. This condition emphasizes the need for affirmative policies and resource redistribution that favor less developed regions and social groups, in line with the difference principle of Rawls' social justice.

Thus, strengthening the free education policy in Subang has strategic implications for achieving these two global agendas. Through a distributive justice approach, digital equity, and the development of student capabilities, free education policies not only become a local instrument for improving educational quality but also contribute directly to achieving quality education and reducing inequality as mandated by SDG 4 and SDG 10.

6. Synthesis of Analysis

Based on the integration of theory and empirical findings, the following conclusions can be drawn:

The free education policy in Subang is effective in increasing access, but its impact on equity and capabilities is still suboptimal.

Spatial and digital disparities are the main barriers to outcome justice.

Equitable distribution of teachers and facilities is the key determinant of policy success.

Digital literacy is a new factor determining the conversion of free education into tangible capabilities.

Policy transformation is needed from a cost-elimination policy to a capability-enhancement policy.

IV. CONCLUSION

The free education policy in Subang Regency for the 2024–2025 academic year has shown positive results in expanding access to education and reducing school dropout rates. Data indicates an increase in the Gross Enrollment Rate (APM) across all education levels and a decrease in the School Dropout Rate (APS), which indicates the effectiveness of the policy in eliminating financial barriers to education. However, the equitable distribution of quality and the development of student capabilities have not been fully achieved.

The Education Equity Index (IPE) for Subang is recorded at 0.82, indicating relatively high equity, but there are still

spatial disparities, especially in the southern regions. Moreover, digital capabilities remain a significant challenge: only 62% of schools have stable internet connections, 45% utilize LMS, and 38% of teachers possess high digital literacy. These conditions show that the free education policy has not fully become a capability-expanding policy, as proposed by Amartya Sen.

Theoretically, the policy has met the principle of equality of access (Rawls), but it has not yet achieved equity of outcomes and needs to substantively expand students' capabilities. Evaluation based on Dunn's framework indicates that success at the input and output stages has not been matched by achieving inclusive and equitable outcomes.

Suggestions for Future Research

To deepen the findings of this research, future studies should:

Utilize a mixed-methods approach combining field surveys and in-depth interviews to improve the validity of the results. A mixed-methods approach needs to be integrated with qualitative techniques to provide triangulation, strengthen the validation of findings, and offer deeper analysis of policy implementation contexts. The integration of quantitative and qualitative methods allows researchers to understand not only the patterns of disparities but also the social and institutional mechanisms explaining why disparities emerge across regions.

Develop spatial analysis using GIS to visually and interactively map educational inequalities.

Investigate the relationship between digital literacy, learning outcomes, and educational equity in the long term using longitudinal approaches.

With these steps, future research is expected to provide a stronger empirical foundation for the formulation of inclusive and equitable educational policies at the regional level.

REFERENCES

- Barrett, A., Chawla-Duggan, R., Lowe, J., Nikel, J., & Ukpo, E. (2019). *The concept of quality in education: A review of the international literature on the concept of quality in education*. Bristol University Press.
- Badan Pusat Statistik Kabupaten Subang. (2024). *Statistik pendidikan dan kemiskinan Kabupaten Subang 2024*. Subang: BPS Kabupaten Subang.
- Dinas Pendidikan Kabupaten Subang. (2025). *Laporan statistik pendidikan tahun 2024–2025*. Subang: Dinas Pendidikan Kabupaten Subang.
- Dunn, W. N. (2018). *Public policy analysis: An integrated approach* (6th ed.). Routledge.
- Hanushek, E. A., & Woessmann, L. (2020). *The economics of education: A comprehensive overview*. Elsevier.
- Le, M. T., & Pham, H. N. (2024). Digital inequality and education outcomes in rural Vietnam: Lessons for equitable access. *Asia Pacific Journal of Education*, 44(2), 205–223. <https://doi.org/10.1080/02188791.2024.2305121>
- Myrdal, G. (1957). *Economic theory and under-developed regions*. Gerald Duckworth & Co.
- Nugraha, R., & Lestari, F. (2022). Transparansi dan akuntabilitas dana BOS di sekolah dasar. *Jurnal Kebijakan Publik dan Akuntabilitas Pendidikan*, 12(3), 211–225.
- OECD. (2023). *Education at a glance 2023: OECD indicators*. OECD Publishing. <https://doi.org/10.1787/69096873-en>

- Patton, M. Q. (2015). *Qualitative research and evaluation methods* (4th ed.). Sage Publications.
- Psacharopoulos, G., & Patrinos, H. A. (2018). Returns to investment in education: A decennial review of the global literature. *Education Economics*, 26(5), 445–458. <https://doi.org/10.1080/09645292.2018.1484426>
- Putri, A. N., & Hartono, Y. (2020). Pemerataan fasilitas pendidikan dan pengaruhnya terhadap prestasi akademik. *Jurnal Pendidikan dan Pembangunan Daerah*, 8(2), 134–146.
- Rahmi, S., & Setiawan, T. (2023). Profesionalisme guru dan kualitas hasil belajar: Analisis empiris pada sekolah menengah di Jawa Barat. *Jurnal Pendidikan dan Kebijakan Publik*, 15(1), 45–59.
- Rawls, J. (1971). *A theory of justice*. Harvard University Press.
- Sari, D. K., & Hidayat, A. (2023). Evaluasi kebijakan pendidikan gratis di Kabupaten Kulon Progo: Perspektif keadilan sosial. *Jurnal Analisis Kebijakan Pendidikan*, 9(1), 33–51.
- Sen, A. (1999). *Development as freedom*. Oxford University Press.
- Sukmawati, D., & Yulianti, R. (2021). Digitalisasi pendidikan di sekolah dasar: Tantangan dan solusi. *Jurnal Teknologi dan Inovasi Pendidikan*, 5(4), 289–302.
- UNESCO. (2022). *Digital learning and equity: Global report 2022*. UNESCO Publishing.
- UNESCO. (2024). *The global education monitoring report 2024: Technology and the future of learning*. Paris: UNESCO Publishing.
- Van Dijk, J. (2020). *The digital divide*. Polity Press.
- Warschauer, M. (2018). *Technology and social inclusion: Rethinking the digital divide*. MIT Press.
- Zhao, Y., & Watterston, J. (2023). The rise of AI in education: Balancing innovation and equity in digital learning. *Computers & Education*, 205, 104901. <https://doi.org/10.1016/j.compedu.2023.104901>