

Digitalization and Social Inequality in Japanese Education

Akihito Fujiwara^{1*}, Ravik Karsidi²

¹Sebelas Maret University, Surakarta, Central Java

²Sebelas Maret University, Surakarta, Central Java

*akihito.0408@student.uns.ac.id

Abstract

This article critically analyzes the digital transformation of education in Japan through the lens of educational sociology. Using literature-based qualitative analysis, the study focuses on the GIGA School Program as a national policy intended to enhance equity through digital infrastructure. Despite universal device distribution and high-speed internet development, the study reveals significant disparities in implementation, especially concerning teacher readiness, household digital literacy, and regional differences. The findings indicate that digital education tends to reinforce social stratification through unequal access to cultural capital, which is consistent with Bourdieu's theory of symbolic violence. Moreover, the growing influence of EdTech companies has led to the marketization of learning, shifting students into passive consumers of standardized content. This phenomenon also erodes the humanistic and dialogical dimensions of education emphasized by thinkers such as Freire and Durkheim. The article concludes that technological reform must be grounded in social equity and educational philosophy to ensure just and meaningful learning. Recommendations include reforming teacher training, strengthening local educational support, and safeguarding education from commercial domination.

Keywords : digital education, cultural capital, educational inequality, symbolic violence, EdTech

Background

In recent years, Japan has accelerated its digital transformation in education, especially with the launch of the GIGA School Program by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) in 2019. This policy aimed to provide every elementary and junior high school student with one digital device and to build high-speed internet infrastructure in all schools. The initiative was developed in alignment with Society 5.0, a national vision that integrates advanced technologies like AI and IoT to address both economic development and social challenges. In the context of education, this shift was expected to enable personalized and collaborative learning models while preparing students for a digitalized future (Ogi, 2022).

However, recent studies have shown that such top-down digital initiatives have not equally benefited all learners. The digitalization of education has exposed and, in many cases, widened existing social disparities related to regional infrastructure, teacher readiness, and the home learning environment (Fujita, 2018; Fujimoto, 2023). While schools may receive equal distributions of hardware, the effective use of such technology is deeply shaped by families' economic resources, cultural capital, and parental involvement.

This article adopts a sociological perspective to examine how educational digitalization in Japan intersects with social inequality. Drawing on the theories of Émile Durkheim, Pierre Bourdieu, and Paulo Freire, the article critically analyzes how digital access, symbolic structures, and market logic influence learning outcomes. Durkheim emphasized education's role in forming social solidarity, while Bourdieu's notion of cultural capital and symbolic violence reveals how systems reproduce hidden inequality. Freire's critique of education as a tool for social transformation reminds us that education must go beyond content delivery and foster critical consciousness.

The purpose of this article is to analyze the contradictions within Japan's digital education policies by investigating the mismatch between policy goals and classroom realities. It also aims to reveal how digital schooling risks depersonalizing learning while reinforcing social stratification if implemented without attention to pedagogical and social equity..

Research Method

This research employs a **qualitative-descriptive design** using **library research** as the primary methodology. This method is suitable for critically examining social phenomena related to educational policies without direct field data. As stated by Creswell (2013), qualitative research focuses on exploring meaning, understanding lived experiences, and interpreting social structures, which aligns with this study's aim to analyze Japan's digital education reform through a sociological lens.

The research was conducted in several stages. First, the researcher identified relevant literature through purposive sampling, selecting sources based on thematic relevance, publication credibility, and sociological insight. The main sources include peer-reviewed academic journal articles, government policy documents, and theoretical works from prominent education scholars such as Pierre Bourdieu, Émile Durkheim, and Paulo Freire.

Second, the procedure involved **organizing and categorizing literature** into major analytical themes, including (1) digital access and infrastructure, (2) family background and cultural capital, (3) educational marketization, and (4) humanistic values in education. This thematic organization facilitated a structured understanding of the impact of digital transformation in education.

For data analysis, the study adopted **thematic content analysis** (Vaismoradi, Turunen, & Bondas, 2013), allowing the researcher to interpret complex social patterns embedded in textual data. This process involved coding texts, identifying repeated concepts, and mapping them to sociological theories. Bourdieu's concept of **symbolic violence**, Durkheim's view on **education as social integration**, and Freire's **critical pedagogy** were used as analytical frameworks.

Since the study does not involve empirical data collection, **triangulation** was ensured through the cross-validation of multiple high-quality sources and contrasting theoretical viewpoints. The results are not intended to be generalized statistically but are aimed at providing a deep, contextual understanding of the structural dynamics within Japan's digital education reform.

This method enables a critical reconstruction of how digitalization policies, though technically equal in distribution, are unequally experienced due to social, cultural, and economic disparities.

Result and Discussion

Results and Discussion

The first major finding from this study reveals a significant gap between the intentions of national digital policy and the reality of its implementation across educational institutions. While the GIGA School Program initiated by the Japanese government promised a uniform "one device per student" provision alongside high-speed internet connectivity in all public schools, actual outcomes vary drastically depending on the local context (MEXT, 2019). Reports and literature highlight an uneven landscape: schools in urban centers such as Tokyo or Osaka benefit from established ICT infrastructure, trained support staff, and advanced EdTech applications, whereas rural and remote schools face limited connectivity, hardware malfunction, and a lack of technical personnel (Fujita, 2018).

This disparity extends beyond physical infrastructure to the human dimension of education. Many teachers, particularly in under-resourced districts, remain hesitant or untrained in the effective use of educational technology. While some educators embrace digital tools to facilitate collaborative and student-centered learning, others merely use devices to display static materials, thus reproducing traditional teaching methods through new media (Higuchi, Takahashi, & Takagi, 2024). This uneven adoption reveals a deeper issue related to institutional readiness and pedagogical vision.

From a sociological perspective, the situation can be analyzed using the concept of institutional habitus. Schools with a history of innovation and strong support structures—often in wealthier municipalities—are more likely to leverage digital tools meaningfully. Conversely, schools operating in more constrained environments are inclined

to treat technology as an add-on rather than an integrated part of instruction. This pattern aligns with Bourdieu's theory of symbolic violence, which argues that social inequalities are often hidden beneath a surface of formal equality (Bourdieu & Passeron, 1991). The distribution of devices appears equal, but the outcomes reflect deeply embedded structural differences.

Moreover, this issue is compounded by the decentralized nature of Japanese education governance. Local boards of education hold significant autonomy in interpreting and implementing national directives. Some municipalities have gone beyond the national mandate by introducing AI-based learning platforms and establishing regular training sessions for teachers. Others have met only the minimum requirement, lacking the administrative and financial capacity to expand their programs. This leads to inconsistent educational experiences across the country, undermining the broader goal of equity.

The gap between digital policy and educational reality thus reflects a broader contradiction. While the state may standardize infrastructure inputs, it cannot guarantee standardized learning outcomes without addressing underlying disparities in institutional support, community engagement, and pedagogical innovation. These findings suggest that technological reform in education cannot succeed through hardware provision alone. A sociologically informed strategy must include sustained investment in teacher capacity, localized support systems, and continuous policy evaluation to ensure that digitalization leads to meaningful and equitable learning.

Another important finding from this study concerns how digital education policies, despite their surface-level equality, often reproduce underlying social inequality through mechanisms of cultural capital. While the Japanese government's approach to digitalization provides each student with identical hardware and software access, the actual ability to benefit from these tools varies significantly based on family background, parental involvement, and community support systems. These differences align closely with Pierre Bourdieu's theory of cultural capital, which posits that educational success is not determined solely by individual ability or opportunity, but by the inherited cultural resources and dispositions that students bring with them into the classroom (Bourdieu, 1986).

In high-income households, children typically enjoy quiet and resource-rich environments where learning is actively supported by digitally literate parents. These families often possess multiple devices, stable internet connections, and schedules that allow parental supervision or encouragement. In contrast, children from lower-income backgrounds often share a single device among siblings, rely on unstable Wi-Fi, and receive little or no assistance from parents who may be overworked, digitally inexperienced, or absent during study hours (Fujita, 2018; Fujimoto, 2023). Such material and symbolic discrepancies generate a form of "invisible inequality," wherein students appear to start from the same point, but in fact experience vastly different levels of support.

These disparities are further deepened by variations in parental expectations, communication styles, and values toward education. Bourdieu describes these factors as "embodied cultural capital"—the internalized dispositions that shape how students perceive learning, authority, and aspiration (Bourdieu & Passeron, 1991). Parents with university experience or strong educational values are more likely to engage in discussions with their children about schoolwork, encourage digital literacy, and facilitate independent exploration through online resources. Such practices not only enhance academic performance but also prepare students to navigate the norms and expectations of the formal education system.

Importantly, these patterns of inequality are not always recognized within official evaluations. Schools may record identical participation rates in digital learning platforms or software usage logs, but these figures obscure the qualitative differences in how technology is being used. For example, a student who passively completes assignments online without guidance is not benefiting in the same way as a student who receives critical feedback, assistance in time management, or help interpreting digital content. The uniformity of technological access thus conceals a divergence in educational experience that reflects what Bourdieu calls symbolic violence—the imposition of dominant cultural norms that appear neutral but systematically disadvantage those who lack the associated background.

Additionally, regional educational systems contribute to this divergence. In some urban districts, boards of education supplement digital initiatives with human resources such as learning advisors or ICT tutors, offering personalized assistance to families in need. In more remote or underfunded districts, such support is often

unavailable, leaving schools and students to manage complex technological transitions without external help (Higuchi et al., 2024). These regional disparities mirror the broader stratification of educational opportunity in Japan and challenge the notion that digitalization alone can equalize outcomes.

Ultimately, while digital education promises universality, it often reinforces pre-existing inequalities unless accompanied by comprehensive socio-pedagogical strategies. Policies must go beyond device distribution to address the social preconditions of learning. This includes parental ICT literacy programs, community-based support structures, and culturally responsive pedagogy that acknowledges and bridges differences in students' backgrounds. Without such measures, digital learning remains a site of symbolic reproduction rather than social transformation.

An additional dimension uncovered in this study is the increasing marketization of education in Japan, particularly as digital learning becomes entangled with private-sector technologies. While the GIGA School Program was originally framed as a public initiative to improve access and equity, its implementation has, in practice, opened the door to significant involvement by EdTech corporations. These companies provide not only the hardware and software used in classrooms but also shape the content, assessments, and user interfaces that define students' digital learning experiences (Nakamura, 2017). This transformation signals a shift in education from a public good to a consumer-oriented service.

One of the most significant consequences of this shift is the reconfiguration of the student's role. Increasingly, learners are positioned not as active subjects of inquiry, but as users of platforms and consumers of pre-packaged educational content. These platforms often emphasize efficiency, gamified rewards, and performance metrics, reducing learning to a process of meeting algorithm-driven benchmarks. As a result, pedagogical goals such as critical thinking, ethical reflection, and collaborative problem-solving become secondary to the demands of systematized performance (Ogi, 2022). This trend reflects a neoliberal logic that values quantifiable outputs over the more intangible goals of holistic education.

From a sociological standpoint, this phenomenon can be interpreted through Paulo Freire's concept of the "banking model" of education, where knowledge is deposited into passive students by authoritative systems. In digital environments dominated by commercial platforms, this model is reinforced by the one-way transmission of information and the minimization of dialogical engagement. Freire argues that such pedagogies deny learners the opportunity to become co-creators of knowledge and instead perpetuate hierarchies of control (Freire, 1970). In this context, the market-driven digitalization of education undermines the emancipatory potential of learning.

Further complicating this dynamic is the growing reliance on student data as a commodity. Many EdTech platforms operate on business models that collect and analyze user data to improve "personalized learning," but often without transparent oversight or pedagogical justification. The educational process becomes inseparable from mechanisms of surveillance and consumer profiling. These practices raise ethical concerns about privacy, consent, and the commodification of the learner. Students are no longer just participants in education—they are data-producing subjects embedded in a feedback loop that serves institutional and commercial interests more than their own development.

Teachers, too, are affected by this trend. As instructional design becomes standardized across platforms, educators find their roles increasingly constrained by pre-set lesson structures, automated assessments, and institutional mandates to use specific tools. This deskilling of teaching undermines professional autonomy and further aligns the school system with corporate logics. Bourdieu would argue that such shifts reflect a redefinition of the educational field, where market capital begins to supplant cultural capital as the dominant form of authority (Bourdieu, 1990).

The commercialization of digital education thus represents not just a change in tools, but a transformation in the very meaning of schooling. When educational spaces are shaped by market values, the risk is that learning becomes shallow, instrumental, and devoid of critical engagement. For digital education to serve its democratic and humanistic purposes, it must resist the commodification of knowledge and reaffirm its commitment to the ethical and social development of students.

A critical yet often overlooked consequence of digital education reform is the erosion of humanistic and reflective values that have traditionally underpinned the purpose of schooling. While policy discourses surrounding initiatives like the GIGA School Program emphasize innovation, efficiency, and future-readiness, they frequently neglect the more subtle dimensions of education—such as moral development, social empathy, and critical consciousness. These values, as emphasized by classic educational theorists like Émile Durkheim and Paulo Freire, are essential for cultivating responsible citizens and cohesive societies.

Durkheim viewed education not merely as a mechanism for skill acquisition, but as a moral enterprise aimed at instilling shared values and social solidarity. In his framework, schools serve as a microcosm of society, where children learn to internalize norms, cooperate with others, and build ethical character (Durkheim, 1956). However, in digitalized classrooms increasingly governed by screens, data dashboards, and algorithmic assessments, opportunities for moral education are diminished. Social interaction is often replaced by individual tasks completed in isolation, and collective activities are constrained by digital interfaces that prioritize task completion over relationship-building.

This shift is particularly evident in how digital education redefines the nature of interaction between students and teachers. Technology mediates the learning process, reducing direct dialogue and replacing it with pre-scripted modules, standardized feedback, and automated communication tools. The dialogical relationship—central to Freire’s vision of education as a practice of freedom—is thereby compromised (Freire, 1970). Freire argues that genuine education must involve mutual respect, critical reflection, and shared inquiry. When technology dominates, especially under market pressures for measurable outcomes, these humanistic dimensions of education are marginalized.

Moreover, students are increasingly socialized into systems that value efficiency and output above curiosity and introspection. Many digital platforms reward speed, task completion, and immediate correctness rather than the slow, reflective processes through which deeper understanding and ethical reasoning are cultivated. This has implications for how students see themselves—not as thinkers or citizens, but as performers in a data-driven economy. The emotional and existential aspects of learning, which involve struggling with complexity, confronting difference, and negotiating identity, are often excluded from digital pedagogies.

The erosion of these humanistic qualities also affects how schools define success. Instead of focusing on holistic development, educational success becomes equated with quantifiable indicators such as platform engagement, completion rates, and assessment scores. As a result, schools risk becoming efficiency-oriented institutions that mirror corporate environments more than spaces of personal growth. In this transformation, the fundamental question of what it means to be educated is sidelined in favor of what it means to be efficient.

Furthermore, this value erosion disproportionately affects students who may already feel disconnected from mainstream academic expectations. Those who thrive in dialogical, relational, and value-based learning environments may find digital education alienating and depersonalized. This not only impacts academic outcomes but also contributes to a sense of exclusion and dehumanization.

To resist this trend, educators and policymakers must reassert the moral and social purpose of education in the digital age. Technology should be employed as a means to support, not replace, human connection. Digital tools must be designed and implemented in ways that enhance dialogue, encourage ethical engagement, and respect the developmental needs of students as whole persons. If this does not occur, the very soul of education risks being lost in the drive for modernization.

Conclusion and Suggestion

The findings of this study reveal that while Japan’s GIGA School Program has successfully expanded digital infrastructure and device access across schools, it has simultaneously reproduced and intensified existing educational inequalities through disparities in institutional readiness, cultural capital, and regional implementation. Although students are now uniformly equipped with digital devices, their capacity to benefit from these tools is shaped by family socioeconomic status, parental digital literacy, and local educational policy. Furthermore, the increasing marketization of educational technologies has led to the commodification of learners and the marginalization of pedagogical practices grounded in dialogue, ethics, and reflective learning. In this context, digital

reform risks displacing the humanistic purposes of education in favor of efficiency and standardization. To address these challenges, policymakers must adopt a holistic approach that integrates technological infrastructure with equitable socio-pedagogical support, including teacher training, parental engagement, and localized implementation strategies. Schools should be encouraged to use digital tools to foster critical thinking and ethical development, not merely to deliver standardized content. Finally, educational reforms should be grounded in democratic and inclusive principles that recognize and respond to the diverse cultural and social realities of students, thereby ensuring that digital education promotes social justice rather than exacerbating inequality.

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