The adaptability of school principal and teachers in curriculum design and lesson plan at COVID-19 pandemic

Nurhattati[1], Desi Rahmawati[1], Rugaiyah[1], Ahmad Jauhari Hamid Ripki[2], Dirgantara Wicaksono[3]

[1]Educational Management Program, Faculty of Education, State University of Jakarta, East Jakarta, Indonesia
[2]Mathematics Study Program, Faculty of Education, STKIP Kusuma Negara, East Jakarta, Indonesia
[3]Educational Technology, Faculty of Educational, Muhammadiyah University of Jakarta, South Tangerang, Indonesia

Article Info

ABSTRACT

This research departed from the conditions an Islamic elementary school faces in preparing education planning, especially curriculum design and lesson plan required to adapt to changes, especially in the current pandemic conditions. Therefore, this study aimed to know the adaptability of school principal and teachers in curriculum design and lesson plan during the COVID-19 pandemic. This research used a qualitative approach, while the case study method is used. The data collection process is carried out through observation, interviews, and documentation studies. Then for data validity using triangulation. The data analysis includes data reduction, data display, and conclusion drawing. The subjects of this study were the school principal and the teachers at Al-Istiqlal Islamic elementary school Karawang. The results showed that the COVID-19 pandemic became a momentum for teachers and principals to adapt curriculum design and lesson plan in the 21st century. Various efforts are made in preparing curriculum design, namely making the curriculum essential, compiling learning tools, and preparing digital platforms for teaching and learning activities. The adaptability of school principal in designing curriculum is by creating a primary curriculum. Teachers' adaptability in making a lesson plan formulated and designed previously by the curriculum team, school principal, and the head of the foundation. It needs to be done because learning activities during the pandemic have changed the learning process and methods; it requires planning for a new curriculum design and lesson plan.

Corresponding Author:

Nurhattati
Educational Management Program, Faculty of Education, State University of Jakarta
Pascasarjana Building, 13220 Rawamangun, East Jakarta, Indonesia
Email: nurhattati@unj.ac.id

1. INTRODUCTION

The emergence of development and change as a form of innovation in the 21st century requires people worldwide to adapt. In response to the challenges of the 21st century, according to Aquino and Jalagat [1], we need a new vision, paradigm, and skill that includes indicators for three essential skills: learning and innovations skills, information and technology skills, and life and work skills [2]. Those challenges, especially in learning and innovation indicators, are in a knowledge age with an extraordinary acceleration of knowledge improvement. Then, the development of information and communication technology indicators has changed how we view education [3]. So, it must be considered by educational technology developers to develop effective and efficient models by utilizing technology as an assistive learning tool in improving the interaction and continuity of learning and teaching activities [4], [5]. However, it is also still necessary to limit actions and

minimize the risk of harm from the impact of the development of this technological knowledge [6]. Relevant COVID-19, which was declared a pandemic disease by WHO on March 11, 2020, became an international incident whose cases increased significantly [7]. The pandemic has impacted many daily activities from all sectors, but one of the most significant collateral impacts is felt by the education sector [8]. Lockdowns, social distancing, and hygiene practices have impacted learning for all educational institutions worldwide [9]. This situation makes educational institutions prepare all their educational management activities for the pandemic.

COVID-19 in the educational sector impacts educational activity, especially learning. The school requires adapting to the online teaching environment [10]; in line with the impact of COVID-19, the Minister of Education and Culture of the Republic of Indonesia finally issued circular letter number 4 of 2020, which states that the teaching and learning process must be carried out from their respective homes [11]. From those regulations, Indonesia's whole teaching and learning process change and must be ready to imply the rules despite many challenging things. The specific impact on education is vast and quite evident in the face-to-face teaching process that switched to online learning during the pandemic [12]. The implementation of technology is necessary to design, direct and facilitate two-way communication between students and teachers during the learning process [13]. Then the success of online learning can be enhanced by providing a variety of options for students to learn through synchronous or asynchronous classes, which has a vital role in implementing online courses during the COVID-19 pandemic because it can conduct online discussions, instant messaging, and websites in the learning process [14], [15]. Using a combination of synchronous and asynchronous learning can increase effectiveness, access, and acceptability in developing individual potential students. It is done for at least three reasons: pedagogical development, increased access and flexibility, and cost-effectiveness [16]. The flexibility of online learning can enable student success in their learning process.

The main impact of the COVID-19 pandemic has caused students to worry about career-related issues, anxiety, and frustration [17]. In addition, students also have difficulty concentrating and studying [18], thus negatively affecting school achievement and academic achievement [19]. Another problem is the difficulty of getting online during class due to an unstable internet connection [20], causing learning to be less effective. Behavior changes also occur, such as students not turning on their cameras during learning through synchronous methods held via video conferencing. Teachers become "talking to themselves", which happens when students do not depend on their cameras [21]. Long study hours were also a challenge because many students lacked the patience and motivation to sit in front of a screen for long periods. At the same time, students also experience behavioral changes when studying from home. Some students begin to show boredom from isolation, lack of motivation, undisciplined studying, miss school, and their friends, and even feel bored with all the home activities [4]. Another impact is that there are even learners who do not follow the learning from start to finish, causing teachers to feel confused and challenging to assess learners [22].

Even the pandemic also has an impact on parents because they have to face various challenges, starting from the mode of learning from home through virtual; teaching children; unsatisfactory learning outcomes of the child; family financial difficulties during the implementation of the lockdown; struggling with learning to use and provide technology such as smartphones; and also face personal issues about health, stress, and learning styles [23]. To overcome the impact of COVID-19 on the learning process, a curriculum design and lesson plan are needed that can be used to face this pandemic era. Besides that, from all the negative impacts of COVID-19, there is a positive thing that educational institutions can develop innovations in the learning process and can help students and parents in facing this pandemic.

The transition to online teaching during the COVID-19 school lockdown poses challenges for teachers and schools worldwide [10]. Turning face-to-face learning online requires many lesson plan modifications such as learning methods, schedules, and activities [24] because lesson plan is a crucial roadmap guiding the teacher before the implementation of the lesson [25]. From this pandemic, school principal and teachers must challenge themselves to adapt and take advantage of this opportunity to transform education with innovations and new goals with optimism [26]. School principal must be prepared for any situation, and this can be expressed in a variety of ways, including "flexible", "adaptable", "agile", and "versatile" [27]. Teachers also can innovate to create a learning atmosphere that is not boring and effective in terms of the knowledge transfer methods used. Changes in the behavior of both teachers and students are needed so that educational goals can be realized optimally. Then educational institutions also need to make their distance learning innovations more effective and efficient [28]. The most crucial role of school principal and teachers must be ready to adapt in pandemic times for designing curriculum and lesson plan. Schools must be prepared with curriculum design that can adapt to the needs in the field, and teachers must be able to improve competence in designing education and mastering various innovative learning models [29]. Therefore, schools must have school planning [30] that is adaptive to existing changes, both for now and for the foreseeable future.

In connection with the explanation, curriculum design and lesson plan are an essential concern for school principal and teachers. Therefore, the research questions are: i) How adaptability of school principal in designing curriculum during the COVID-19?; and ii) How adaptability of teachers in making lesson plan during

the COVID-19 pandemic? This research will be focused on knowing the adaptability of school principal and teachers in curriculum design and lesson plan the COVID-19 pandemic. Because learning activities during the pandemic have changed the learning process and methods, it requires planning for a new curriculum design and lesson plan. This research provides examples of curriculum design and lesson plan for adapting to the COVID-19 pandemic.

2.   RESEARCH METHOD

This research uses a qualitative approach, while the case study method is used. The research was conducted at Al-Istiqlal Islamic elementary school, Karawang, Indonesia. This study aims to provide examples of how curriculum design and lesson plan to other schools as a solution to face the COVID-19 pandemic. The data collection process is carried out through observation of the curriculum design process and lesson plan process, and the interviews with school principal, 29 teachers, vice-principal of curriculum, educational research and development of foundation and curriculum development teams. Then, the last data collection of this research is documentation studies related to curriculum and learning documents. Data validity for this research is triangulation. Triangulation is supposed to support a finding by showing that independent measures of it agree with it, or at least, do not contradict it [31]. Then for data analysis, according to Miles and Huberman [32] can be define as consisting as three current flows of activity: data reduction, data display, and conclusion drawing/verification.

In this research, the researcher uses Miles and Huberman's theory to analyze the data, so there are three steps to do; the first is data reduction, which becomes the first steps to do in analyzing the data in this research. Data reduction refers to selecting, focusing, simplifying, abstracting, and transforming the data in written-up field notes or transcripts. In the second step, data display is an organized, compressed assembly of information that permits conclusion drawing and action. Then the third conclusion drawing is the step after finishing doing data reduction and data display, in this step the researcher concludes the result of the research based on the research problems and deixis theory that are used. Quality criteria for all qualitative research must have credibility, transferability, dependability, and confirmability [32].

3.   RESULTS

3.1. School principal' adaptability in curriculum design during the COVID-19 pandemic

The COVID-19 pandemic has forced teachers and students to adapt to existing conditions. Therefore, proper planning is needed, especially in curriculum and lesson plan to achieve the competencies given to students. Based on the results of observation, interviews, and questionnaires, here are some things found at the time of the implementation of curriculum design and lesson plan, then the efforts made by school principal and teachers in adapting to the changes caused by the COVID-19 pandemic. We conducted an in-depth interview with the school principal while maintaining health protocols and keeping our distance. We asked about the planning and implementation of the curriculum used during distance learning. Based on the results of the interviews that have been conducted, it is revealed that:

> "*As a school principal, adaptability made in the face of changes in the learning process during the COVID-19 pandemic makes the curriculum independent. We do this as school professionals.*" (Translated from School Principal, 2021)

In relation to what was disclosed, the vice-principal for curriculum also revealed:

> "*Initially, we had difficulty compiling a learning curriculum during the COVID-19 pandemic. Moreover, there is no guide that we can use as a reference. So, we designed the curriculum by adjusting the needs of students, which we call the essence curriculum; this curriculum is a simplification of the learning process that follows the direction of a joint decree by the minister of education culture, research, and technology. Therefore, we are trying to create a curriculum that can facilitate students in distance learning.*" (Translated from vice-principals for curriculum, 2021)

Based on the interviews, Al-Istiqlal Islamic elementary school created a standalone curriculum following the 2013 curriculum, where the curriculum is made to adjust to the circumstances at the time of the pandemic, which aligns with government policies. The curriculum designed by Al-Istiqlal Islamic elementary school to adjust the needs of learners is called the Essence Curriculum, which in this curriculum simplifies the learning process and follows the direction of the Joint Decree of the Minister Education Culture, Research, and Technology [33]. Therefore, the curriculum is designed to facilitate students' participation in learning activities during pandemics by reducing time allocation so that the learning process, assessment, and learning media also

change without eliminating the essence of learning [34]. Likewise, they are trying to adapt to government policies in online learning by combining emergency curriculum with independent curriculum, trying to coexist with technology, and socializing with teachers and parents to be literate with technology [35]. Learning media used during pandemics to keep teaching and learning activities running include Zoom Meetings, editing learning videos, and e-classroom by LMS Moodle [36]. Efforts made to face learning during the COVID-19 pandemic by designing a curriculum, as stated by vice-principals for student affairs:

> "*To increase the motivation of students to learn during the COVID-19 pandemic, we are preparing a curriculum that is carried out with various parties, namely foundations, research and development, curriculum teams, and teachers' boards. In this case, the curriculum design developed is prepared to meet the needs during the pandemic period and a plan that will be prepared for the next 1-2 years.*" (Translated from vice-principals for student affairs, 2021)

From the previous statement, it was also reinforced again by the vice-principals for curriculum who stated that:

> "*This curriculum plan We designed through various stages by the curriculum team and then given to R&D so that it can be given direction and improvements so that it can be socialized to teachers and parents of students.*" (Translated from vice-principals for curriculum, 2021)

With the curriculum design that has been made, the vice-principals for facilities and infrastructure revealed:

> "*Then, we also set up an e-classroom for online teaching and learning activities; with this platform, teachers and students can use one integrated platform in conducting teaching and learning activities.*" (Translated from vice-principals for facilities and infrastructure, 2021)

The interview results showed that the school principal cooperated in designing the curriculum during the COVID-19 pandemic. However, in designing the curriculum, it must adjust to the existing conditions during the COVID-19 pandemic.

3.2. Teacher's adaptability in making lesson plan during the COVID-19 pandemic

The adaptation made by teachers in lesson plan during the COVID-19 pandemic is to apply the curriculum design made by school principal into the lesson plan by integrating the basic competencies that students will achieve. In relation to the explanation, vice-principals for curriculum revealed that:

> "*The teachers have to adapt to the conditions of the COVID-19 pandemic is the essential curriculum made by the school principal translated into a lesson plan. Thus, reviewing what students will address following the purpose of learning.*" (Translated from vice-principals for curriculum, 2021)

Then based on the previous statement, the teacher before making a lesson plan needs to do several things, as stated by the school principal.

> "*To minimize the obstacles in distance learning, teachers make a lesson plan flow with the curriculum team. Then the results of the formulation of the lesson plan are discussed together with the research and development section. Finally, further discussions were held with the head of the foundation to produce a mutual agreement on the learning plan.*" (Translated from school principal, 2021)

Based on the results of the interview, it can be known that the flow of making lesson plan during the COVID-19 pandemic are: i) The curriculum team formulates the essential curriculum; ii) The results of the curriculum formulation are discussed with R & D, curriculum representatives, and the head foundation until it produces a mutual agreement about essential curriculum; iii) Then the formulation of the essential curriculum becomes a guideline for teachers to make lesson plan according to their respective grade levels.

Based on the interview results, it was found that teachers continue to try to formulate a lesson plan to facilitate distance learning. Therefore, in the implementation of learning, teachers use virtual lecture methods, Q & A, learning videos made by themselves, using learning media in the form of Zoom Meeting application, WhatsApp, e-classroom, and even YouTube. It is due to adjusting student quotas and student learning conditions at home. In addition, teachers continue to interact with students and parents through the WhatsApp application, Zoom Meeting held once a week, and chat discussions in the e-classroom. Furthermore, it can be seen in Table 1 how the learning design of various eras.

Table 1. Learning design

Normal	Pandemic	Transition era	New normal
− Required to come to school	− Study at home (online)	− Using a blended learning system	− Required to come to school
− Washing hands	− Using the zoom application	− Full day duration from 07.00 to 12.00	− Washing hands
− Full day duration from 07.00 to 15.00	− Using WhatsApp	− Enter school 5 days	− Duration of full day time from 07.00 to 15.00
− Enter school 5 day	− Using e-classroom	− Duration of class hours 30 minutes per subject	− Enter school 5 days
− Duration of subject time according to government regulations	− Using YouTube	− Organizing excursions with health protocols	− Duration of time subjects return to normal
− Extracurricular activities are held with a maximum	− Duration of time 07.00 to 10.00	− Organizing worship together with health protocols	− Extracurricular activities are held with a maximum
− Organizing worship together	− Enter school (online)		− Organizing worship together
− Canteen services are open	− Five days the duration of the subject is adjusted to the conditions		− Canteen services are open
	− Extracurricular activities are eliminated		

4. DISCUSSION

Based on the research results, with the COVID-19 pandemic, there was a migration from conventional learning, namely face-to-face, to online learning [22]. This research describes the curriculum design and lesson plan must be able to adapt to pandemic conditions. Various challenges exist, such as how thinking patterns, skills to innovate and mastery of information media, and mastery of life skills is something that needs to be done. Based on the results of curriculum-related research, the reality is that the emphasis is on what students can do with knowledge rather than what units of knowledge they have. It shows that students experiencing distance learning due to the COVID-19 pandemic have 21st-century skills [37]. Therefore, all students' school experiences improve their abilities and strategies in critical and creative thinking. Students are also directed to solve problems, cooperate with others, communicate well, write more effectively, read more analytically, and conduct research to solve problems. Nevertheless, with the COVID-19 pandemic, adaptability is important for school principal and teachers because it will guide them in dealing with various uncertainties in work [38]. Adaptations made by school principal and teachers can go well because there are other supporting factors, both intrinsic and extrinsic. The intrinsic include emotional intelligence [39], and self-efficacy [38], [39]. Meanwhile, external factors include the role of teacher facilitators [39]; in this case, the school principal who can organize the teachers and student parents.

In curriculum design, Al-Istiqlal Islamic elementary school principal has designed the curriculum for the needs of the next 1-2 years and made improvements from year to year. Curriculum monitoring and assessment should be carried out periodically by curriculum principal and developers in the framework of subsequent curriculum development [40]. The study results also state that the curriculum is translated into lesson plans by socializing what students will achieve by learning objectives. It follows the opinion of Collie *et al.* [38], which stated that by referring to the curriculum, teaching materials can be prepared by the teacher in the form of a learning implementation plan so that students can achieve specific learning targets. The learning plan is more straightforward and makes it easier for teachers to arrange it. It is related to the Circular Letter of the Ministry of Education No. 14 of 2019 on Simplification of the Learning Implementation Plan. So, there is a change in indicators because the learning carried out also undergoes a shift from face-to-face to online learning. Rivers and Kinchin [40] stated that guided by the curriculum of teaching materials can be compiled by teachers in the form of an arrangement of learning implementation plan so that students can achieve specific targets in learning. With the COVID-19 pandemic, changes have occurred in lesson plan and the curriculum design used as a guideline in learning activities. The essence of the curriculum is the development of the curriculum created by adapting to the conditions of the COVID-19 pandemic.

Then the Curriculum team collaborated with R & D and the head of the foundation in formulating a lesson plan during the pandemic so that the teachers at Al-Istiqlal Islamic elementary school had compiled lesson plans based on grade level. The curriculum team also needs to know what intellectual understanding students should master based on cognitive, affective, and psychomotor skills. Taxonomy in education is used to classify instructional purposes; Some call it the purpose of learning, the purpose of appearance, or the goal of learning-the target of learning, organized into three areas cognitive, affective, and psychomotor. Moreover, the competence in mastery by students concerning 21st-century skills consists of six aspects: i) Knowledge construction; ii) Real-world problem solving; iii) Skilled communication; iv) Collaboration; v) Use of ICT for learning; and vi) Self-regulation, interact to foster lifelong learning for student [41].

The school always assists parents in understanding the learning conditions at this time by regularly doing parenting seminars, so parents are expected to be open to existing conditions. However, suppose parents have opinions and aspirations that the school will accommodate. In that case, the school will provide the reality of existing conditions with valid data and, together with parents, find solutions to the problems felt by parents during distance learning. Furthermore, the school has a way of doing follow-up with the parents of learners by directing children via Zoom Meeting or with parents to conduct evaluations of children's performance every

month, cooperate with student teams with classroom guardians, and conduct evaluations every week using Zoom Meeting application.

Based on the research results, the learning model is online learning. The learning method is a learning video made by the teacher, lectures, and Q & A, while the learning media is Zoom Meeting, e-classroom, WhatsApp, and YouTube. In this case, teachers and students have utilized digital media in learning. In connection with this, teachers also use Zoom Meeting and WhatsApp to interact with students' parents to maintain the quality of education. Stover, Yearta, and Harris [42] explained that the educational challenges of the 21st-century teachers have linked learning materials into everyday life and innovated in making learning videos so that students know 21st-century skills.

5. CONCLUSION

The results concluded that Al-Istiqlal Islamic elementary school is adapting curriculum design and lesson plan that will be applied, especially with the COVID-19 pandemic, and becomes a momentum to answer educational challenges in the 21st century. Education that was not previously accustomed to using technology, then with the current pandemic, both schools, teachers, students, and parents must adapt to existing conditions. Thus, there were changes in curriculum design and lesson plan during the COVID-19 pandemic.

From the research results, it can be concluded that the adaptability of school principal in curriculum design is by making an essential curriculum. Teachers' adaptability is by making a lesson plan, which refers to the Islamic elementary school curriculum formulated and designed previously by the curriculum team, school R & D, and the head of the foundation. The essential curriculum was created by combining the emergency curriculum with the 2013 curriculum, compiling learning tools, and preparing a platform for online teaching and learning activities in e-classroom and YouTube as a digital development of teaching materials. Several parties have been involved in formulating and designing the lesson plan during the pandemic: the curriculum team, school R & D, and the head of the foundation.

Theoretically, this research is expected to help increase the understanding of concepts related to the adaptation of school principal and teachers in curriculum design and lesson plan. Practically, this research is expected to increase knowledge and adaptability for school principal and teachers in curricula design and to learn both during the current pandemic and in the future. From the results of research related to adapting curriculum design and lesson plan, it can also be seen that during the COVID-19 pandemic, it has changed the implementation of learning so that it requires curriculum design and lesson plan that can adapt to that time, because curriculum design and lesson plan have differences in the pre-pandemic era, during the pandemic era, and the new normal era as in this research, so that this research can be used as an example for schools to make curriculum design and lesson plan in accordance with the needs and abilities of the school.

REFERENCES

[1] P. G. Aquino and R. C. Jalagat, "Gearing public sector management education curriculum in the Philippines in response to 21st century needs," *Public Administration Issues*, no. 6, pp. 172–191, 2021, doi: 10.17323/1999-5431-2021-0-6-172-191.

[2] N. A. Alghafary, "The availability of the 21st century skills in the sport and health for all curriculum of the undergraduate university students in Al-Balqaa Applied University, Jordan," *International Journal of Human Movement and Sports Sciences*, vol. 8, no. 5, pp. 217–228, 2020, doi: 10.13189/saj.2020.080509.

[3] A. Aykan and B. Yıldırım, "The integration of a lesson study model into distance STEM education during the COVID-19 Pandemic: teachers' views and practice," *Technology, Knowledge and Learning*, vol. 27, no. 2, 2022, doi: 10.1007/s10758-021-09564-9.

[4] N. Bergdahl and J. Nouri, "Covid-19 and crisis-prompted distance education in Sweden," *Technology, Knowledge and Learning*, vol. 26, no. 3, pp. 443–459, 2021, doi: 10.1007/s10758-020-09470-6.

[5] R. M. Tawafak, G. Alfarsi, and J. Jabbar, "Innovative smart phone learning system for graphical systems within covid-19 pandemic," *Contemporary Educational Technology*, vol. 13, no. 3, p. ep306, 2021, doi: 10.30935/cedtech/10879.

[6] L. A. Perry, "Risk, error and accountability: Improving the practice of school leaders," *Educational Research for Policy and Practice*, vol. 5, no. 2, pp. 149–164, 2006, doi: 10.1007/s10671-006-9002-x.

[7] M. Al-Balas *et al.*, "Correction to: Distance learning in clinical medical education amid COVID-19 pandemic in Jordan: current situation, challenges, and perspectives," *BMC Medical Education*, vol. 20, no. 1, p. 513, 2020, doi: 10.1186/s12909-020-02428-3.

[8] Z. R. Khan, S. Sivasubramaniam, P. Anand, and A. Hysaj, "'E'-thinking teaching and assessment to uphold academic integrity: Lessons learned from emergency distance learning," *International Journal for Educational Integrity*, vol. 17, no. 1, p. 17, 2021, doi: 10.1007/s40979-021-00079-5.

[9] D. Turnbull, R. Chugh, and J. Luck, "Transitioning to E-Learning during the COVID-19 pandemic: How have higher Education Institutions responded to the challenge?" *Education and Information Technologies*, vol. 26, no. 5, pp. 6401–6419, 2021, doi: 10.1007/s10639-021-10633-w.

[10] K. Ma, M. Chutiyami, Y. Zhang, and S. Nicoll, "Online teaching self-efficacy during COVID-19: Changes, its associated factors and moderators," *Education and Information Technologies*, vol. 26, no. 6, 2021, doi: 10.1007/s10639-021-10486-3.

[11] *Ministry of Education and Culture Circular No 4 Of 2020 Concerning Implementation of Education Policies in An Emergency Period of The Spread of Corona Virus Disease (COVID-19)*. Minister of Education and Culture of the Republic of Indonesia (in Indonesian), 2020.

[12] V. Revilla-Cuesta, M. Skaf, J. M. Varona, and V. Ortega-López, "The outbreak of the covid-19 pandemic and its social impact on education: Were engineering teachers ready to teach online?" *International Journal of Environmental Research and Public Health*, vol. 18, no. 4, pp. 1–24, 2021, doi: 10.3390/ijerph18042127.

[13] K. Mukhtar, K. Javed, M. Arooj, and A. Sethi, "Advantages, limitations and recommendations for online learning during covid-19 pandemic era," *Pakistan Journal of Medical Sciences*, vol. 36, pp. S27–S31, 2020, doi: 10.12669/pjms.36.COVID19-S4.2785.

[14] J. E. Nieuwoudt, "Investigating synchronous and asynchronous class attendance as predictors of academic success in online education," *Australasian Journal of Educational Technology*, vol. 36, no. 3, pp. 15–25, 2020, doi: 10.14742/AJET.5137.

[15] Zulherman, Z. Nuryana, A. Pangarso, and F. M. Zain, "Factor of Zoom cloud meetings: Technology adoption in the pandemic of COVID-19," *International Journal of Evaluation and Research in Education (IJERE)*, vol. 10, no. 3, pp. 816–825, 2021, doi: 10.11591/ijere.v10i3.21726.

[16] A. Poncela, "A blended learning approach for an electronic instrumentation course," *International Journal of Electrical Engineering and Education*, vol. 50, no. 1, pp. 1–18, 2013, doi: 10.7227/IJEEE.50.1.1.

[17] A. Aristovnik, D. Keržič, D. Ravšelj, N. Tomaževič, and L. Umek, "Impacts of the COVID-19 pandemic on life of higher education students: A global perspective," *Sustainability (Switzerland)*, vol. 12, no. 20, pp. 1–34, Oct. 2020, doi: 10.3390/su12208438.

[18] R. Lovrić, N. Farčić, Š. Mikšić, and A. Včev, "Studying during the COVID-19 pandemic: A qualitative inductive content analysis of nursing students' perceptions and experiences," *Education Sciences*, vol. 10, no. 7, pp. 1–18, 2020, doi: 10.3390/EDUCSCI10070188.

[19] C. Camacho-Zuñiga, L. Pego, J. Escamilla, and S. Hosseini, "The impact of the COVID-19 pandemic on students' feelings at high school, undergraduate, and postgraduate levels," *Heliyon*, vol. 7, no. 3, p. e06465, 2021, doi: 10.1016/j.heliyon.2021.e06465.

[20] R. M. Nassr, A. Aborujilah, D. A. Aldossary, and A. A. A. Aldossary, "Understanding education difficulty during covid-19 lockdown: Reports on Malaysian university students' experience," *IEEE Access*, vol. 8, pp. 186939–186950, 2020, doi: 10.1109/ACCESS.2020.3029967.

[21] F. R. Castelli and M. A. Sarvary, "Why students do not turn on their video cameras during online classes and an equitable and inclusive plan to encourage them to do so," *Ecology and Evolution*, vol. 11, no. 8, pp. 3565–3576, 2021, doi: 10.1002/ece3.7123.

[22] O. B. Adedoyin and E. Soykan, "Covid-19 pandemic and online learning: the challenges and opportunities," *Interactive Learning Environments*, pp. 1–13, 2020, doi: 10.1080/10494820.2020.1813180.

[23] C. B. Agaton and L. J. Cueto, "Learning at home: Parents' lived experiences on distance learning during COVID-19 pandemic in the Philippines," *International Journal of Evaluation and Research in Education (IJERE)*, vol. 10, no. 3, pp. 901–911, 2021, doi: 10.11591/ijere.v10i3.21136.

[24] M. W. Marek, C. S. Chew, and W. C. V. Wu, "Teacher experiences in converting classes to distance learning in the covid-19 pandemic," *International Journal of Distance Education Technologies*, vol. 19, no. 1, 2021, doi: 10.4018/IJDET.20210101.oa3.

[25] K. Ndihokubwayo, I. Ndayambaje, and J. Uwamahoro, "Analysis of lesson plans from Rwandan physics teachers," *International Journal of Learning, Teaching and Educational Research*, vol. 19, no. 12, pp. 1–29, 2020, doi: 10.26803/ijlter.19.12.1.

[26] P. T. Ng, "Timely change and timeless constants: COVID-19 and educational change in Singapore," *Educational Research for Policy and Practice*, vol. 20, no. 1, pp. 19–27, 2021, doi: 10.1007/s10671-020-09285-3.

[27] A. Aldhaheri, "Measuring school leaders' adaptability in the UAE: development of a scale to measure leadership adaptability," *Evidence-based HRM*, vol. 9, no. 1, pp. 34–46, 2021, doi: 10.1108/EBHRM-04-2020-0051.

[28] P. T. Febrianto, S. Mas'udah, and L. A. Megasari, "Implementation of online learning during the covid-19 pandemic on Madura Island, Indonesia," *International Journal of Learning, Teaching and Educational Research*, vol. 19, no. 8, pp. 233–254, 2020, doi: 10.26803/ijlter.19.8.13.

[29] J. A. Maderick, S. Zhang, K. Hartley, and G. Marchand, "Preservice teachers and self-assessing digital competence," *Journal of Educational Computing Research*, vol. 54, no. 3, pp. 326–351, 2016, doi: 10.1177/0735633115620432.

[30] Y. Muñoz Martínez and G. L. Porter, "Planning for all students: promoting inclusive instruction," *International Journal of Inclusive Education*, vol. 24, no. 14, pp. 1552–1567, 2020, doi: 10.1080/13603116.2018.1544301.

[31] I. Korstjens and A. Moser, "Series: Practical guidance to qualitative research. Part 4: Trustworthiness and publishing," *European Journal of General Practice*, vol. 24, no. 1, pp. 120–124, 2018, doi: 10.1080/13814788.2017.1375092.

[32] M. B. Miles and A. M. Huberman, *Qualitative Data Analysis: An Expanded Sourcebook*, 2nd ed. Sage Publications, Inc, 1994.

[33] I. Westbury, "State-based curriculum-making: The Illinois Learning Standards," *Journal of Curriculum Studies*, vol. 48, no. 6, pp. 783–802, 2016, doi: 10.1080/00220272.2016.1186740.

[34] C. Hajisoteriou, L. Neophytou, and P. Angelides, "Intercultural dimensions in the (new) curriculum of Cyprus: The way forward," *Curriculum Journal*, vol. 23, no. 3, pp. 387–405, 2012, doi: 10.1080/09585176.2012.703381.

[35] E. Fernández-Díaz, L. Fernández-Olaskoaga, and P. Gutiérrez-Esteban, "Collaborative action research through technologically mediated agoras," *Educational Action Research*, vol. 25, no. 1, pp. 56–70, 2017, doi: 10.1080/09650792.2016.1141107.

[36] L. D. Lapitan, C. E. Tiangco, D. A. G. Sumalinog, N. S. Sabarillo, and J. M. Diaz, "An effective blended online teaching and learning strategy during the COVID-19 pandemic," *Education for Chemical Engineers*, vol. 35, pp. 116–131, 2021, doi: 10.1016/j.ece.2021.01.012.

[37] B. Bai and H. Song, "21St century skills development through inquiry-based learning from theory to practice," *Asia Pacific Journal of Education*, vol. 38, no. 4, pp. 584–586, 2018, doi: 10.1080/02188791.2018.1452348.

[38] R. J. Collie, H. Granziera, A. J. Martin, E. C. Burns, and A. J. Holliman, "Adaptability among science teachers in schools: A multi-nation examination of its role in school outcomes," *Teaching and Teacher Education*, vol. 95, p. 103148, 2020, doi: 10.1016/j.tate.2020.103148.

[39] C. M. Răducu and E. Stănculescu, "Adaptability to online teaching during covid-19 pandemic: A multiple mediation analysis based on Kolb's theory," *International Journal of Environmental Research and Public Health*, vol. 18, no. 15, p. 8032, 2021, doi: 10.3390/ijerph18158032.

[40] C. Rivers and I. Kinchin, "Dynamic learning: Designing a hidden pedagogy to enhance critical thinking skills development," *Management Teaching Review*, vol. 4, no. 2, pp. 148–156, 2019, doi: 10.1177/2379298118807224.

[41] S. M. Stehle and E. E. Peters-Burton, "Developing student 21st Century skills in selected exemplary inclusive STEM high schools," *International Journal of STEM Education*, vol. 6, no. 1, p. 39, 2019, doi: 10.1186/s40594-019-0192-1.

[42] K. Stover, L. Yearta, and C. Harris, "Experiential learning for preservice teachers: Digital book clubs with third graders," *Journal of Digital Learning in Teacher Education*, vol. 32, no. 1, pp. 5–12, 2016, doi: 10.1080/21532974.2015.1055013.

BIOGRAPHIES OF AUTHORS

Nurhattati was born in 1961, and history of undergraduate and master's education at IKIP Bandung with the Educational Administration Program. She got her Doctoral degree with Educational Management Program at the State University of Jakarta. She is active in conducting research, writing articles and books, community service, and working as a lecturer in the education management study program at the State University of Jakarta. Further discussion can be done via email at nurhattati@unj.ac.id.

Desi Rahmawati was born in 1986, pursuing the world of education since she became a student in the Educational Management Program, Faculty of Education, State University of Jakarta. Her master's and doctoral degrees are obtained from Educational Management Study Programs at the same university. She is a Lecturer of Education Management Study Program, State University of Jakarta and intensively involved in various training programs. It is excellent to discuss with colleagues, for further discussion can be done via email desi-rahmawati@unj.ac.id.

Rugaiyah was born in 1964 and a Professor of Educational Management at the State University of Jakarta. She pursued her undergraduate education at IKIP Jakarta with Educational Administration Programs and master's degrees with Population and Environmental Education Programs. Her Doctoral degree obtained at the State University of Jakarta with Educational Management Program. She is currently conducting research, writing articles and books, helping formulate policies, and doing community service. Further discussion can be done via email at rugaiyah@unj.ac.id.

Ahmad Jauhari Hamid Ripki was born in 1984, history of undergraduate education in the Economic Education Study Program (Office Administration) at the State University of Jakarta. His master's and doctoral degrees are obtained at that university with an Educational Management Program. He started his career as an extraordinary lecturer at the economics faculty, State University of Jakarta, until he became the Ma'had Al-Istiqlal foundation school developer. Further discussion can be done via email at ahmadjauhari@stkipkusumanegara.ac.id.

Dirgantara Wicaksono was born in 1986, undergraduate education history with the History Education study program, Faculty of Social Sciences, State University of Jakarta and graduated in 2009, master of Educational Management program graduated in 2011. Doctor of Educational Technology program graduated in 2016. He started his career as a history teacher at Al-Hikmah High School Jakarta in 2007, Pulo Gadung, East Jakarta until he received an award as the youngest principal in DKI Jakarta in 2011 at 24 years old. Further discussions can be done via email dirgantara.wicaksono@umj.ac.id.