Chapter 5
Covid-19 and Education on the Front Lines in Japan: What Caused Learning Disparities and How Did the Government and Schools Take Initiative?

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Abstract While the COVID-19 pandemic posed unprecedented challenges to the education system of Japan, the government and schools took necessary measures to combat the outbreak and ensure student learning continued. The temporary school closure, following the state of emergency, continued for 2 months, from April through May of 2020. Even after the declaration was lifted in May 2020, schools adopted the new-normal way of operations. By shortening the summer break and holding alternative classes, elementary, junior, and senior high schools, except for universities, returned to normal while the COVID-19 pandemic was settling down, and ended the semester regularly in December 2020. The temporary closure, however, led to a huge disparity in implementing online classes, depending on availability of personal laptops in schools. Many private schools, and a substantial number of public schools established by innovative local governments, such as Saga Prefecture and Shibuya Ward, were successful in transitioning to online learning. However, most public schools were unable to hold online courses due to the lack of facilities both in schools and at student households. Aware of the disparities, the government brought forward a policy initiative to distribute personal PCs to all elementary and junior high school students, and to supply high-speed IT networks to each school, with an expected completion of March 2021. In this chapter, we will explore various disparities in depth, particularly underlining the relationship between ICT environments in schools and the issue of school founders. Additionally, we provide an overview

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on how the government and schools coped with the crisis, capitalized on the policy initiatives, and utilized available resources. As a concluding remark, we aim to leave room for optimism by taking this pandemic as an opportunity to reconsider and reimagine education. *Note*: This chapter has nothing to do with operations of organizations that respective authors belong to, and the views expressed in this chapter do not represent organizations', but are authors' own.

5.1   Introduction

In the past decade, Japan has experienced a series of catastrophes, among which the Tōhoku earthquake and tsunami in 2011 still remain a vivid part of the country's memory. Despite a number of natural disasters, the government and people have nevertheless been coping well and fighting back against the difficulties. Despite these experiences, however, the COVID-19 pandemic posed formidable challenges across the nation's healthcare, economy, politics, and above all, education system. In this chapter, we aim to describe how Japan dealt with this unprecedented crisis, and particularly aim to portray the response of the government and of schools to the pandemic.

    In the first section, we overview the timeline of the COVID-19 pandemic. What marked the case of Japan was that the school closure happened only once and continued for a relatively short period. Even so, the impact of the closure caused immense damage to student learning opportunities. In the second section, we unpack the mechanism of how disparity was produced along different lines in Japan's education system. While presenting the detailed overview of the disparities, however, we also portray the Ministry of Education, Culture, Sports, Science and Technology's policy initiatives and various supportive measures aimed at closing learning gaps. While this crisis had detrimental effects, particularly on vulnerable populations, such as single parents, it is important not to overlook the positive sides of the pandemic and take this event as an opportunity to rethink education. In the concluding section, we will present implications for future policymaking.

5.2   The COVID-19 Pandemic and Japan's Response

We will first overview the government and school responses to the COVID-19 pandemic. In the case of Japan, the Ministry of Education, Culture, Sports, Science and Technology (hereafter, MEXT) promptly provided policies and guidelines on how to deal with the pandemic, which schools followed in a rather uniform way. On January 28, 2020, the government of Japan classified COVID-19 as a designated infectious disease, which require specific medical treatments, epidemiological investigation, and outbreak control. In the beginning of February, the government faced the outbreak within a foreign cruise ship at the port in Japan and dealt with

the immigration procedures for those infected with COVID-19. Although the MEXT expressed reluctance at the beginning, starting on March 2, elementary, junior high, and senior high schools across the nation closed in a coordinated way due to the request of then-Prime Minister Abe. However, the impact of this school closure was relatively small because it coincided with spring break. Facing the spread of the infection and continuing school closures, on March 31 the MEXT announced the acceleration of the Global and Innovation Gateway for All (hereinafter, GIGA) School Initiative, to complete the distribution of PC/Tablet devices to all elementary and junior high school students by March 2021. The original timeline of the initiative was to distribute within 4 years, starting from the fiscal year 2020.

On April 7, at the very beginning of the school year, a state of emergency was declared in 7 prefectures (out of 47 in total) covering mostly urban cities (including Tokyo). While schools continued to be closed in those prefectures, the state of emergency was extended across the nation on April 16, and thus most schools went into a temporary closure. The school closure, despite being temporary, led to a huge disparity in student learning between schools. For example, some public schools had been implementing online education since before the pandemic, and some private schools were able to set up online education immediately after the temporary closure. These schools were able to deliver online classes on the premise of one device per student. On the other hand, most of the public elementary and junior high schools, without online education in place, had to distribute learning materials by sending in hard copies to students at home, resulting in a noticeable gap between public and private schools. Nevertheless, some exceptional cases existed, wherein public schools had allocated one device to each student a few years ago and had lent Wifi routers to improve the network environments even in the student homes. These cases include Saga Prefecture and Shibuya Ward in Tokyo. While these were exceptions, since there are 249 elementary and junior high schools in Saga (Board of Education, Sage Prefecture, 2017), and 34 in Shibuya (Shibuya City, n.d.), these cases highlight that a substantial number of public schools had been ready for online education.

On May 4, the state of emergency was extended until the end of the month, and most schools remained closed. Shortly afterwards, on May 14, the state of emergency was lifted in 39 prefectures, followed by the Greater Tokyo Area on May 25. Schools began to resume in June, but in major cities, many schools took measures to shorten in-class hours to reduce contact between students. In addition, there were many schools that divided classes into two groups and introduced staggered hours for attendance. Meanwhile, in less impacted regions, schools returned to normal with a regular attendance of students. In July and August, most schools shortened their summer break and held alternative classes to make up for the delay in the curriculum due to the temporary closure. Fortunately, by the beginning of the second semester in September, most schools were able to catch up and return to normal, successfully reaching the end of the semester in December.

When the COVID-19 outbreak temporarily waned in September, the government of Japan launched the *Go To Travel* campaign, where the government partially covered the travel costs of citizens visiting less impacted regions. This policy intended to revitalize the tourism industry, which was facing significant damage. However,

the number of daily infected cases began to resurge around November, resulting in the nationwide outbreak. On January 7, 2021, the government declared the state of emergency for the Greater Tokyo Area, and on January 13, extended the declaration to 7 prefectures. This declaration focused mainly on restaurants, and thereby did not require any school closure. On January 16 and 17, 550,000 high school students were able to take the Common Test for University Admissions as originally scheduled (Table 5.1).

5.3 Home-Based Learning During the School Closure and MEXT's Policy Initiatives

In Japan, thus far, school closure has only happened once, and for a relatively short period. The efforts of schools and the MEXT enabled the delay in covering the curriculum to be resolved by the end of summer 2020. Even so, the school closure disrupted student learning, and the impact was disproportionately larger in some regions, and among certain types of schools. This section will unpack the mechanism of how this disparity emerged, and delineate key factors contributing to this disparity. First, we provide the contextual information on Japan's decentralized education system, where schools are founded and run by different kinds of actors. Then, we move on to describe disparities in student home-based learning during the school closure, first by school type, and second by prefecture. While illustrating the learning gap, we draw from surveys and highlight potential key factors in explaining the disparities. While the COVID-19 pandemic undoubtedly disrupted student learning, we also highlight policy initiatives from the MEXT that have the potential to alleviate the negative impact of the pandemic.

5.3.1 Background: Japan's Education System

Before diving into a description of the pandemic's impact, we will first provide a brief summary of Japan's education system. As of 2020, the Japanese education system houses over 15 million children and students, from kindergarten to high schools (MEXT, 2020b). The levels of elementary and junior high schools constitute compulsory education. While the national curriculum stipulates what students learn, students rarely repeat grades, despite whether they have actually learned the curriculum or not, particularly at the level of compulsory education[1] (Ikeda & García, 2014). This suggests students, despite the school closure and loss of learning opportunities, would be nonetheless promoted to the next grade. The senior high school

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[1] In Japan, compulsory education includes two levels: (i) six years of primary education (corresponding to 6–11 years old); (ii) three years of lower secondary education (corresponding to 12–14 years old).

Table 5.1   Timeline of the COVID-19 crisis and Japan's response

Date	Topic/Event
2020/1/28	COVID-19 classified as designated infectious disease
2020/2/4	MEXT's notification regarding students returning from China
2020/3/2	MEXT's notification regarding school closure across the nation
2020/3/31	Minister of MEXT expressed intention to accelerate GIGA School initiative and promote home-based learning
2020/4/1	Tokyo Metropolitan Government postponed the reopening of schools to May 6
2020/4/7	Declaration of state of emergency in 7 prefectures, accompanied by request for citizens to refrain from going outside unnecessarily, and restriction on usage of school campuses
2020/4/16	State of emergency expanded nationwide
2020/4/24	Temporary closure in 95% of elementary and junior high schools
2020/5/1	23 prefectures and cities designated by govt. ordinance to extend school closure until the end of May
2020/5/4	State of emergency extended until the end of May
2020/5/7	Majority of local governments decided extension of school closure
2020/5/13	88% of elementary and junior high schools continued closure after holidays
2020/5/14	State of emergency lifted in 39 prefectures
2020/5/21	State of emergency lifted in Osaka, Hyogo, and Kyoto prefecture
2020/5/25	State of emergency lifted in the remaining 5 prefectures
2020/5/25	Schools in the Greater Tokyo Area decided to reopen in June
2020/7/15	Tokyo Metropolitan Government raised the alert level to highest
2020/8/17	Real GDP for April-June period declined by 27.8% (on an annualized basis), worst ever after the Second World War
2020/8/28	(then) Prime Minister Abe announced resignation
2020/8/28	MEXT announced the result of a survey on online education in schools
2020/9/10	Tokyo Metropolitan Government lowered the alert level
2020/9/16	Suga, President of the Liberal Democratic Party, appointed as Prime Minister
2020/9/25	Government decided to expand the *Go To Travel* campaign from October
2020/9/29	MEXT announced the budget request plan for the next fiscal year
	(4,301 billion yen)
2020/10/13	Nippon Keidanren (Japan Business Federation) announced policy recommendations, including expansion of online education
2020/10/26	Prime Minister Suga announced in his general policy speech to balance infection control and economic activity
2020/11/6	The closing price of Nikkei Stock Average reached the highest level in 29 years
2020/11/16	Preliminary estimates of GDP for July–September period increased by 21.4% (on an annualized basis)
2020/11/19	Tokyo Metropolitan Government raised the alert level to highest

Table 5.1 (continued)

Date	Topic/Event
2020/12/17	The limit of students per class in elementary schools to be decreased to 35
2020/12/28	*Go To Travel* campaign suspended nationwide
2021/1/7	Declaration of state of emergency in the Greater Tokyo Area
2021/1/13	State of emergency expanded to 7 additional prefectures

enrollment rate is about 98% and the dropout rate is less than 2%. While selection upon entry (typically in the form of exams) is required in public senior high schools, only a few of these schools are highly competitive.

While there exist national, public, and private schools in Japan, only 0.6% of students are in national elementary schools, and 1.3% in private elementary schools, as of 2020 (MEXT, 2020b). In other words, Japan's education system is predominantly characterized by public schools. Likewise, only 0.9% of students are in national junior high schools, and 7.5% in private schools (although this figure is much higher in Tokyo with 25.2% being students in private junior high schools) (MEXT, 2020b). In contrast, the proportion of students in private schools is larger at the level of senior high schools (32.9%), whereas only 0.3% of students are enrolled in their national counterparts (MEXT, 2020b). In Tokyo, the ratio is even higher, with 56.4% of students in private senior high schools (MEXT, 2020b).

It is important to note the heterogeneity even among public schools. In addition to elementary and junior high schools, which have existed since the inception of the modern schooling system, different types of schools were allowed to be established, which are compulsory education schools and secondary schools. A compulsory education school is one integrating an elementary and junior high school, whereas a secondary school is the combination of a junior and senior high school. The latter requires exams upon entry even at the level of junior high schools, unlike traditional counterparts. Lastly, special-needs education schools were set up for children with disabilities, covering elementary through high school.

Similar to the US, Japan's education system is decentralized across three layers of administrative divisions: (i) national, (ii) prefectural, and (iii) municipal, respectively. As described later, different layers of local governments are in charge of different types of schools. For example, it is local municipalities that open and maintain public elementary and junior high schools. Remarkably, however, teacher salary is paid by prefectural and national governments (the former covering two-thirds, while the latter one-third). In this way, it is possible for teachers to receive similar salaries, despite fluctuations in the size of funding among different local municipalities.

5.3.2 Disparity in Home-Based Learning During School Closure by School Type

As mentioned above, different school types exist within the system of education. Accordingly, the proportion of schools providing online education differs by category of the school types. As shown in Table 5.2, among public elementary and junior high schools, only 5% of the schools helped students with their home learning through interactive online lectures in April (the beginning of the temporary closure). By June (the end of the closure), as Table 5.3 illustrates, the number increased to 8% of elementary schools and 10% of junior high schools, which nonetheless indicates the implementation was rather stagnant. In contrast, a higher proportion of schools of the other types offered online lectures. According to Table 5.3, 17% of compulsory education schools, 47% of senior high schools, even 70% of secondary schools, and 40% of special-needs education schools did so.

The discrepancy by school type, and particularly the tendency where secondary schools were more successful in providing online instruction, are visible in other items listed in Table 5.3 , such as the utilization of TV programs, or of other digital learning materials. For example, while only about 35% of elementary and junior high schools used TV programs, 50% of secondary schools did so.

We argue that this gap by school type might be linked to education governance structure, particularly, the issue of who established the school. As mentioned earlier, the administrative divisions of Japan consist of two layers: the level of prefectures and of municipalities. Each administrative division organizes its own local government,

Table 5.2 MEXT's survey result on educational instruction in public schools during the temporary school closure (as of April 16, 2020)

Type of instructions	Number of school founders
Home-based learning (HBL) utilizing textbooks and teaching materials in hard copy	1213 (100%)
HBL utilizing TV programs	288 (24%)
HBL utilizing lecture videos created by Board of Education (BoE)	118 (10%)
HBL utilizing digital textbooks and other digital learning materials	353 (29%)
HBL via interactive online lecture	60 (5%)
Other	145 (12%)

Source MEXT (2020c)

Note This question allowed respondents to choose multiple items. School founders are typically local municipalities, or prefectural governments. The total number of school founders is 1,213. Percentage in parentheses represents the proportion of school founders using a given type of instruction among the total number of school founders

Table 5.3 MEXT's survey result on educational instruction for HBL by school type after the school closure (as of June 23, 2020)

Types of instruction	School type					
	Elementary school	Junior high school	Compulsory education school	Senior high school	Secondary school	Special-needs Ed. school
Use hard copies of textbooks and teaching materials	1715 (100%)	1742 (100%)	87 (100%)	153 (99%)	20 (100%)	105 (95%)
Use TV programs	608 (35%)	586 (34%)	41 (47%)	48 (31%)	10 (50%)	39 (35%)
Use lecture videos created by BoE	385 (22%)	407 (23%)	34 (39%)	46 (30%)	10 (50%)	47 (43%)
Other digital learning materials	591 (34%)	627 (36%)	46 (53%)	79 (51%)	15 (75%)	47 (43%)
Interactive online lecture	138 (8%)	173 (10%)	15 (17%)	72 (47%)	14 (70%)	44 (40%)
Safe exercise at home	1076 (63%)	1047 (60%)	58 (67%)	84 (55%)	15 (75%)	78 (71%)
Other	30 (2%)	22 (1%)	2 (2%)	2 (1%)	0 (0%)	11 (10%)

Source MEXT (2020d)
Note This question allowed respondents to choose multiple items. The numbers in the cells denote that of school founders as in Table 5.2. The percentage in parentheses represents the proportion of school founders using a given type of instruction among the same type of school founders

although that of a municipality is usually smaller than that of a prefecture. According to the School Education Law, every school has to be established either by the national, or local government (of prefectures or of municipalities), or school organizations (usually in the case of private schools). School type differs based on who serves as a school founder. In the case of public elementary and junior high schools, it is local municipalities that establish schools, and therefore manage school funding.

In the case of secondary schools, on the other hand, it is often a prefectural government that founds schools. These secondary schools, with greater funding, compete with private schools and strive to proactively promote digitalization of education to serve as a model school in their respective region. Likewise, most compulsory education schools might have better ICT facilities for a different reason. They were often established through a merger of existing elementary and junior high schools. Concomitant with the merger, they rebuilt the facilities such as school buildings and renovated their ICT environments.

In addition to the issue of school founders, we believe that parents' socioeconomic status (SES) might be another key factor in the disparity among different types of schools. While secondary schools are public, they require entrance exams unlike other public junior high schools. As is often the case with selective schools, households sending their children to secondary schools tend to have higher socio-economic backgrounds. Arguably, children in those households might have better access to ICT devices and the Internet.

Differences in parent SES can also play a key role in explaining the gap between public and private schools in general. While there is not enough data on private schools readily available, many 6-year private secondary schools are in urban areas, and those schools tend to compete with public secondary schools for student recruitment. This suggests that the level of education (including ICT facilities) should be equivalent or higher than that in public secondary schools. Furthermore, while the number of private elementary schools are small in Japan, students with a relatively wealthy family background enroll in those schools. Capitalizing on the higher tuition, those schools are able to set up facilities for online education.

In contrast, public elementary and junior high schools are struggling with the lack of technology and devices necessary for online education, not just in schools but also in student households. If such disparity exists within the same class or school, most public schools adjust the level and method of education to a student of the lowest SES status to ensure equality. Hence, in these schools, economic and social challenges present in some families can directly influence a delay in education for the entire school, which eventually amplifies the disparity among different types of schools.

5.3.3 Disparity in Home-Based Learning During School Closure by Prefecture

In addition to the gap by school type, there exists a regional disparity in student learning during the pandemic. In this section, we illuminate the learning gap at the level of prefectures, drawing on two surveys conducted by the Cabinet Office, and MEXT, respectively.

Even before the launch of the GIGA School project, local governments were installing ICT devices and high-speed network in public schools, funded through local taxes, as well as tax allocations from the central government. The allocated tax from the central government was designed and calculated to help local governments in digitalizing their education. However, since the central government did not have any legally binding power as to how local governments would spend the allocated money, not all local governments used it for the intended purpose. In other words, the discrepancy related to ICT environments already existed before the Coronavirus outbreak.

Figure 5.1 presents the ratio of the number of laptops per student in each prefecture. As is visible in the figure, the ratio differs remarkably by prefecture. In Saga
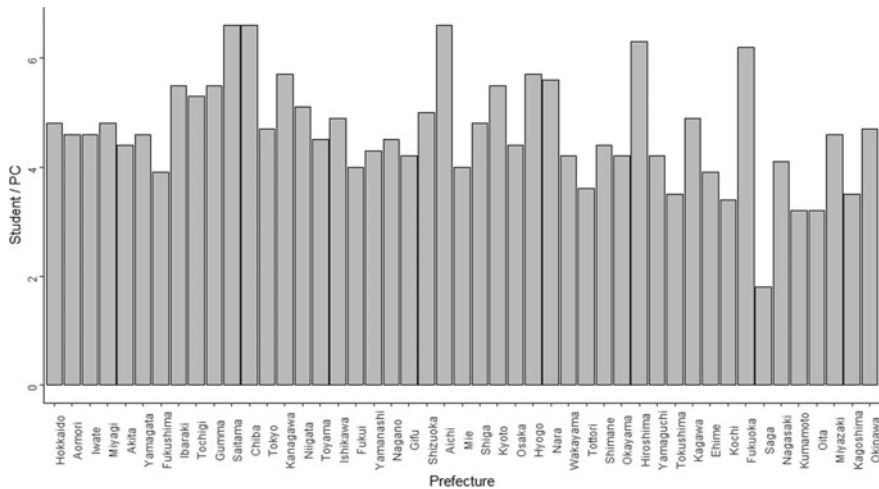
Fig. 5.1 The number of PCs per student in public schools by prefecture (as of March 1, 2020) *Source* MEXT (2020a). *Note* The vertical axis denotes the ratio of the number of PCs per student in public schools. Smaller number indicate more devices are available for the given number of students

Prefecture, for example, the ratio is less than two, showing that more ICT devices have been distributed to students in Saga Prefecture than in other prefectures. While Saga Prefecture serves as an exemplary case at the prefectural level, Shibuya Ward (Tokyo) and Tsukuba City (Ibaraki Prefecture) are model cases at the municipal level.[2] Shibuya Ward even offered support for home-based Internet access for student learning.

Given the difference in ICT environments shown above, the school closure should have had differing impacts on students, depending on the prefectures where they lived. To examine this disparity, we drew on a survey that the Cabinet Office conducted during May and June 2020, which coincided with the school closure. The Cabinet Office intended to capture the change in people's ways of thinking and behavior in daily life due to the COVID-19 pandemic (Cabinet Office, 2020). The survey carried out online targeted 10,128 registered people over the age of 15 (Cabinet Office, 2020). We used a question on what kind of instructions respondents' youngest children received during the pandemic.[3] Figure 5.2 shows the proportion of children receiving some forms of online education by prefecture.

Among all the prefectures, on average, 10.2% of students received online education during the school closure. Notably, as shown in Fig. 5.2, the number in Saga Prefecture is much higher (66.7%) than the average, although the sample size is rather small. Another limitation to this survey is that it did not distinguish public and private schools. Hence, we cannot really compare this survey with that by the MEXT, because the latter explored only public schools.

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[2] Consult the Sect. 5.1 to see the number of schools in these school districts.

[3] See Appendix A for more details on questions used for this analysis.
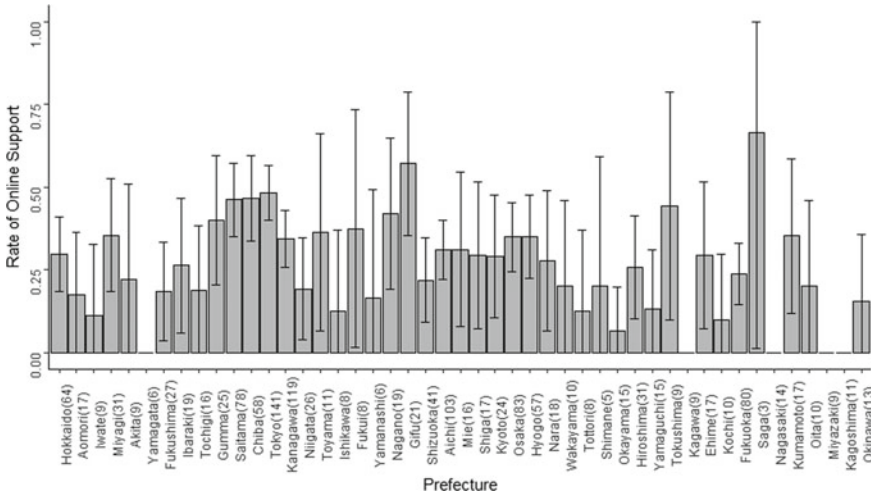
Fig. 5.2 Proportion of Respondents' Children Receiving Some Forms of Online Education During the School Closure (n = 1,363) *Source* Cabinet Office (2020). *Note* Some forms of online education denotes either online education from teachers, online tutorials, and feedback (including emails), or online learning materials received from schools for home-based learning. The total number of prefectures is 47, and the figure in parentheses beside the name of a given prefecture represents the number of respondents in the prefecture. Error bars indicate the 95% confidence intervals

While another survey needs to be done to directly reveal the relationship between the ICT facilities (particularly, the ratio of laptops per student) and implementation of online learning, it is highly probable that the level of ICT environments by prefecture leads to the regional disparity in student home-based learning (HBL). Differences in digital investment in schools, such as one device per student and high-speed Internet, seems to indeed be a common factor in explaining the gap by school type or by prefecture. In the following section, we highlight the MEXT's initiative to potentially close the student learning gap.

5.3.4 The GIGA School Initiative as the Policy Solution

As mentioned in the first section, the national government, in response to the pandemic, decided to advance the GIGA School Initiative ahead of its original schedule. By the end of March 2021, all elementary and junior high schools will allocate one device per student and install high-speed networks. Using a subsidy from the national government, each local government will be in charge of implementing this project on the ground. Furthermore, local municipalities will take additional measures, such as lending mobile Wi-Fi devices to households without Internet. As mentioned thus far, the discrepancy in school funding is linked to the issue of school

founders with less financial resources. By means of the national government's financial assistance, this initiative is likely to narrow such a gulf existing among different kinds of schools and among prefectures.

The GIGA initiative places its primary emphasis on the hardware of online education. In terms of educational content, we would like to underscore that abundant resources are available in Japan and draw particular attention to programs by the Japan Broadcasting Corporation (*Nippon Hōsō Kyōkai*, in Japanese; hereinafter, NHK). Since 1959, the NHK began a free channel dedicated solely to education, and have created quality educational programs, some of which covered school curriculum. Taking advantage of its experience and capacity to develop educational content, the corporation started the *NHK for School* in 2011. This platform provides various online educational contents, and more importantly, is compliant with the Curriculum Guidelines (i.e., the national curriculum). From 2015, the *NHK for School* began to provide programs helping students learn through the medium of tablet devices. If ICT environments were in place, students would have been able to enjoy the benefit of these NHK programs, even during the sudden school closure.

Certainly, there is concern over whether students can learn by relying on online education. In fact, a research team led by Professor Jun Nakahara of Rikkyo University investigated student learning during the school closure in May and revealed 62% of the students (out of 760) did not know what to do during the school closure (Takasaki et al., 2020). Acknowledging the lack of student agency, however, the MEXT has made revisions to the Curriculum Guideline in 2017 to place a greater emphasis on this aspect of student knowledges, skills, and attitudes (Shirai, 2020). While the implementation of the new Curriculum Guideline is still underway, once school education becomes fully aligned, students exercising their agency will be able to tap into the rich educational resources available to them in these newly installed ICT environments.

5.3.5 MEXT's Additional Supportive Policy Measures

Besides the GIGA School initiative, the MEXT has been implementing various supportive measures, which this section will overview below. As shown in Table 5.4, the MEXT's responses to COVID-19 can be grouped into 3 categories: (i) support for students facing economic hardships, (ii) assistance with children's learning, and (iii) disbursement of ICT devices and relevant services. Detailed explanation on each policy item will not be covered in our analysis, however, we will highlight the fact that the MEXT promptly executed necessary measures under rapidly changing circumstances. In Appendix B, we include the list of the MEXT's initiatives for readers' reference.

Table 5.4 MEXT's various supportive measures

Type of support	Items
Supporting students facing economic difficulties	"Emergency Student Support": cash handout program for students to continue studying
	Financial assistance from Japan Student Services Organization (JASSO)
	Expansion of tuition reduction/exemption
Assisting with children's learning	Staffing schools via the School/Child Supporter Human Resources Bank
	Support for schools: Covering expense for school principals to combat infection and implement effective learning
	Reconsideration of curriculum: resolving the delay in the curriculum (i) designating school attendance days (ii) staggered attendance (iii) flexible timetables (iv) shortening the summer break (v) Open classes on Saturdays
	Reconsideration of curriculum: devise measures in case not everything in the curriculum can be covered (i) carrying over some of the content to next year and beyond (ii) splitting learning activities between home and schools to reduce those in schools
Promoting ICT devices	"One device per student": acceleration of the GIGA School Initiative
	Covering communication expenses enabling HBL of students in low-income households
	Launching a website to support children's effective learning
	Satellite broadcasting of contents from the Open University of Japan

5.4 Threat to Learning Opportunities and Room for Optimism Amidst the Pandemic

The previous section analyzed the disparity stemming from differences in education governance structure. The pandemic indeed exacerbated the pre-existing disparities, not just at the municipal level, but also in various social groups, particularly the vulnerable population. Various studies reported detrimental effects of the COVID-19 crisis on households with lower socioeconomic status (García & Weiss, 2020; Yarrow, Masood, & Afkar, 2020). In the first half of this section, we draw particular attention to single-parent households. During the school closure, when parents were absent at home, children had to face home learning without parental support. Additionally, if single parents lost their jobs due to the worsening economic situation, financial shortages deprived children of ICT tools that provide access to online education. Children in single-parent households, therefore, faced an even greater threat to their learning.

In the latter half of this section, however, we portray different sides of the COVID-19 Pandemic. In response to the school closure, the policy initiative to distribute personal ICT devices was accelerated, as mentioned above. In addition to this development, we will sketch a few silver linings of this crisis, and how they have the potential to ameliorate the current disparity of access to education among students.

5.4.1 Deprivation of Learning Opportunities from Children in Single-Parent Households

The Japan Institute for Labor Policy and Training (JILPT) led a survey to clarify the impact of the COVID-19 Pandemic, particularly on single-parent households. The survey highlights the severe distress single-parent families faced amidst the crisis. While comparing 500 single parents with 500 non-single parents, 60.8% of single parents reported that they were struggling to make ends meet toward the end of the year, and 35.6% were unable to buy food (JILPT, 2020). In the case of non-single parents, the figures were much lower (47.6% and 26.4%, respectively), indicating that single parents were in dire straits (JILPT, 2020).

Other surveys call attention to how financial hardship hampered learning opportunities for children in single-parent households. A survey conducted by Save the Children, Japan, revealed 32% of single-parent families in Tokyo answered that their children "may drop out of high schools" due to financial reasons (Save the Children Japan, 2020). Surprisingly, another survey led by an NPO, Single-Mother Forum, and researchers revealed about 40% of households with children in junior high school or older had no computers or tablets available at home (Single Mothers Survey Project Team, 2020). In addition, about 30% of households did not have access to the Internet at home or had to limit data usage (Single Mothers Survey Project Team, 2020). This result matches those from a survey by Aomori Prefecture, in which 36.8% of single-parent households (95.4% are single mothers) answered that the environment for online classes at home was "not good or not at all [good]" (Future of Children Division, Aomori Prefecture, 2020). These households would not have been able to benefit from online education even if it had been implemented during the school closure.

5.4.2 Ray of Hope for Education Amidst the COVID-19 Pandemic

The above snapshot of single-parent households implies detrimental effects of the pandemic on social groups with low SES. This aspect cannot be emphasized enough and requires us to monitor future interventions. However, it cannot be overlooked

either that this crisis opened a path toward improvement of schools and education systems, and even reduction of the learning disparities described above. Most importantly, the crisis accelerated the GIGA School Initiative policy initiative, as mentioned earlier. By providing every student with one laptop or tablet, this initiative is expected to close the gap in student access to online education. Local municipalities also offer students mobile Wi-Fi tools, which could be of great help to those who have no internet equipment at home. This section aims to highlight three additional silver linings in this pandemic. Those include the transformation of teacher professional culture, personalized learning through online education, and enhanced communications between parents and children.

Teachers in Japan are well known for their high degree of professional identities (Akita & Lewis, 2008). This pride as an educational professional does not necessarily translate into the usage of ICT devices. According to TALIS in 2018, only 18% of teachers answered that they use ICT "frequently" or "always" at the junior high school level (OECD, 2020a). In some cases, it is even possible that this very professional identity can inhibit teachers from relying on digital materials. Some teachers view other teachings utilizing online materials made by others as a lack of effort, and these teachers might try to create their own materials. Indeed, during the school closure, as indicated by the MEXT survey, far less than half of the teachers used TV programs (despite readily available content, such as *NHK for School*) or lecture videos provided by the Board of Education (MEXT, 2020c). However, compared to the figure in TALIS (18%), 36% of junior high school teachers reported using digital learning materials during the closure. According to another survey of teachers in public elementary and junior high schools conducted after the school closure (Benesse Educational Research and Development Institute, 2021), even higher proportions of teachers implemented ICT devices in classes after schools were reopened: 63.3% in elementary schools and 58.9% in junior high schools (pp. 16–17). As the GIGA school initiative is further promoted, and ICT environments are set up, teachers will be able to fully tap into the opportunity to rely on diverse resources. By enhancing this new practice, we argue, it could gradually transform the teacher culture in Japan.

Second, this crisis enabled Japan's education system to provide more personalized learning via online education. Japan has one of the highest number of children and students per class among OECD countries. According to the OECD's Education at a Glance (OECD, 2020b), in 2018 the number of students per class in Japan was 27.2 compared to the OECD average of 21.1 in elementary schools. In the case of junior high school, that number was 32.1 compared to the OECD average of 23.3. The implementation of online classes and tutoring during the school closure allowed students to ask teachers questions "in person," and allowed teachers to give each student more individualized attention.

Lastly, it is also important to highlight positive changes in the relationship between children and parents. According to a survey conducted by the Cabinet Office, 70.3% of married couples answered that time spent with family increased during the pandemic (Cabinet Office, 2020). For those who experienced work from home, as high as 77.7% reported that time spent with family increased (Cabinet Office, 2020). As shown in an online survey conducted by the National Center for Child Health and

Development, about 75% of children in the lower grades of elementary school (grade 1–3) needed parents' help in home learning, and 60% of those in the upper grades of elementary school (grade 4–6) needed parental help as well (National Center for Child Health & Development, 2020). Hence, the increased time that parents spent with their children, particularly for younger students, and their increased capacity to assist their children, could improve learning at home.

5.5 Conclusion: Implications for Future Education and Policy

In this chapter, we describe the trajectory of the COVID-19 pandemic in Japan and illustrate government and school responses. Despite the uncertainty and anxiety posed by the outbreak, the MEXT promptly announced policy initiatives and took various supportive measures, most notably, the initiative to distribute personal ICT devices to students. Schools, amidst the crisis, also took full responsibility for their daily operations and strove to ensure student learning opportunities. Undoubtedly, the crisis had persisting negative impacts on everyday learning, and exacerbated pre-existing disparities among vulnerable populations, as well as among local governments. Aware of the enormity of the damage caused by this historic event, however, we cannot stop offering, developing, or reimagining education.

As a concluding remark, we put forth key takeaways and postulate a way forward out of the crisis. The first step is to reconsider the purpose of schools. Traditionally, schools have served as the place for developing academic skills. The experiences of the pandemic, however, highlight the need to understand the importance of schools as the place for students' mental growth, mental care, and mutual support through communication and collaboration with friends and peers. Around 90% of teachers reported that after the coronavirus outbreak, they came to see schools as a site for learning with peers and socializing with others (Benesse Educational Research and Development Institute, 2021). In fact, the National Center for Child Health and Development has disclosed a survey result which shows that roughly 30% of high school students reported symptoms of moderate depression during the pandemic (National Center for Child Health & Development, 2021). In this context, it would be imperative to rethink what the purposes and roles that schools play in education and learning. In doing so, it is necessary to involve not only the community of educational professionals, but also a more diverse groups of stakeholders, such as parents, businesspeople, and the general public.

The next step is to reimagine forms, scales, and ways of cooperation among schools and education systems. Given the policy initiatives allowing greater access to online education, students can now learn in a variety of ways, in diverse locations, and with different peers, rather than just continuously commuting to the same schools. The popularity of *N High School* symbolizes this shift in education and people's mindset. N High School is a correspondence high school that just opened in

the spring of 2016. It has rapidly increased the number of entrants, reaching 20,000, and its popularity has skyrocketed as it produced successful results related to university entrance. However, a closer look at this school reveals the popularity mainly stems from the on-campus courses and programs, such as agricultural and fishing experiences at the N Center (a local experiential learning center). In other words, it is not sufficient to just emphasize the importance of online education. Rather, we need to shift our focus onto the emergence of a new mode of learning that blends physical (in-classroom) instruction and online education.

The recently revised Curriculum Guidelines (i.e., the national curriculum) in fact resonates with this new form of education. It is characterized by active learning and inquiry-based learning. Students can exercise these different types of learning through online education at home, as well as real field experiences or site-based inquiry (including intensive courses at camps). In doing so, students can freely choose where, when, with whom (not just teachers, but practitioners; students of different grades, ages, and from other regions), and what and how to learn. This means that under these circumstances we can enhance more personalized learning. As stated by Yoshimasa Hayashi, former Minister of Education, Culture, Sports, Science and Technology, it is imperative to transform the focus of education policy from formal egalitarianism to fair individually optimized learning in public education (MEXT, 2018).

In this new setting, networks of schools can play a significant role and eventually change the power dynamics of schools. In Japan, the rapid decline in birthrate has led to the closure and merger of high schools and reduction of universities in rural areas. By capitalizing on online education, however, those high schools in remote areas, which would have to downsize or go under, could remain centers of learning. If multiple centers are networked across regions, it will be possible to secure a certain number of students and teachers, while offering a variety of programs in different locations and potentially attract more students from wider areas. Field experiences or experiential learning offered in these networks could serve as a hallmark that even schools in urban areas might envy.

In order to achieve this goal, the current standards for establishing schools will have to be reconsidered from all perspectives. At the same time, it is crucial to plan how to evaluate and guarantee the quality of these new educational programs and of the governance of educational institutions supplying those programs. Additionally, we need to rethink ways in which the government is involved in education (such as licensure, certification, supervision, and disbursement of subsidies) for schools and students to exercise more agency.

Aside from policy initiatives to amend the problems mentioned above, the importance of capturing the impacts of the pandemic on students in more detail cannot be overlooked. As reviewed in this chapter, there are attempts to document what kind of education is available for students. Yet, we still need to directly measure how this crisis has influenced student academic performance. The MEXT will conduct a nationwide survey in May 2021. The result of this survey is expected to help us analyze the effects of the pandemic even more thoroughly.

COVID-19 presents unprecedented challenges to us. Whether we can take them as opportunities to reform education depends on how we will fight back. If we never stop developing our ingenuity and keep learning via trial and error, we believe this pandemic will indeed lead to groundbreaking innovations that can add a new page to the history of education in Japan and around the world.

Appendix A: List of Questions from the Survey by the Cabinet Office

Here we present the list of questions and answer choices which we used for the analysis in Fig. 5.2.

Q1-1: Prefecture of your residence

Q25: Please tell us about your youngest child (in elementary school or above).
Mark all types of instructions your child has experienced during the COVID-19 pandemic.

(1) Online education from a teacher
(2) Online tutorials and feedbacks (including emails etc.), from a teacher
(3) Online learning materials provided from school for home-based learning
(4) Online education outside school, such as cram schools/private tutoring
(5) Online tutorials and feedbacks (including emails etc.), from cram schools/private tutoring
(6) Online learning materials provided from cram schools/private tutoring
(7) Other kinds of online education
(8) Did not receive any online education
(9) Not sure
(10) Have no child in elementary school or older

Source Cabinet Office (2020).

Appendix B: Overview of MEXT's Policy Initiatives

Date	Title/Website	Overview

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Date	Title/Website	Overview
2020/2/28	Notification regarding the COVID-19 response - temporary closure for elementary, junior, senior high, and special-needs education schools[4]	• "The health and safety of the children comes first and foremost" • Temporary closure based on Article 20 of the School Health and Safety Act (Act No. 56 of 1958) • Recommendations for home study, etc • In the event that the number of class hours falls below the standard number of class hours as specified in the Enforcement Regulations of the School Education Law due to a temporary closure, that fact alone shall not be considered a violation of the Enforcement Regulations of the School Education Law
2020/3/2	Launched website supporting children's learning[5]	Learning support contents portal site • Links to content supporting children's learning • "Exciting Science" Links • Learning support contents for each subject
2020/4/21	Request for retired teachers as human resources to support schools in coping with the COVID-19 outbreak[6]	• MEXT will support the assignment of additional teachers and learning instructors to supplement classes and supplementary lessons that are not positioned in the curriculum for the 2020 academic year • Encourage the use of retired teachers • Relax qualification requirements as necessary to secure a wider range of human resources

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[4] MEXT. (2020). *Shingata koronauirusu kansenshō taisaku no tame no shōgakkō, chūgakkō, kōtōgakkō oyobi tokubetsu shien gakkō nado ni okeru issei rinji kyūgyō ni tsuite (tsūchi)* [On temporary closure for elementary, junior, senior high, and special-needs education schools as response to COVID-19 (notification)]. https://www.mext.go.jp/content/202002228-mxt_kouhou01-000004520_1.pdf.

[5] MEXT. (n.d.). *Kodomo no manabi ōen site -gakushū shien contents portal site* [Children's learning support website - Learning support contents portal website]. https://www.mext.go.jp/a_menu/ikusei/gakusyushien/index_00001.htm.

[6] MEXT. (2020). *Shingata koronauirusu kansenshō taisaku ni kakaru gakkō wo support suru jinzai kakuho ni okeru taishoku kyōin no katsuyō ni tsuite (irai)* [Utilization of retired teachers in securing human resources to support schools in countermeasures against new coronavirus infection (Request)]. https://www.mext.go.jp/content/20200421-mxt_kouhou01-000004520_3.pdf

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Date	Title/Website	Overview
2020/4/21	Notification to ensure learning during temporary closure of elementary, junior, and senior high schools[7]	• Based on the fact that there were large differences among local governments in terms of support for learning and confirmation of the physical and mental condition of individual students, the MEXT has issued a notice on the minimum measures that should be taken even during temporary closure • Compulsory education is to guarantee the right to education as stipulated in Article 26 of the Constitution • Improvement of home study required by schools • If textbooks are not available, they should be sent by mail • Study guidance and study counseling using ICT, telephone, etc
2020/4/24	Established a human resources bank for school and child supporters[8]	• After the reopening of schools, there will be many opportunities to need human resources to support schools in each region, so that boards of education, etc. will be able to find the necessary human resources immediately

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[7] MEXT. (2020). *Shingata koronauirusu kansenshō taisaku no tame ni shōgakkō, chūgakkō, kōtōgakkō nado ni oite rinji kyūgyō wo okonau baai no gakushū no hoshō nado ni tsuite (tsūchi)* [Guarantee of learning when elementary schools, junior high schools, high schools, etc. are closed temporarily for countermeasures against new coronavirus infection (Notification)].
https://www.mext.go.jp/content/20200421-mxt_kouhou01-000004520_6.pdf

[8] MEXT. (2020). *Gakkō koyō share link / gakkō kodomo ōen supporter jinzai bank ni tsuite* [About school employment share link / the human resource bank for school and child supporters].
https://www.mext.go.jp/a_menu/coronavirus/mext_00012.html

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Date	Title/Website	Overview
2020/4/27	Proactive use of ICT for learning at home and continuing schoolwork in response to the declaration of a state of emergency due to the COVID-19[9]	• Using ICT to ensure children's learning machines • Requests for a flexible response from the field to maximize the use of ICT environments in municipalities and households without being bound by the rules of normal times • Obtain understanding from families so that ICT terminals at home can be used for students' home learning • Each school should be aware of the communication environment at home • If it is possible for students to take home and use the terminals that have already been installed at school, they should actively use them without being bound by the normal rules
2020/4/30	Financial support for students affected by COVID-19[10]	• List of scholarships and study support systems, etc • New systems for higher education study support and loan scholarships • Study supports unique to each university and other related support systems • New system for higher education study support • Support for students whose family finances have suddenly changed, etc

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[9] MEXT. (2020). *Shingata koronauirusu ni yoru kinkyūjitai sengen wo uketa katei deno gakushū ya kōmu keizoku no tame no ICT no sekkyokuteki katsuyō ni tsuite* [Proactive use of ICT for learning at home and continuing schoolwork in response to the Declaration of a Dtate of Emergency due to the new coronavirus].
https://www.mext.go.jp/content/20200427-mxt_kouhou01-000004520_1.pdf

[10] MEXT. (2020). *Shingata koronauirusu kansenshō ni kakaru eikyō wo uketa gakuseitō ni taisuru keizaiteki shien nado ni tsuite* [Financial support for students affected by the new coronavirus infection].
https://www.mext.go.jp/content/20200501-mxt_kouhou01-000004520_4.pdf

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Date	Title/Website	Overview
2020/5/14	Notification regarding the direction of "security of learning" in the implementation of school education activities amidst the COVID-19[11]	• It is important for schools, families, and communities to work together and take all possible measures to ensure that no child is left behind and that learning is maximized • In order to be able to respond flexibly, it is necessary to make preparations, including the development of the ICT environment • Flexibly review the "how to learn" (instructional methods) stipulated in the Courses of Study • Policy to allow the transfer of study guidance from one year to the next, and plans to take institutional measures for this purpose
2020/5/27	MEXT Emergency Measures Package (Vol.2)[12]	• Support for students and others who are having trouble making ends meet • Guarantee of learning for children • Support for university hospitals and research sites
2020/5/29	Emergency measures for students who have been financially affected by the COVID-19- Emergency package to "support students' learning"[13]	• Emergency Student Assistance Benefit" for "Continuing Education • Creation of special emergency interest-free loan scholarships • Emergency tuition fee reduction and exemption • Enhancement of the deferment system for repayment • Emergency donation for countermeasures against new coronary infections (call for donations to the Japan Student Services Organization)

[11] MEXT. (2020). *Shingata koronauirusu kansenshō no eikyō wo fumaeta gakkō kyōiku katsudō nado no jisshi ni okeru "manabi no hoshō" no hōkōsei nado ni tsuite (tsūchi)* [Direction of "Guarantee of learning" in the implementation of school educational activities, etc. in light of the influence of the new coronavirus infection (notification)]. https://www.mext.go.jp/content/20200515-mxt_kouhou01-000004520_5.pdf

[12] MEXT. (2020). *Mombukagakushō kinkyū taisaku pakkēji (dai 2 dan)* [MEXT Emergency measures package (Vol. 2)]. https://www.mext.go.jp/content/20200527-mxt_kouhou02-000006999_1.pdf

[13] MEXT. (2020). *Shingata koronauirusu ni yori keizaiteki na eikyō wo uketeiru gakuseitō heno kinkyū taiō sochi - gakusei no "manabi no shien" kinkyū package* [Emergency measures for students who have been financially affected by the new coronavirus - Emergency package "to support students' learning"].
https://www.mext.go.jp/content/20200529-mxt_kouhou01-000004520_1.pdf

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Date	Title/Website	Overview
2020/6/5	Notification regarding guideline for sustainable school management in response to COVID-19 and a package of comprehensive measures to "security of learning" of students[14]	• In order to guarantee the right to education for students and others in a sustainable manner, it is necessary to continue school management • Students who are unable to attend school due to temporary closures, etc., will be required to study at home, and teachers will provide appropriate academic guidance and monitor their learning status • Priority will be given to 6th graders, 9th graders, and 12th graders who need guidance for their future career • Enhance instruction at school by increasing the number of class periods per day, devising a timetable, shortening long holidays, and utilizing Saturdays • Even if the number of class hours is lower than the standard number of class hours stipulated in the School Education Law Enforcement Regulations, it will not be considered a violation of the regulations • Make maximum use of all types of equipment and environments, without being bound by the rules for ICT use during normal times • Enforcement of the compensation system for public transmission for classroom purposes

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[14] MEXT. (2020). *Shingata koronauirusu kansenshō ni taiō shita jizokuteki na gakkō un-ei no tame no guideline oyobi shingata koronauirusu kansenshō taisaku ni tomonau jidō seito no "manabi no hoshō" sōgō taisaku package ni tsuite (tsūchi)* [Guidelines for sustainable school management in response to new coronavirus infection and a package of comprehensive measures to "guarantee the learning" of students in response to new coronavirus infections (Notification)]. https://www.mext. go.jp/content/20200605_mxt_kouhou02_000007000-1.pdf

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Date	Title/Website	Overview
2020/8/13	Notification regarding public notice providing for special provisions of the Courses of Study for Elementary Schools, Junior High Schools, and Senior High Schools from FY2020 to FY2022, and for special provisions of the Courses of Study for Special-needs Schools[15]	• Part of curriculum originally scheduled to be taught in 2020 (standard scholastic grade) and 2021, to be moved to 1 year ahead of grade 2021 or 2 years ahead of grade 2022 • This is a special provision to allow restructuring of the curriculum into the next 1–2 academic years • Although the number of conducted class does not reach the target number of class in curriculum, this will not be considered as violation of Enforcement Regulations for the School Education law • Elastic certification process to be applied for the completion of each grade curriculum or graduation, so there will be no disadvantage for students to proceed to the next level of education

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[15] MEXT. (2020). *2020 nendo kara reiwa 4 nendo made no aida ni okeru shōgakkō gakushū shidōyōryō, chūgakkō gakushū shidōyōryō oyobi kōtōgakkō gakushū shidōyōryō no tokurei wo sadameru kokuji narabini tokubetsu shien gakkō shōgakubu / chūgakubu gakushū shidōyōryō oyobi tokubetsu shien gakkō kōtōbu gakushū shidōyōryō no tokurei wo sadameru kokuji ni tsuite (tsūchi)* [Public notice providing for special provisions of the Curriculum of Study for Elementary Schools, Junior High Schools, and Senior High Schools from FY2020 to FY2022, and for special provisions of the Curriculum of Study for Elementary and Junior High Schools and Senior High Schools for Special Needs Schools (Notification)].

https://www.mext.go.jp/content/20200813-mxt_kouhou01-000004520_1.pdf

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