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| RESEARCH ARTICLE

Education Responses in Teaching during Covid-19: The Ongoing Result in Online Learning Implementations

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| ABSTRACT
COVID-19 had made many learning opportunities difficult. Governments had to reconsider existing school infrastructure, educational resources suitable for online learning, building teacher capacity, and student readiness for this move. These barriers impacted the educational continuity of many students in the countries affected, and digital equity required careful planning, development, and goal setting to foster effective learning environments. The sample for this study consisted of 272 Indonesian teachers and 3988 Indonesian students. This study used a mixture of qualitative and quantitative approaches. The results of the study showed that the challenges and the solutions based on the Three Framework (Government, Teacher, and Student) had both advantages and disadvantages to implement the best method to ensure equal access to education and to minimize the digital divide by establishing a collaborative and cooperative structure with the private companies and relevant organizations. Based on the Three Framework perspectives, it was critical to redesign and revise the national online platforms and services, including e-learning content for cross-disciplinary competencies during Century 21st skills.

| KEYWORDS
Online Learning, The Three Framework (Government, Teacher, Student), Education Responses

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1. Introduction

The recent study on the impact of school and university closures policies has also been carried out in other countries. According to UNICEF prediction, there are 134 countries that are still enforcing school closing on a national scale. Therefore, it is undeniable that several countries have already started reopening schools, but there are still very few numbers (Gutierrez-Romero, 2020). Another research findings proved that more students lose a year of learning resulting from pandemic disruptions. Logically if the closing school situation continues, then the inequality of learning outcomes due to Covid-19's response continues to widen (Goldstein, 2020). World Health Organization has designated Corona Virus Disease 2019 (COVID-19) to be a Global Pandemic and Public Health Emergency of International Concern (PHEIC) due to the massive growth of positive cases of COVID-19 in several countries. As the Presidential Decree (Keppres) No. 7 of 2020 on the Task Force for the Acceleration of Corona Virus Disease 2019 (COVID-19) Handling in the Presidential Decree (Keppres) No. 9 of 2020 on the Amendment to Presidential Decree No. 7 of 2020 on the Task Force for the Acceleration of Corona Virus Disease 2019 (COVID-19) requires various mitigation efforts undertaken by the government, including the appeals for applying social and physical distancing following WHO protocol that must be done by the community. These two policies undeniably affect various aspects of life, including national education, as can be seen from the issuance of the Circular Letter of the Directorate General of Higher Education (Dirjen Dikti) of the Ministry of Education and Culture No. 302/E.E2/KR/2020 concerning the Learning Period of Educational Programs. This circular letter gives an appeal to K-12 Indonesian School and Higher Education to monitor and assist students' learning from home. Besides, it also gives authority to schools to take principal steps related to the scope of education units based on the existing conditions (Disantara, 2020). As the

schools and colleges are shut for an indefinite period, both educational institutions and students are experimenting with ways to complete their prescribed syllabi in the stipulated time frame in line with the academic calendar. These measures have certainly caused a degree of inconvenience, but they have also prompted new examples of educational innovation using digital interventions (Muthuprasad et al., 2021).

Teacher responses during online learning can be seen through the application of online courses. Teachers can select lectures and exercises that students should watch and perform, and they can also lead students through messages and synchronized sessions. The context of the virus and school closures can surprise and confuse students. Technology solutions must find ways to communicate, interact, and provide support during learning, especially in times of uncertainty. Simply replacing class time with online lectures and discussions can affect a student's health. Lectures can be shortened and combined with non-digital learning activities. According to students' responses during online learning, students should be provided with appropriate interactive digital learning resources. Criteria for selecting digital learning resources should include license, accuracy, interactivity, adaptability, cultural relevance and sensitivity, appropriateness of the content, material complexity, media relevance, and school timetable.

The research objective is to examine the role of the Three Framework (Government, Teachers, and Students) during the implementation of online learning as an education response due to the ongoing result of distance learning in COVID-19. The rest of this academic research is structured based on Tarigan and Stevani (2021) as follows: First, we discuss the Indonesian government's role in tackling the COVID-19 pandemic. Second, we measure how far the Indonesian government solutions to improve teachers' competence during online learning. Third, we present the students' online learning activity to prove teachers' teaching experience satisfaction during COVID-19.

2. Literature Review

2.1 The Barriers of Indonesian Government to Tackle the COVID-19 Pandemic

In the economic sector, the COVID 19 virus has had negative impacts in various fields, such as tourism, manufacturing, transportation, and creative industries (Fajar, 2020). Shocks in the Indonesian social system are mostly negative impacts of economic shocks due to the implementation of the physical distancing, social distancing, and PSBB policies (Supriatna, 2020). Economic shock due to COVID-19 can be clarified into three stages. First, the virus hit employees and their spending. In the informal sector, workers did not receive payment when they were sick. Second, governments implemented some restrictions, including temporary travel bans, limitations of public transportation, and even business closures. Third, limiting economic activity causes an economic downturn (Halimatussadiah et al., 2020).

In the health sector, the high cost of the COVID-19 test kit hinders the speed of tracking infection cases in Indonesia and limited medical personnel who died infected with Covid-19. Similarly, the procedures and the requirements of the Large-Scale Social Restrictions (PSBB) policy in Indonesia regions were too complicated and must meet many conditions. The regional head submits the PSBB proposal with data on the increase in the number of cases, increased number of spreads according to time, and local transmission incidents, to the Minister of Health. At the same time, violations against PSPB occurred in almost all regions. This indicates that the Government's policies are not being responded to positively by the community (Aminah et al., 2021).

In the education sector, the Ministry of Education and Culture was a government ministry that organized K-12 schools, that were elementary school, junior secondary school, and senior secondary school within the Indonesian government, when higher education affairs were transferred to the Ministry of Research, Technology and Higher Education (Faisal and Martin, 2019).

Table 1. An Overview of the Indonesian K-12 Schools

Age	School Year	Formal Educational Level	Types of Education
7-12	3-8 (6 years)	Elementary school	*Sekolah Dasar (SD)*
13-15	9-11 (3 years)	Junior secondary school	*Sekolah Menengah Pertama (SMP)*
16-18	12-14 (3 years)	Senior secondary school	*Sekolah Menengah Atas (SMA)*

Source: Government Regulation of the Republic of Indonesia No. 17 of 2010 Regarding Educational Management *(Peraturan Pemerintah Nomor 17 Tahun 2010 Tentang Pengelolaan dan Penyelenggaraan Pendidikan*).

Although the Indonesian government recently issued a regulation that school operational funds could be allocated to buy data

packages, schools still could not fully enjoy SFH learning because of low internet connectivity (Rasmitadila et al., 2020). One of the biggest challenges in Indonesia learning system is to uniformize the understanding of schools and teachers in responding to government policies. Thus, it becomes natural if the attitude of schools in responding to policies is very diverse (Arlinwibowo et al., 2020).

2.2 The Indonesian Teachers' Barriers of Online Learning from Home

ICT competencies of Indonesian teachers were unevenly spread across the regions. The problem of uneven access to the internet, the disparity of teacher qualifications and the lack of ICT skills were becoming the weakness in Indonesia's distance learning activity (Azzahra, 2020; De Giusti, 2020). Several teachers stated that it was not easy to maintain student enthusiasm for learning during online learning from home. At the beginning of SFH and online learning, students were enthusiastic about implementing learning, but after two months, students began to feel bored and less eager to learn (Rasmitadila et al., 2020).

The COVID-19 outbreak made new barriers to teachers, such as teachers' capability to use technology, school facilities, difficulties in explaining certain topics through the online platform, limited internet access, cost of internet quota, and support from parents (Lestiyanawati and Widyantoro, 2020). Some remote regions in Indonesia still do not even have access to electricity. While teachers in major cities in Java had proper resources for online learning, teachers in villages, especially outside Java, had to visit their students' homes to give and collect homework because of a lack of access to the internet and digital devices. (Lie et al., 2020). As is suggested by (Putri et al., 2020), to overcome the problem of unstable internet connection, the formal institution needs to do networking with internet providers to support online learning even though it will trigger higher internet bills. All in all, the negative perceptions faced by Indonesian students were: (1) the difficulty to be optimally participating in online learning mode because of the high demand of internet bundles, low network coverage, frequent local power outage; (2) the lack of teachers' feedback; (3) inconsistency of schedule in conducting online class and assignment submission timeline (Tanjung and Utomo, 2020).

2.3 The Indonesian Students' Barriers of Online Learning from Home

The COVID-19 has caused Indonesian schools to have total closures to the difficulty of students getting equal rights in education and welfare. Furthermore, this is school closure as a reason for the public policy to stop the epidemic but also has raised the problem of social crisis among students sharply (Van Lancker and Parolin, 2020). If the Indonesian government does not help to provide equal facilities in fulfilling children's education needs, prolonged school closure could eventually lead to a wide disparity in learning opportunities and a significant gap in accessing education outcomes between wealthy and impoverished families (Kristyanto et al., 2021). Children and adolescents who are physically active will find it difficult to confine their activities at home. Schoolwork and other extracurricular activities have been implemented online, which raises concerns about children becoming less physically active, having much longer screen time and irregular sleeping patterns, eating more unhealthy diets, and getting less social interaction with peers during the social distancing period. All of these situations will have potential effects on the physical and mental health of children and the well-being of the family system (Kaligis et al., 2020).

Online learning is judged not to provide convenience for students (Febrianto, 2020). Based on the previous research (Irawan et al., 2020; Lestiyanawati and Widyantoro, 2020; Wargadinata et al., 2020), the impact of Indonesian students on online learning during the COVID-19 pandemic, namely the unmotivated students, limited internet access, low-income parents to provide internet quota packages, emotional disturbances caused by too many assignments, the inadequate school facilities in supporting e-learning., and the difficulties of teachers in explaining the material also appeared as the impact of e-learning. The majority of Indonesian students (73%) felt difficulty doing the assignments from the teachers during online learning from home. The time needed to complete heavy tasks is generally short, which is around 1-3 hours (44.1% of respondents); around 3- 6 hours (34.2%); and more than 6 hours to a day (21.6%). Instead, Indonesian students are burdened by the variety of assignments given to them by their lecturers, while the completion time is very short (Tedja, 2020).

Another problem is that some students' parents and students do not have computer or android devices (Wahab and Iskandar, 2020). The previous research (Nashruddin et al., 2020) confirms that some students live in remote rural areas that are not covered by the internet. In addition, their cellular network is sometimes unstable due to the geographical location, which is quite far from the signal coverage. This problem also occurs in many students who take online learning, so the implementation is less effective.

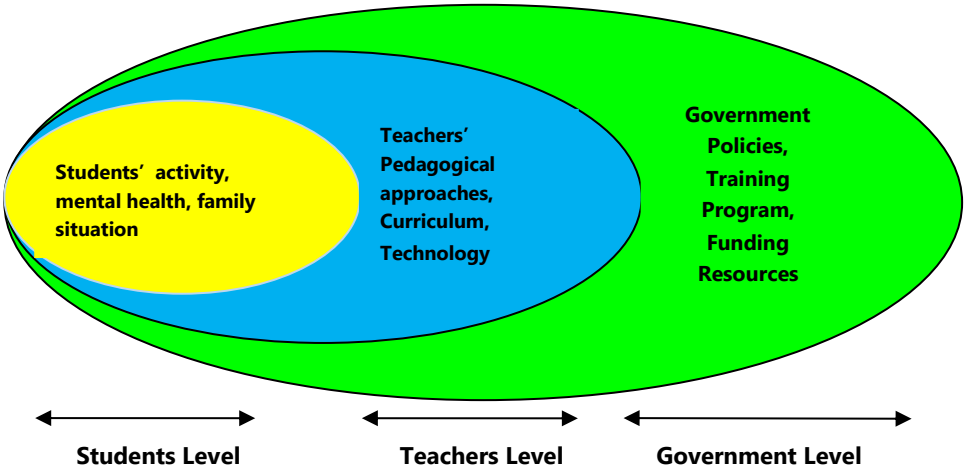

Figure 1. The Three Framework of Indonesian Education

3. Methodology

This study used a mixed-method approach, which was a qualitative and a quantitative approach. The goal of mixed-method research is that a combination of quantitative and qualitative approaches provides a better understanding of research problems and complex phenomena than either approach alone. The reason for using the mixed approach was to establish the generalizability of the study, which was important for validity, to use various perspectives to reflect the study and to identify unexplained results or insufficient data through problem-solving (Cassell et al., 2017).

The target sample of this study was teachers and students of Indonesian K-12 schools in North Sumatera, which was involved 73 Indonesian teachers in 4 elementary schools, 77 Indonesian teachers in 4 junior secondary schools, and 122 Indonesian teachers in 4 senior secondary schools. The total of students in this research was 1058 Indonesian students in 4 elementary schools, 1066 Indonesian students in 4 junior secondary schools, and 1864 Indonesian students in 4 senior secondary schools. The total sample was 272 Indonesian teachers and 3988 Indonesian students. The profile of Indonesian teachers can be seen in Table 1.

Table 2. Demographic Information of Indonesian Teachers (N= 272)

Attributes		F	%
Gender	Male	107	40%
	Female	164	60%
Age	Under 25 years	48	18%
	26-30 years	64	23%
	31-40 years	76	28%
	41-50 years	65	24%
	Over 50 years	19	7%
Teaching experience	Less than 1 year	35	13%
	1-5 years	72	26%
	6-10 years	87	32%
	11-15 years	53	19%
	Over 15 years	25	10%
Education	Bachelor degree	259	95%
	Master degree	13	5%
Grade levels of teaching	Elementary school	73	27%

	Junior high school	77	28%
	Senior high school	122	45%
Have computer skill	Poor	97	35%
	Adequate	89	33%
	Good	54	20%
	Excellent	32	12%
Employment status	Permanent	247	90%
	Supply or substitute	25	10%
Hours spent on the internet	1-3 hours	5	2%
	4-6 hours	18	7%
	6 hours or more	249	91%
Had the Covid-19 vaccine	Yes	134	49%
	No	138	51%

This study used an online questionnaire to gather the data, and the questions were related to online teaching-related questions in the COVID-19 era. The four criteria stated by Lincoln and Guba (1985) were referred to check the data trustworthiness, including credibility, transferability, dependability, and confirmability. Our study used conceptual connectivity so that the findings were more like to be viewed as credible or valid by others. If it was carried out by another researcher, the outcomes would be the same. (Butt, 2015). This study established credibility through persistent observation, peer debriefing, referential adequacy, and member checking. The researcher and peer debriefing, who was educationally prepared at a similar level in this study, discussed the data and findings to capture the essence of the phenomenon being studied. In addition, the participants were allowed to check and comment, and all comments and changes in Google form were saved (Schmidt and Brown, 2014). Our study checked the previous research and checked for comparability and similarity, and the discrepancies were resolved to ensure data stability over time (Stommel and Wills, 2014). Confirmability of findings indicated that the data accurately represent the participants' information, and the interpretations of this data were not invented by the researcher (Kiwi, 2018). Any respondents' information will not be used for personal benefits or negatively impact any stakeholder. The participants signed a consent form giving their permission for the data they supplied to be audio-recorded, transcribed, and analyzed. Participants were also made aware of the ethical protocol; the collected data will not be used to explore the anonymity of any respondents and will only be used to achieve the purpose of the research (Gardner, 2016).

4. Results and Discussion

4.1 The Result of the Three Framework of Indonesian Education

The analysis of qualitative and quantitative data gathered from the present study and teachers' surveys is presented below.

Table 3. The Challenges in Indonesian Education Response during Online Learning in COVID-19

Levels	Attributes	Elementary School (F=73)	Junior Secondary School (F=77)	Senior Secondary School (F=122)
Government Level:	Anxiety about COVID-19	73	77	122
Indonesian government		(100%)	(100%)	(100%)
policies	School closure	73	77	122
		(100%)	(100%)	(100%)
	Social distancing policy	73	77	122
		(100%)	(100%)	(100%)
	Lack of managing online learning	56	52	83
		(76%)	(67%)	(68%)
	Difficulty to teach students in rural areas	50	62	76
		(68%)	(80%)	(62%)

	Difficulty to arrange online learning curriculum	66 (90%)	70 (90%)	112 (91%)
	Shared two-way communication to Indonesian teachers about how to prevent COVID-19	65 (89%)	65 (84%)	105 (86%)
	Many unprepared Indonesian teachers to conduct online learning	70 (95%)	67 (87%)	110 (90%)
	Developing a good online learning module with Indonesian curriculum standard	73 (100%)	77 (100%)	119 (97%)
Government Level: Funding and resources in remote education	Expensive internet quota fees	73 (100%)	77 (100%)	122 (100%)
	Lack of information technology (IT) infrastructure	45 (61%)	65 (84%)	104 (85%)
	Students were unable to pay tuition fees	68 (93%)	54 (70%)	109 (89%)
Government Level: Health concern	Hygiene problems	52 (71%)	66 (85%)	106 (86%)
	Worried about academic delay	69 (94%)	71 (92%)	98 80%)
	Worried about loss social contact	48 (65%)	52 (67%)	87 (71%)
	Anxiety and panic exposure	73 (100%)	74 (96%)	115 (94%)
	Back pain and headache during online learning	43 (58%)	43 (55%)	98 (80%)
	Lower immunity because of workloads	67 (91%)	48 (62%)	97 (79%)
Government Level: Support and training to teachers and students	Preparing online material teaching consumed much time	73 (100%)	74 (96%)	113 (92%)
	Difficulty in measuring students' understanding of online learning	73 (100%)	66 (85%)	116 (95%)
	Difficulty to gain students' attention	65 (89%)	65 (84%)	107 (87%)
	Difficulty to stimulate reading motivation to students	63 (86%)	68 (88%)	103 (84%)
Teacher Level: Teachers' pedagogical approaches for remote education	Less curriculum approaches	73 (100%)	73 (94%)	116 (95%)
	Lack of skills in using technology	45 (61%)	45 (58%)	87 (71%)
	Lack of digital literacy	53 (72%)	44 (57%)	79 (64%)
	Lack of online textbook resources	43 (58%)	43 (55%)	65 (53%)
	Missed the physical presence of students and the ability to read body language and expressions to figure out	68 (93%)	52 (67%)	64 (52%)

	whether they had understood a concept or not			
Teacher Level: Adaptation of curricula and assessment method	Difficulty in giving objective assessment	69 (94%)	52 (67%)	89 (72%)
	Difficulty to measure each students' learning outcomes	56 (76%)	55 (71%)	98 (80%)
	Difficulty to conduct practical activities based on the lesson	73 (100%)	54 (70%)	119 (97%)
Teacher Level: Technology usage	Limitation on IT mastery	58 (79%)	65 (84%)	97 (79%)
	Low internet connectivity	57 (78%)	70 (90%)	67 (54%)
	Limited data quota	64 (87%)	55 (71%)	119 (97%)
	Teachers' disability in accessing technology	58 (79%)	65 (92%)	72 (59%)
	Students did not computer or laptop to conduct online learning	42 (57%)	57 (81%)	49 (40%)
Student Level: Students' need and motivation	Poor reading abilities in teaching children at elementary school	46 (63%)	0 (0%)	0 (0%)
	Dropped out students of school	49 (67%)	54 (70%)	65 (53%)
	Distracting home environments	61 (83%)	65 (84%)	114 (93%)
	Less concentration because of large class-size	63 (86%)	56 (72%)	98 (80%)
Student Level: Students' task	The workload of online task	70 (95%)	68 (88%)	87 (71%)
	Needed the detailed explanation of the difficult lesson	73 (100%)	64 (83%)	76 (62%)
	Differentiation between theoretical and skill in each student	58 (79%)	58 (75%)	67 (54%)
	Lack of feedback from classmates during online project work	56 (76%)	49 (63%)	87 (71%)
Student Level: Family situation	Dealing with the children's fear of homework	69 (94%)	68 (88%)	122 (100%)
	Did not manage the routine of good hygiene	54 (73%)	67 (87%)	78 (63%)
	Students did not fully participate in online learning	48 (65%)	49 (63%)	119 (97%)
	The absence of students	46 (63%)	56 (72%)	84 (68%)
	Lack of discipline at home learning	67 (91%)	65 (84%)	98 (80%)
	Students' economically disadvantaged family background	70 (95%)	70 (90%)	113 (92%)

Table 4. The Solutions in Education Responses during Online Learning in COVID-19

Levels	Attributes	Elementary School (F=73)	Junior Secondary School (F=77)	Senior Secondary School (F=122)
Government Level: Indonesian government policies	Cooperated with seven free online learning platforms, namely Smart Class, *Ruangguru,* *Sekolahmu,* Zenius, Quipper, *Google Indonesia*, and Microsoft	73 (100%)	77 (100%)	122 (100%)
	Stopped extracurricular activities	73 (100%)	77 (100%)	122 (100%)
	Forming the Covid-19 task force	73 (100%)	77 (100%)	122 (100%)
	Learning from home policy (LFH)	73 (100%)	77 (100%)	122 (100%)
	Provided an online learning sharing platform called *Program Guru Berbagi* to share lesson plans (*Rencana Pelaksanaan Pembelajaran/RPP*) with teachers across Indonesia	73 (100%)	77 (100%)	122 (100%)
	Cancellation of the National Examination (UN)	73 (100%)	77 (100%)	122 (100%)
	TVRI, the state-owned television broadcaster, delivered school materials under House Learning Program for a few months	73 (100%)	77 (100%)	122 (100%)
	Periodically report students' distance learning progress	68 (93%)	65 (84%)	115 (94%)
	llocating ministerial training center dormitories for quarantine, namely at Educational Quality Assurance Council (LPMP) and Center for Teacher and Education Personnel Development and Empowerment (P4TK) throughout Indonesia	73 (100%)	77 (100%)	122 (100%)
	Allowing schools the freedom to spend the national budget allocated to them on items such as laptops and tablets	56 (76%)	45 (58%)	98 (80%)
	Postponed the implementation of the Computer-Based Written Exam *(Ujian Tertulis Berbasis Komputer-UTBK*) and the enrollment for Joint Selection Entrance to State University (*Seleksi Bersama Masuk Perguruan Tinggi Negeri-SBMPTN*) in the academic year of 2020	73 (100%)	77 (100%)	122 (100%)
	Banned religious activities	73 (100%)	77 (100%)	122 (100%)
	The closure of Indonesia's borders for foreign citizen	73 (100%)	77 (100%)	122 (100%)

	Launched a risk-zone map for COVID-19 in Indonesia as 112 regencies and cities were considered were COVID-19 free "green" zones, 188 low-risk "yellow" zones, 157 medium-risk "orange" zones, and 57 high-risk "red" zones	73 (100%)	77 (100%)	122 (100%)
Government Level: Funding and resources in remote education	The use of School Operational Assistance (BOS) to buy internet quota	73 (100%)	77 (100%)	122 (100%)
	The use of conditional cash transfer (*the Family Hope Program*)	73 (100%)	77 (100%)	122 (100%)
	The use of Special Assistance for Staple Food Card program (*Kartu Sembako*)	73 (100%)	77 (100%)	122 (100%)
	The use of Village Fund cash transfer (*Bantuan Langsung Tunai Dana Desa*)	73 (100%)	77 (100%)	122 (100%)
	The use of a Pre-employment card (*Kartu Prakerja*) for unemployment	73 (100%)	77 (100%)	122 (100%)
	Subsidized rice programs (*Beras Sejahtera)*	73 (100%)	77 (100%)	122 (100%)
	Allowed students to postpone school tuition fee payments	73 (100%)	77 (100%)	122 (100%)
	Life insurance for healthcare workers handling the COVID-19 pandemic	73 (100%)	77 (100%)	122 (100%)
Government Level: Health concern	Built local health service	73 (100%)	77 (100%)	122 (100%)
	Tightened Large-Scale Social Restriction (PSBB) policy	73 (100%)	77 (100%)	122 (100%)
	Conducted COVID-19 Rapid Tests (RDT)	73 (100%)	77 (100%)	122 (100%)
	Mass spraying of disinfectant on the road, house, park, schools	73 (100%)	77 (100%)	122 (100%)
	Examined the teachers' health by distributing the Covid-19 vaccines	73 (100%)	77 (100%)	122 (100%)
	Used hand-sanitizer and mask	73 (100%)	77 (100%)	122 (100%)
	A strict health protocols	73 (100%)	77 (100%)	122 (100%)
	Frequently washing hands with soap	73 (100%)	77 (100%)	122 (100%)
	Built the capacity of health workers in health facilities, laboratories, pharmacies and transportation	73 (100%)	77 (100%)	122 (100%)
	Enhanced active case finding, contact tracing and monitoring, quarantine of contacts and isolation of COVID-19 cases	73 (100%)	77 (100%)	122 (100%)
	Improved capacities of ICUs, primary and secondary level hospitals, alternative community health facilities,	73 (100%)	77 (100%)	122 (100%)

	including the provision of medicines and health equipment.			
	Supported the delivery of incentives schemes for the health workers	73 (100%)	77 (100%)	122 (100%)
	Activated the role of School Health Enterprises (UKS) or health service units in tertiary institutions	73 (100%)	77 (100%)	122 (100%)
	Encouraged everyone to consume a balanced diet and pursue a healthy lifestyle to help strengthen individual immune systems	73 (100%)	77 (100%)	122 (100%)
	Supported families to meet their children's nutritional needs	73 (100%)	77 (100%)	122 (100%)
	Placed hand sanitizers in toilets, classrooms, halls	73 (100%)	77 (100%)	122 (100%)
Government Level: Support and training to teachers and students	Developed online learning content in partnership with other schools	73 (100%)	77 (100%)	122 (100%)
	Delivered video lectures about students' activities and assessment of learning	73 (100%)	77 (100%)	122 (100%)
	Collaboration of teachers to build emotional support	73 (100%)	77 (100%)	122 (100%)
	Digital libraries for teachers	73 (100%)	77 (100%)	122 (100%)
	Adequate substitute staffing	73 (100%)	77 (100%)	122 (100%)
Teacher Level: Teachers' pedagogical approaches for remote education	Summarized the lessons from the online education course	54 (73%)	65 (84%)	105 (86%)
	Provided motivational message	73 (100%)	77 (100%)	122 (100%)
	Made online discussion activity	73 (100%)	77 (100%)	122 (100%)
	Documented the pedagogical changes introduced and their impact	54 (73%)	53 (68%)	98 (80%)
	Reviewed online teaching and exam options	73 (100%)	77 (100%)	122 (100%)
	Identified the students who most need support	65 (89%)	66 (85%)	110 (90%)
	Conducted various virtual online training, e.g. using YouTube streaming or web conferencing platforms, such as Skype or Zoom.	73 (100%)	77 (100%)	122 (100%)
Teacher Level: Adaptation of curricula and assessment method	Restructuring the academic calendar to catch-up lesson	73 (100%)	77 (100%)	122 (100%)
	One sheet of the lesson plan	73 (100%)	77 (100%)	122 (100%)
	A sharing forum between several stakeholders in the education fields	73 (100%)	77 (100%)	122 (100%)

	Carrying out education and research during and after the COVID-19 pandemic	45 (61%)	64 (83%)	85 (69%)
	Communication with stakeholders to reduce the amount of curriculum	73 (100%)	77 (100%)	122 (100%)
	Focusing supervisors on effective learning in schools and performance information aligned with curriculum goals	65 (89%)	66 (85%)	110 (90%)
Teacher Level: Technology usage	Used WhatsApp messaging platform to conduct classroom discussions and distribute tasks and school materials	73 (100%)	77 (100%)	122 (100%)
	Teachers' training in IT mastery	73 (100%)	77 (100%)	122 (100%)
	Borrowed school's computers or laptops	45 (61%)	55 (71%)	65 (53%)
Student Level: Students' need and motivation	Gave extra marks for students who got the best result	67 (91%)	66 (85%)	89 (72%)
	Enabled students to monitor their own progress	70 (95%)	65 (84%)	94 (77%)
	Had free time to chat about students' task difficulty	73 (100%)	77 (100%)	122 (100%)
	Ranged online materials based on students' ability	56 (76%)	55 (71%)	87 (71%)
	Gave constructive feedback for students	65 (89%)	56 (72%)	77 (63%)
	Made an online games for students based on lesson	58 (79%)	68 (88%)	76 (62%)
	Expressed the importance of education to students	73 (100%)	77 (100%)	122 (100%)
	Submit a short brief explanation of the lesson after the online session	67 (91%)	61 (79%)	72 (59%)
Student Level: Students' task	Simplified learning objectives	73 (100%)	77 (100%)	122 (100%)
	Supported classmates to participate in online project teamwork	73 (100%)	77 (100%)	122 (100%)
	Broke learning into smaller chunks	73 (100%)	77 (100%)	122 (100%)
Student Level: Family situation	Managing the routine of good hygiene	73 (100%)	77 (100%)	122 (100%)
	Ensured children fully participated in online learning	73 (100%)	77 (100%)	122 (100%)
	Care and support for patients' families affected by the COVID-19	73 (100%)	77 (100%)	122 (100%)
	Balanced parent employment demands and learner needs	45 (61%)	54 (73%)	66 (54%)
	Distributed online resources to help parents engaged in students' learning	43 (58%)	32 (41%)	38 (31%)

	Guidelines through pamphlets, radio, and TV broadcasts on helping students' education	73 (100%)	77 (100%)	122 (100%)

4.2 Indonesian Government Approaches during COVID-19

4.2.1 Cooperation with Online Learning Platforms

Indonesian Ministry of Education and Culture had collaborated with technology-based online learning platforms. It is provided educational resources on-demand, from pre-school to professional training. There were examples of the online source from the Indonesia Ministry of Education and Culture to enable continuity of Indonesia education:

Table 5. The Source of Learning

Sources	Link Website
Learning House by Data and Information Technology for Education and Culture (PUSDATIN) of the Ministry of Education and Culture	https://belajar.kemdikbud.go.id
Educational television by the Ministry of Education and Culture	https://www.useetv.com/livetv/tvedukasi
Digital learning by the Center for Data and Information Technology for Education and Culture (PUSDATIN) of the Ministry of Education and Culture and SEAMOLEC	http://rumahbelajar.id
Face-to-face online program for home learning ambassadors by the Center for Data and Information Technology for Education and Culture (PUSDATIN) of the Ministry of Education and Culture	pusdatin.webex.com
LMS SIAJAR by SEAMOLEC and the Ministry of Education and Culture	http://lms.seamolec.org
Online application for packages A, B, C	http://setara.kemdikbud.go.id/
Teachers share an online platform	http://guruberbagi.kemdikbud.go.id
Digital reading	http://aksi.puspendik.kemdikbud.go.id/membacadigital/
Tutorial video	http://video.kemdikbud.go.id/
Education voice of the Ministry of Education and Culture	https://suaraedukasi.kemdikbud.go.id/
Educational Radio by the Ministry of Education and Culture	https://radioedukasi.kemdikbud.go.id/
Family friends - A source of information and teaching materials on family care and education	https://sahabatkeluarga.kemdikbud.go.id/laman/
Early childhood education teacher room by the Ministry of Education and Culture	http://anggunpaud.kemdikbud.go.id/
Electronic school books	https://bse.belajar.kemdikbud.go.id/
Mobile education - multimedia teaching materials	https://m-edukasi.kemdikbud.go.id/medukasi/
Equality Education Module	https://emodul.kemdikbud.go.id/
Source of teaching materials for elementary school, junior high school, senior high school and vocational students	https://sumberbelajar.seamolec.org/
Online courses for teachers from SEAMOLEC	http://mooc.seamolec.org/
Online classes for students and college students	http://elearning.seamolec.org/
Open-access digital books	http://pustaka-digital.kemdikbud.go.id/

4.2.2 Health Support for Teachers and Students

In late March 2020, the Ministry of Health issued Minister of Health Decree No. HK.01.07/Menkes/446/2021 on the use of Rapid Diagnostic Test Antigen in Diagnosing COVID-19. The Decree allows the use of Rapid Diagnostic Test Antigen or RDT-Ag in diagnosing COVID-19 under certain circumstances. Other the Ministry of Education and Culture policies were: (1) Activated university medical facilities such as laboratories and hospitals throughout Indonesia as COVID-19 Test Center, (2) allocated ministerial training center dormitories for quarantine, namely at Educational Quality Assurance Council (LPMP) and Center for Teacher and Education Personnel Development and Empowerment (P4TK) throughout Indonesia, (3) COVID-19 case management training for 15000 medical and health student volunteers throughout Indonesia, (4) Activated the role of School Health Enterprises (UKS) or health service units in tertiary institutions by coordinating with local health service facilities, (5) Delivered national guidance on the prevention and control of COVID-19 in schools, such as early detection of suspected cases, the physical distancing of at least 1 metre, hand-washing facilities, cleaning and disinfection, adequate ventilation, and spacing of desks or grouping of children in the classroom.

4.2.3 Financial Resources for Teachers and Students

Indonesia's Education and Culture Ministry had announced a raft of emergency measures for schools to help alleviate the financial burden on students during the COVID-19 pandemic. These policies allowed students to postpone school tuition fee payments, lowering the tuition fee rate and charging only half the fee for final-year students. Moreover, the Ministry of Education and Culture adjusted policy on the flexible use of School Operational Assistance (BOS) and Educational Operational Assistance (BOP) to meet school needs during the pandemic. This policy referred to the two regulations, namely: (1) Minister of Education and Culture Regulation Number 19 of 2020 on Amendment to the Regulation of the Minister of Education and Culture Number 8 of 2020 on Technical Instructions for Regular School Operational Assistance, and (2) Minister of Education and Culture Regulation Number 20 of 2020 on Amendment to the Regulation of Minister of Education and Culture Number 13 of 2020 on Technical Instructions for Non-Physical Special Allocation Fund for Operational Assistance for the Implementation of Early Childhood Education ad Equivalency Education for the 2020 Fiscal Year. School Operational Assistance (BOS) funds used to purchase internet data packages and paid online education services for teachers and students to support learning from the home policy during the COVID-19 emergency period.

The Ministry of Education and Culture Ministry also provided monthly internet quota subsidies for students and teachers through mobile-phone numbers registered with Dapodik and PD-Dikti. Internet data quota distribution was carried out for four months, from September 2020 to December 2020. The details of internet quota subsidies based on Secretary-General Regulation Number 14 of 2020 concerning Technical Guidelines for internet data subsidy in 2020:

Table 6. The Internet Quota Subsidy

Category	Capacity	Capacity Distribution		Subsidy Duration
		General Internet Quota	Study Internet Quota	
Internet data quota package for Early childhood education (PAUD) students	20 GB/month	5 GB/month	15 GB/month	4 month
Internet data quota package for Elementary school, Junior secondary school, and Senior secondary school	35 GB/month	5 GB/month	30 GB/month	4 month
Internet data quota package educators at Elementary school, Junior secondary school, and Senior secondary school	42 GB/month	5 GB/month	37 GB/month	4 month
Internet data quota for university students and lecturers	50 GB/month	5 GB/month	45 GB/month	4 month

As a result of the COVID-19 pandemic, the government estimated that 1.8 to 4.8 million people might fail to poverty in 2020, while 3 to 5.2 million lost their jobs. Before the crisis, the government promoted a pre-employment card (*Kartu Prakerja*) to promote training for adults. Each recipient was to get IDR 600,000 each month for four months. IDR 150,000 if participants filled in three surveys and IDR 1 million to pay for optional training (OECD, 2021). For Indonesian families, the Government of Indonesia (GoI) launched the Conditional Cash Transfer Program (*the Family Hope Program/Program Keluarga Harapan*), which targeted low-

income families and micro-entrepreneurs to reduce inter-generational poverty in the long-term by investing in children's health and education. The program provides a benefit level between US$103 until US$726 (IDR 1,450,000 until IDR 9,750,000) for each family in one year, depending on the child's education level. Moreover, the Indonesian government had allocated 22.4 trillion in the Village Fund program to distribute cash transfers for 12.3 families affected by the COVID-19 crisis, according to Villages, Disadvantages Regions and Transmigration Ministerial Regulation Number 6 of 2020. The government provided IDR 600,000 a month for three months to families that met certain criteria, including those whose members had lost their jobs and did not receive assistance from the Family Hope Program and the Staple-Food Card program. For food security, the Indonesian government implemented the *Special Assistance for Staple Food Card program* (*Kartu Sembako*) from the Central Government to buy monthly basic food. The amount was IDR 14 each month for 3 months. In addition, the Ministry of Health has issued Minister of Health Decree Number HK.01.07/MENKES/4239/2021 on incentives and life insurance for healthcare workers handling the COVID-19 pandemic. The purchase of medical equipment such as test kits and ventilators would be prioritized and incentives for medical workers, including doctors and nurses.

4.2.4 Banned Religious Activities and Public Activity

First, the Indonesian COVID-19 Task Force had issued Circular Letter Number 13 of 2021 on the ban against travelling to hometowns to control the spread of COVID-19 during the Islamic holy month of Ramadhan. This circular letter was effective from 6 May 2021 until 17 May 2021. Second, the COVID-19 Task Force had issued Circular Letter Number 9 of 2021 on the establishment of command posts for COVID-19 handling in the implementation of public activity restriction on the village/sub-district level. The circular followed previous policy announcements regarding the government's COVID-19 public activity restriction on the micro-level in which villages/sub-district chiefs must form task forces to implement and enforce COVID-19 mitigation protocols such as mask-wearing, hand-washing and social distancing. This Circular was effective until February 22, 2021. Third, the Jakarta administration has issued Jakarta Governor Decree No. 959/2020 on the implementation of Large-Scale Social Restriction (PSBB) in the handling of COVID-19 in Jakarta. The decree stipulates revoking the governor's transitional PSBB policy in reverting to the PSBB policy based on Jakarta Governor Regulation No. 88/2020, which amends Governor Decree No. 33/2020 issued in April the implementation of the PSBB policy. The PSBB status started in September 2020 and might be extended to December 2021.

4.2.5 Vaccine Program

Indonesia President Joko Widodo had issued Presidential Regulation Number 14/202 on the Amendment to Presidential Regulation Number 99 of 2020 on vaccine procurement and vaccination in response to the COVID-19 pandemic. The regulations amended a number of provisions of the previous regulation, such as the need for a CPOB (Good Manufacturing Practices) certificate for appointed institutions. The government would arrange for the provision, distribution and vaccination process for the COVID-19 vaccine from 2020 to 2022. On 3 December 2020, The Minister of Health communicated the six types of vaccines that have been determined for use in Indonesia, namely vaccines produced by Bio Farma, AstraZeneca, Sinopharm, Moderna, Pfizer - BioNTech, and Sinovac Biotech. The use of the COVID-19 vaccine could only start following a distribution permit or an emergency use authorization from the Food and Drug Monitoring Agency (BPOM). The vaccines procurement would be carried out by the Ministry of Health and the Ministry of State-owned Enterprises. A total of 1.2 million doses of the COVID-19 vaccine produced by Sinovac arrived in Indonesia on 6 December and were stored at Bio Farma's facilities.

Table 7. The Priority of Indonesian People who were Vaccinated

Category	Total
Frontline workers from health workers and contact-tracing paramedics to military and law enforcement personnel	3.5 million people
Religious and community leaders, local authorities at district, village, community and neighbourhood units	6 million people
Teachers and lecturers at various levels of education.	More than 4 million people
Government officials and legislative council members	2,306,689 people
Members of the Healthcare and Social Security Agency (BPJS Kesehatan)	More than 3 million people
The general public	More than 57 million

4.3 Indonesian Teachers Approaches during COVID-19

4.3.1 Teachers' Perceptions of Technology Hardware or Internet Quality

Table 8. The Applications Used by Teachers in Online Learning

Attributes		F	Percentage
Devices	Computer	90	33%
	Laptop	252	92%
	Tablet	17	6.25%
	Smartphone	265	97%
Live streaming	Zoom	270	99.26%
	Google meeting	168	61%
	Youtube live streaming	264	97%
Material presentation	Microsoft PowerPoint	253	93%
	Microsoft word	272	100%
	Slide share	198	73%
File sharing	WhatsApp group	272	100%
	Edmodo	98	36%
	Email	254	93%
	Google classroom	234	86%
	Google drive	174	64%
	Recorded videos uploaded on Youtube	268	98.52%
Virtual Classroom	Kemendikbud's Learning House *(Rumah Belajar)*	263	96%
	Ruang Guru	243	83%
	Quipper	195	71%
	Sekolahmu	132	48%
	Zenius	124	45%
	KelasKita	122	44%
Online quiz	Quizzes	80	29%
	Google form	263	96%
	Kahoot!	78	28%
	Poll everywhere	120	44%
Communication with students	WhatsApp	272	100%
	Telegram	56	20%
	Live chat Youtube	156	57%

The COVID-19 pandemic enhanced the role of remote working, e-learning, video streaming, and so on a broad scale. The most popular remote collaboration tools are private chat messages, followed by two-participant calls, multi-person meetings, and team chat messages (Gonzalez et al., 2020). Various devices preferred by Indonesian teachers for attending online classes were smartphones (97%), laptops (92%), computers (33%), and tablets (6.25%). The majority of Indonesian teachers used Zoom (99.26%), and Youtube live streaming (97%). Teachers used Microsoft PowerPoint (93%) to deliver online lessons and frequently used WhatsApp (100%) to share online materials and communicate with students. The highest percentage of the virtual classroom was Kemendikbud's Learning House *(Rumah Belajar)* (96%). Teachers were frequently used google form (96%) as an online quiz.

4.3.2 The Government Policies that Followed by Indonesian Teachers

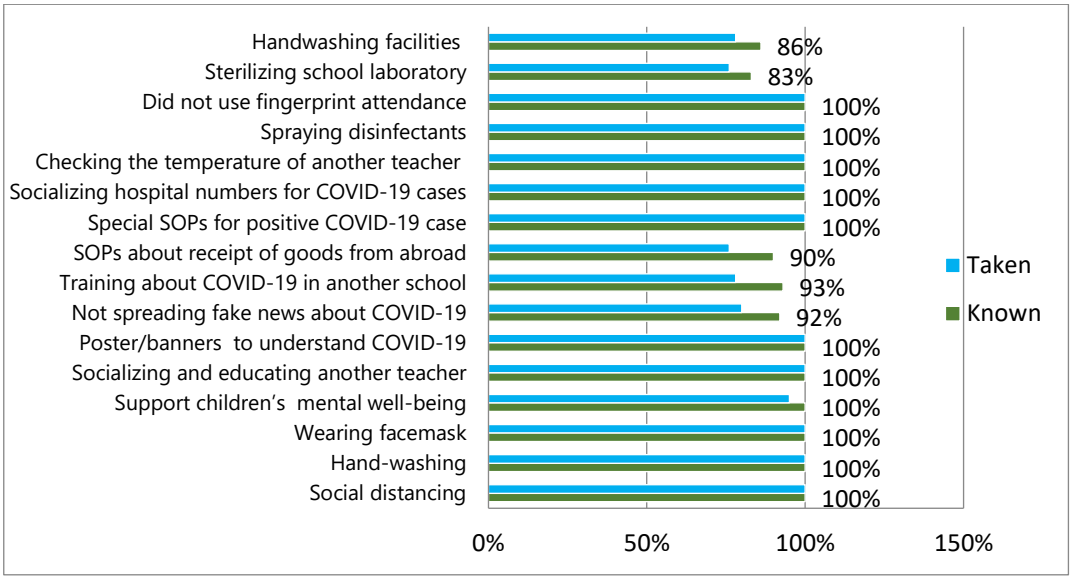

Figure 2. Information Received from Government about COVID-19 Prevention

Figure 2 indicated that the majority of Indonesian teachers (more than 80%) followed the government policy about strict COVID-19 prevention measures to minimize the risk of COVID-19 transmission and infection. The descriptions of Indonesian government policies to enhance hygiene and environmental cleaning in Indonesian schools were: providing hand-washing facilities (86% known and 78% taken), sterilizing school laboratory (83% known and 76% taken), did not use fingerprint attendance (100% known and taken), spraying disinfectants (100% known and taken), checking the temperature of another teacher (100% taken and known), socializing hospital numbers for COVID-19 cases (100 taken and known), Special SOPs for positive COVID-19 case (100% taken and known), SOPs about receipt of goods from abroad (90% known and 76% taken), training about COVID-19 in another school (93% known and 78% taken), not spreading fake news about COVID-19 (92% known and 82% taken), poster/banners to understand COVID-19 (100% known and taken), socializing and educating another teacher (100% known and taken), support children's mental wellbeing (100% known and 95% taken), wearing facemask (100% known and taken), hand-washing (100% known and taken), and social distancing (100% known and taken).

Table 9. The Satisfaction of Teachers about COVID-19 Government Policies

Attributes	F	Percentage
Ensured the continuity of academic learning for students	265	97%
Provided a platform to consult with education stakeholders	272	100%
Ensured teachers and students mental health	243	83%
Ensured the financial budget for students and school	233	85%
Ensured instructions of online learning in books	221	81%
Partnered with online learning classes, such as RuangGuru, Quipper, etc. to provide free online courses	272	100%
Ensured the practical training of ICT mastery for teachers	254	93%
Ensured pedagogical autonomy for teachers	254	93%
Ensured equal learning opportunities for students who lack access to devices and internet connectivity	198	73%

Table 9 indicated that Indonesian teachers were highly satisfied with the role of the Indonesian government to provide a consultation platform with education stakeholders (100%) and online learning class partners (100%), but they were less enthusiastic about equal learning opportunities for students who lack access to devices and internet connectivity (73%). Moreover, teachers were still extremely satisfied with the continuity of academic learning for students (97%), the practical training of ICT mastery (93%), and pedagogical autonomy for teachers (93%). Teachers were very satisfied with mental health continuity (83%), financial

budget for students and school (85%), and instructions of online learning in books (81%).

4.3.3 The Teachers' Perceptions of Students' Academic Progress

Table 10. Types of Students' Assessments

Attributes	F	Percentage
Dialogue and peer assessment	187	68%
Feedback by using live-video conference	154	57%
Pretest or quiz	265	97%
Questionaire	243	89%
Concept map	121	44%
Summary of journal or book	105	38%
Worksheet	139	51%
Portfolio	151	55%
Final team project	161	60%
Discussion or interview with teachers	236	86%
End of unit or chapter test	224	82%
Microsoft Powerpoint Presentation	261	95%
Electronic chat forum	197	72%
Online course assessment	254	93%
Teacher marked assignment by email	143	52%
Recorded video in YouTube	268	98%
Checklist	247	90%

Several researchers defined academic performance as an exhibition of knowledge acquired or skills developed due to school subjects, which were evaluated through test scores or grades assigned by the teachers of subjects (Adediwura and Tayo, 2007; Kimani et al., 2013). Based on the result of the questionnaire, the most common assessment used by Indonesian teachers were recorded video on Youtube (98%), pretest or quiz (97%), Microsoft PowerPoint presentation (95%), online course assessment (93%), and checklist form (90%). Concern about what the teacher did to measure students' academic progress was stated by teacher 1, "*Teachers should provide interesting learning materials.*" Teacher 2 stated, "*Teachers should ask the students' parents to accompany students in online learning.*" Teacher 3 stated, "*Teachers should provide students' support in conducting online learning.*"

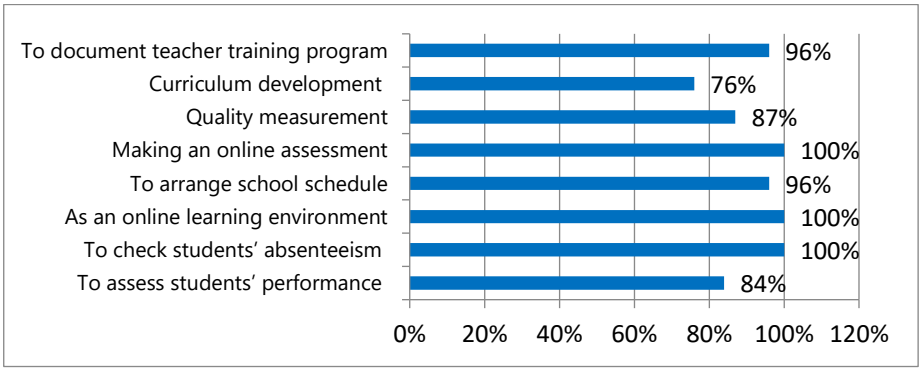

Figure 3. The Use of Data Resources in Online Learning

In addition to supporting the data of the type of students' academic progress, the most common data that Indonesian teachers used during online learning in Covid-19 were to make an online assessment (100%), to make online learning environment (100%), to check students' absenteeism (100%), to document teacher training program (96%), and to arrange school schedule (96%) as shown in figure 3. As a result, the teachers' satisfaction after the online learning program could be classified as very effective (63%), somewhat effective (30%), and not effective (7%), as could be seen in figure 4.

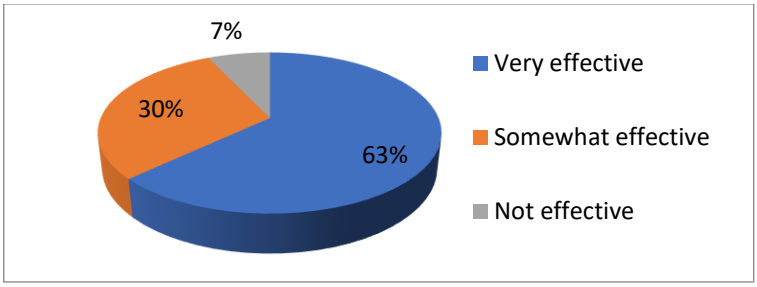

Figure 4. Teachers' Satisfaction After Online Learning Training Program

4.4 Indonesian Students Responses during Online Learning in Covid-19

4.4.1 Students' Online Learning Activity

Table 11. Students' Online Learning Activities

Attributes	F	Percentage
Meeting session with the teacher in a live session by using Zoom or Youtube	3988	100%
Listened to educational programs on TV/internet	2996	75%
Used online/mobile learning application to send and to receive a message	3988	100%
Reading books	3784	94%
Completed assignments that were given by the teacher	3457	86%
Used chat box to discuss the lesson	3672	92%
Used google forms to give feedback at the end of the lesson	3922	98%
Used game educational as a quiz	3882	97%
Used videos to assess the performance	3747	93%
Sent an assignment via WhatsApp or email	3751	94%
Took an online coursework	3428	85%
Downloading, uploading or browsing material from the website	3988	100%

Over time, in its development, online learning involved the presentation and delivery of material using the Web and involved students who used the Internet to access learning materials, had an interaction with content, instructors, and other students (Jones and Sharma, 2020). The fifth highest percentage of students' online activities were meeting sessions with a teacher in a live session by using Zoom or Youtube (100%), used online/mobile learning application to send and to receive a message (100%), downloading, uploading or browsing material from the website (100%), used google forms to gave feedback at the end of the lesson (98%) and used game educational as a quiz (97%).

4.4.2 Students' Performance during Online Learning

Table 12. The Elements to Improve Students' Performance

Attributes	F	Percentage
Quality of the education platform	1652	41%
The feedback from my classmates and the teacher by using the chatbox	2438	61%
Quiz in the form of educational games	3423	85%
Project-work online in a team	2936	73%
Lectures notes in Zoom meeting	3724	93%
Exam review list	3323	83%

Making a video or presenting a presentation by using Microsoft Powerpoint media	3655	91%
Sending and receiving the valuable lessons through Whatsapp or email	2989	74%

Students, especially those at a young age, learned at different rates, responded to learning differently, and their abilities to understand instructions and self-directed learning were varied (Lesaux et al., 2015; Reddy, 2018; Van Deur, 2008). The fifth highest percentage of students' approaches to self-directed learning was using lectures notes (93%), making a video or presenting a presentation by using Microsoft Powerpoint media (91%), using quizzes in the form of educational games (85%), sending and receiving the valuable lessons through Whatsapp or email (74%), and project work in a team (73%). As a result, Indonesian students' participation during online learning discussion could be classified as often enough (43%), not very often (48%), and depending on the received feedback (3%), as could be seen in figure 5.

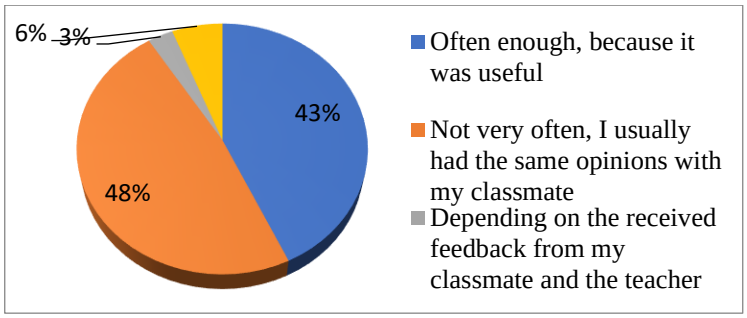

Figure 5. The Participation in Online Learning Discussion

4.4.3 Students' Mental Health and Family Situation

Table 13. The Students' Solutions to Improve Mental Health

Attributes	F	Percentage
Limit my family's exposure to the fake news about COVID-19 on social media	2978	74%
Had a relaxing activities	3198	80%
Reading an interesting book	2112	53%
Made a comfortable space for online learning	3122	78%
Created a rhythm schedule for each family	1678	42%
Always ensure food hygiene	3882	97%
Played virtual games	1867	46%
Prayed with family during the COVID-19 pandemic	3877	97%
Practised self-care guide	3214	80%
Followed the instruction of the COVID-19 guide	3799	95%
Learned a new skill by using an online education platform	3423	85%
Had time management to sleep and exercise	3654	91%
Checked up sitting posture regularly while doing online learning	3213	80%
My parents supervised my online learning	1457	36%
Had healthy nutrition and consumed vitamin	3432	86%
Took a break after conducting online learning	3711	93%

Many students across the world were now had a serious psychological impact on their health because of changes in daily routine, including lack of outdoor activity, disturbed sleeping patterns, social distancing, which have affected the mental wellbeing of the

students. The researchers used the 7-item Generalized Anxiety Disorder Scale (GAD-7) as a diagnostic tool for the assessment of anxiety disorders, panic disorders, and social phobia (Lee, 2020; Cao et al., 2020). The fifth highest percentage of students' solutions to improve mental health were always ensured food hygiene (97%), prayed with family during the COVID-19 pandemic (97%), followed the instruction of the COVID-19 guide (95%), and took a break after conducting online learning (93%). Regarding students' mental health in online learning, student 1 stated, "*I felt depressed because I could not see my friends directly.*" Student 2 stated, "*Zoom fatigue could not be avoided. I had not realized that I missed something on my lesson today*." Student 3 stated, "*I could not concentrate learning because of the distraction of my gadget.*" Student 4 stated, "*I had neck pain and headaches because the learning was too long.*" Student 5 stated," *After 30 minutes, my eyes started to feel tired.*" Student 6 stated," *It was hard to do my work and certain assignments at the same times. I was depressed.*"

5. Conclusion

The implementation of distance learning during the COVID-19 pandemic carried out through online learning by teachers in Indonesia experienced various obstacles; even though the teacher had a good understanding of the use of ICT, it was just that the understanding they got in the previous training was only relevant for normal classroom conditions before the COVID-19 pandemic (Tarigan and Stevani, 2020). This result was coherent with our findings of the majority of Indonesian teachers (more than 90%) about the school closure were confusion and stress, interrupted learning, disruption of assessment learning, and lack of technology and internet access (see Table 3). As a result, the Indonesian government offered several policies and education programs to overcome the obstacles faced during online lectures while still paying attention to health protocols during the pandemic (see Table 4, Table 5, and Table 6). The difference between the theory and previous studies of our findings showed that online learning systems using digital platforms in Indonesia K-12 schools could change education's face to be innovative, more effective, and more attractive. These findings proved that 63% of Indonesian teachers agreed with the effectiveness of online learning training programs (see Figure 4) to improve teachers' satisfaction with COVID-19 government policies, such as providing a platform to consult with education stakeholders, cooperating with online learning classes to provide free online courses, ensuring the practical training of ICT mastery for teachers, and many more (see Table 9). During COVID-19, the majority of Indonesian teachers (more than 80%) followed the government policy about strict COVID-19 prevention measures to minimize the risk of COVID-19 transmission and infection in the form of several activities, such as hand-washing, using spray disinfectants, socializing and educating another teacher, social distancing, supporting students, and many more (see Figure 2). These findings also proved that students' performance was improved during self-directed learning through online learning media even though there were some barriers in technology mastery, such as by using the chatbox, quiz form, educational games, project work in an online course, lectures notes, exam review list, video, Microsoft PowerPoint, whatsapp, and email (see Table 12). According to the students' performance, Indonesian students' participation during online learning could be classified as often enough because of the usefulness of media and technology preparation (43%) (see Figure 5). According to the students' mental health, the teachers and the students found several activities to strengthen their self-care during the workload of tasks, such as reading an interesting book, making a comfortable space for online learning, ensuring food hygiene, learning a new skill by using online learning platform, and many more (see Table 13). All these findings proved that the three frameworks of government, teachers, and students level were adapted to the continuous improvement in online teaching and learning context to allow other educational institutions to realize the domains which most people must respond due to the COVID-19 were technological infrastructure, relationships, students' mental health, financial resources, and professional support to reconfigure teachers' training practices. The three frameworks of government, teachers, and students level showed that fully interactive teaching and learning methods posed serious challenges for educational institutions in teacher and student management, teaching and learning monitoring, and evaluation of student learning outcomes. The government had coordinated the actions of different stakeholders to create a user-friendly communication platform, select appropriate learning resources, provide user-friendly learning tools, encourage diverse learning methods, and support flexible learning methods.

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