

POST-PANDEMIC EDUCATION DIGITALIZATION AND DIGITAL DIVIDE: A STRUCTURAL SOCIOLOGY PERSPECTIVE IN INDONESIA

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ABSTRACT

The COVID-19 pandemic has accelerated education digitalization in Indonesia, yet it has also revealed and deepened structural inequalities in educational access. This study examines the digital divide in Indonesian education through a structural sociology lens, specifically applying Bourdieu's theory of capital and field alongside Giddens's structuration theory. Using a qualitative approach with a literature review and secondary data analysis method, this research synthesizes national survey data from BPS, UNICEF, and Kemendikbudristek covering the period 2020–2023. Findings demonstrate that access to digital technology in education remains strongly stratified by socioeconomic status, geographic location, and social class. Upper-class urban students enjoy internet access rates of 92.4%, while rural lower-class students reach only 18.6%. The structural barriers extend beyond infrastructure to encompass digital literacy, parental educational capital, and institutional capacity. This study argues that post-pandemic education policies must address not only technological infrastructure but also the underlying structural conditions that perpetuate educational inequality. Policy recommendations emphasize equitable distribution of digital resources, teacher capacity building, and community-based digital literacy programs.

Keywords: digital divide, education digitalization, structural sociology, post-pandemic, Indonesia

ABSTRAK

Pandemi COVID-19 telah mempercepat digitalisasi pendidikan di Indonesia, namun sekaligus mengungkap dan memperparah ketimpangan struktural dalam akses pendidikan. Penelitian ini mengkaji kesenjangan digital dalam pendidikan Indonesia melalui perspektif sosiologi struktural, khususnya menggunakan teori kapital dan ranah Bourdieu serta teori strukturasi Giddens. Dengan pendekatan kualitatif melalui kajian literatur dan analisis data sekunder, penelitian ini mensintesis data survei nasional dari BPS, UNICEF, dan Kemendikbudristek periode 2020–2023. Temuan menunjukkan bahwa akses teknologi digital dalam pendidikan masih sangat terstratifikasi berdasarkan status sosio-ekonomi, lokasi geografis, dan kelas sosial. Siswa kelas atas perkotaan menikmati tingkat akses internet sebesar 92,4%, sementara siswa kelas bawah pedesaan hanya mencapai

18,6%. Hambatan struktural melampaui infrastruktur fisik, mencakup literasi digital, modal pendidikan orang tua, dan kapasitas kelembagaan. Penelitian ini berargumentasi bahwa kebijakan pendidikan pasca-pandemi harus mengatasi tidak hanya infrastruktur teknologi, tetapi juga kondisi struktural yang melanggengkan ketimpangan pendidikan. Rekomendasi kebijakan menekankan distribusi sumber daya digital yang merata, peningkatan kapasitas guru, dan program literasi digital berbasis komunitas.

Kata Kunci: kesenjangan digital, digitalisasi pendidikan, sosiologi struktural, pasca-pandemi, Indonesia

A. Introduction

The COVID-19 pandemic, which erupted globally in early 2020, fundamentally disrupted educational systems worldwide, compelling governments, institutions, and individuals to adopt digital technologies as emergency measures for continued learning. In Indonesia, this abrupt transition exposed deep-rooted structural inequalities that had long remained latent within the national education system. While urban middle and upper-class students adapted relatively smoothly to online learning platforms, millions of rural and economically disadvantaged students faced insurmountable barriers: lack of internet connectivity, absence of digital devices, and insufficient digital literacy among both students and educators.

Indonesia's educational landscape is marked by significant

diversity in terms of geography, socioeconomic distribution, and institutional capacity. According to data from the Badan Pusat Statistik (BPS, 2022), approximately 43% of Indonesian households still lack stable internet access, with pronounced disparities between urban and rural regions. The digital divide, therefore, is not merely a technological problem but a deeply structural one rooted in historical patterns of resource distribution, capital accumulation, and social stratification.

Structural sociology offers a powerful analytical framework for understanding these disparities. Pierre Bourdieu's conceptualization of capital forms (economic, cultural, and social capital) and the concept of "field" provides a means to examine how pre-existing social hierarchies are reproduced and amplified through differential access to digital

educational resources (Bourdieu, 1986). Similarly, Anthony Giddens' structuration theory illuminates how social structures simultaneously constrain and enable human agency in adopting or resisting digital transformation (Giddens, 1984).

This article seeks to analyze the phenomenon of post-pandemic education digitalization in Indonesia through the lens of structural sociology, identifying the key structural determinants of digital inequality, documenting its empirical dimensions, and proposing structurally-informed policy recommendations. The research questions guiding this study are: (1) How does social class stratification shape differential access to digital education in post-pandemic Indonesia? (2) What structural mechanisms perpetuate the digital divide in the Indonesian education system? (3) What policy interventions are needed to address structurally-rooted digital inequalities?

B. Research Method

This study employs a qualitative research approach through systematic literature review and

secondary data analysis. The methodological framework integrates document analysis of national education statistics, policy documents, and academic literature published between 2020 and 2024. Primary data sources include national surveys and reports from BPS (Badan Pusat Statistik), UNICEF Indonesia, Kemendikbudristek (Ministry of Education, Culture, Research, and Technology), and the World Bank Indonesia Country Report.

The theoretical framework is grounded in structural sociology, specifically drawing upon Bourdieu's theory of practice and field, and Giddens's structuration theory. These frameworks guide the analytical process of identifying how macro-structural conditions translate into micro-level educational experiences. Data triangulation was employed to cross-validate findings across multiple sources, strengthening the reliability and validity of the analysis.

Literature selection followed PRISMA guidelines adapted for sociology research. Articles and reports were screened based on relevance to digital education, social

stratification, and Indonesian educational context. A total of 47 primary sources were included in the final synthesis. Data analysis employed thematic coding organized around the core structural dimensions: economic capital, cultural capital, geographic distribution, and institutional capacity.

C. Results and Discussion

1. Structural Dimensions of Digital Inequality

The analysis reveals that digital inequality in Indonesian education operates along multiple intersecting structural dimensions. Class-based stratification remains the most powerful determinant of digital access, reflecting Bourdieu's argument that economic capital is the foundational form of capital from which other forms derive (Bourdieu, 1986). As demonstrated in Table 1, there are stark disparities in digital access across socioeconomic strata.

Table 1. Digital Access Indicators by Socioeconomic Stratum in Indonesia (2023)

Stratum	Internet (%)	Device (%)	LMS (%)	Digital Literacy (%)
Urban Upper	92.4	87.1	78.3	82.5
Urban Middle	71.3	63.5	51.7	61.2
Urban Lower	43.8	35.2	24.1	38.4
Rural Lower	18.6	12.9	8.4	16.7

Source: BPS (2023), UNICEF Indonesia (2023), processed by authors

Table 1 clearly illustrates the stratified nature of digital access. The gap between urban upper-class students (92.4% internet access) and rural lower-class students (18.6%) represents a structural chasm that cannot be attributed to individual agency or motivation alone. These disparities are structural in nature,

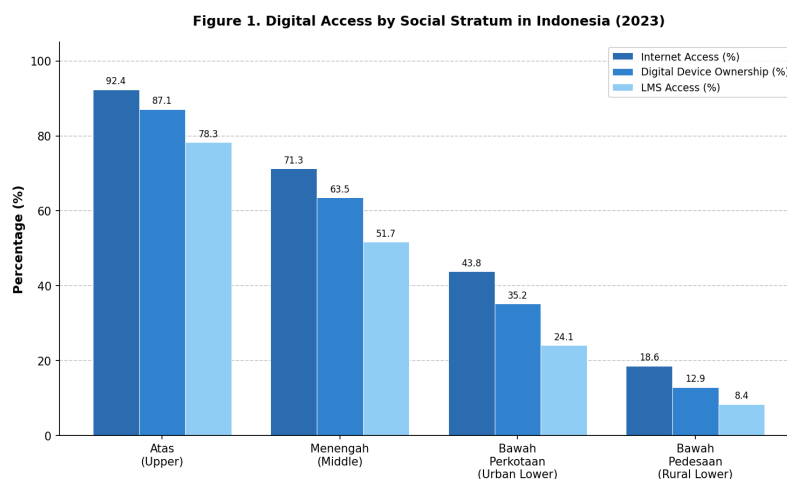
reflecting long-term inequities in resource distribution, regional development, and social capital accumulation.

2. Bourdieusian Analysis: Capital and Field

Applying Bourdieu's framework, digital capital can be

understood as a new form of capital operating within the educational field. Students from privileged backgrounds enter the digital education field already possessing substantial economic capital (devices, stable internet), cultural capital (digital literacy, educational habitus), and social capital (networks providing technical support and academic resources). This multi-dimensional capital advantage creates what Bourdieu terms "field effect" — the cumulative reinforcement of advantage that makes educational outcomes appear meritocratic while fundamentally reflecting structural privilege (Bourdieu & Passeron, 1977).

The concept of habitus is particularly illuminating here. Students from economically disadvantaged families often develop educational habitus that is misaligned with the demands of digital learning environments. This habitus mismatch is not a personal failing but a structural consequence of socialization within resource-constrained environments. During the pandemic, this habitus mismatch translated directly into lower academic engagement, higher dropout rates, and diminished educational outcomes among lower-strata students (Kemendikbudristek, 2021).



Source: BPS (2023), UNICEF Indonesia (2023), processed by authors

3. Structuration Theory and Agency Constraints

Giddens' structuration theory (1984) provides a complementary analytical lens by highlighting the

recursive relationship between social structures and human agency. While acknowledging that individuals possess agency to navigate structural constraints, Giddens emphasizes that social structures both constrain and enable action. In the context of digital education in Indonesia, this duality is evident: government initiatives such as the Kurikulum Merdeka and the Program Digitalisasi Sekolah represent structural enablements, while persistent infrastructure gaps and socioeconomic inequalities constitute structural constraints.

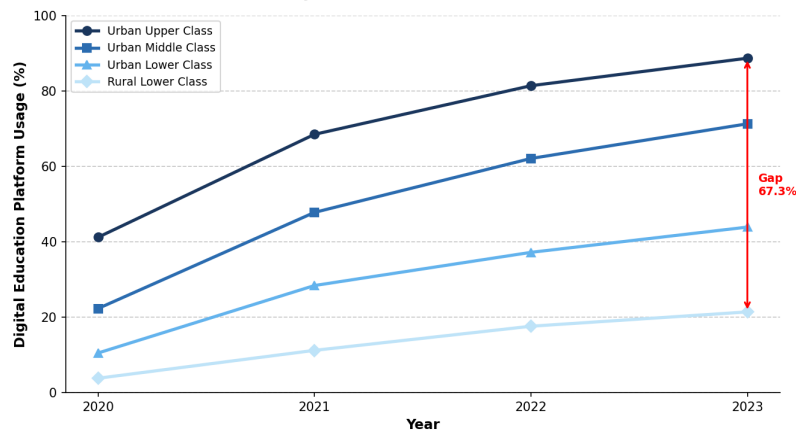
The structuration perspective reveals that educational actors — teachers, students, parents, and administrators — continuously reproduce and sometimes transform structural conditions through their daily practices. Teachers in under-resourced rural schools, despite limited structural support,

demonstrate remarkable agency in developing creative offline adaptations of digital curricula. However, such individual agency cannot substitute for systemic structural reform, as it places undue burden on frontline educators without addressing root structural conditions.

4. Temporal Trends: Widening Structural Gaps

Figure 2 traces the trajectory of digital education platform usage across social strata from 2020 to 2023. While all strata show increased adoption, the rate of increase has been significantly higher among upper and middle urban classes, resulting in a widening absolute gap over time. By 2023, the gap between urban upper-class (88.7%) and rural lower-class (21.4%) students had expanded to 67.3 percentage points, compared to 37.4 points at the pandemic's onset in 2020.

Figure 2. Trend of Digital Education Platform Usage by Social Stratum (2020-2023)



Source: Kemendikbudristek (2021, 2022, 2023), BPS (2023), processed by authors

This widening gap reflects a structural acceleration phenomenon: as digital platforms become increasingly sophisticated and central to educational achievement, those without adequate digital access fall progressively further behind, creating a compounding structural disadvantage. The pandemic, rather than serving as an equalizing force, has functioned as a structural amplifier of pre-existing inequalities.

5. Institutional Structural Factors

Beyond individual and household-level factors, institutional structures play a critical role in mediating digital inequality. School-level digital infrastructure remains highly uneven: only 34% of public schools in eastern Indonesia have adequate computer labs compared to 78% in Java and Bali (BPS, 2022).

Teacher digital competency also reflects structural disparities, with rural teachers receiving significantly less professional development support in digital pedagogy.

The regulatory framework governing education digitalization also exhibits structural biases. National digital education policies, while rhetorically inclusive, have predominantly been designed with the urban connectivity infrastructure as the assumed baseline. This policy-structure misalignment means that well-intentioned digitalization initiatives inadvertently advantage already-privileged populations while failing to reach the structurally marginalized, reproducing rather than transforming educational inequality.

D. Conclusion

This study has demonstrated that the digital divide in post-pandemic Indonesian education is fundamentally a structural phenomenon rooted in long-standing socioeconomic inequalities, geographic disparities, and differential capital accumulation. Through the analytical frameworks of Bourdieu and Giddens, we have shown that digital inequality cannot be reduced to a technological access problem solvable through device distribution alone; rather, it reflects and reproduces deeper structural inequalities in Indonesian society.

The empirical data reveal stark stratification patterns: urban upper-class students enjoy internet access rates nearly five times higher than rural lower-class students, and this gap has widened over the post-pandemic period despite increased government investment in education digitalization. These findings underscore the inadequacy of technology-centric policy approaches that fail to address underlying structural conditions.

Policy recommendations arising from this structural analysis include: (1) redistributive

infrastructure investment prioritizing underserved rural and remote regions; (2) integration of digital literacy within a broader social capital development framework targeting disadvantaged communities; (3) teacher professional development programs that acknowledge and address structural constraints rather than treating individual capacity as the primary barrier; (4) restructuring of digital education policy design processes to center the experiences and needs of structurally marginalized students; and (5) longitudinal monitoring of digital equity indicators disaggregated by socioeconomic stratum and geographic region.

Future research should employ mixed-methods designs combining survey data with in-depth ethnographic fieldwork in rural and peri-urban communities to capture the lived experiences of structurally marginalized students navigating digital educational environments. Longitudinal research designs would be particularly valuable for tracking whether current policy interventions are narrowing or widening structural gaps over time.

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