EXPLORING OPPORTUNITIES FOR EMBEDDING POST-PANDEMIC SCHOOL PRACTICES: LESSON LEARNED FROM COMPULSORY ONLINE LEARNING

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ABSTRACT

Throughout the Covid-19 pandemic, schools were to make emergency shift from full offline to online learning. With limited time given, schools were forced to bring out all their best potential in implementing this online learning. Such situation described the actual abilities, potentials, and challenges of each school in implementing online learning. By adopting a case-oriented multiple-case study, this study aimed at exploring the opportunities of embedding online learning as an integral part of post-pandemic teaching practices in urban and rural school in West Kalimantan province. Data from in-depth interpersonal and group interviews of 22 rural and urban schools, with 66 participants, indicated that both rural and urban schools struggled with teachers' and pupils' unpreparedness to integrate technologies in their learning. To keep classes running, seven teaching – learning scenarios were developed. In doing so, three layers of challenges were identified; primary, secondary and tertiary challenges. To make online learning possible to be embedded in schools' post-pandemic practices, this research reports a number strategic recommendations proposed by participating schools

Keywords: Online learning, distant learning, multiple case study, rural schools.

INTRODUCTION

The outbreak of COVID-19 pandemic had brought both challenges and opportunities to education practices. With all challenges it caused (Roxby, 2020; Cucinotta & Vanelli, 2020; Thomson & Ip, 2020), the pandemic also challenged schools to seek opportunities to make significant improvement to their learning practices (Bahasoan et al., 2020). One of the leaps in learning innovation that has occurred due to the pandemic is the widespread embedment of online learning into traditional offline learning in school. Due to the pandemic, schools were forced to move from offline to online mode in a short period of time. These conditions forced schools to bring out all their best potential in implementing this online learning. If examined in depth, these conditions are very helpful in describing the actual abilities, potentials and challenges of each school in implementing online learning. This will certainly be an objective groundwork

for developing post-pandemic learning in rural and urban schools in the province of West Kalimantan. In this regard, post-pandemic learning is characterized by the embedment of online learning as an integral leap innovation and modernization of traditional offline learning in schools in West Kalimantan province.

If properly implemented, online learning might be beneficial improvement for schools to carrying out their learning in a more advanced way. Online learning was praised for some reasons, such as its flexibility in terms of time and space (Yuhanna et al., 2020; Silahuddin, 2015). In addition, it was also regarded as an innovation, which could put pupils in the centre of teaching and learning processes (Dhawan, 2020) since it could (1) save or reduce education costs, especially budget for accommodation and transportation, (2) provide exciting and meaningful experiences for pupils and (3) flexible in terms of time and space (Silahuddin, 2015). In more detailed, Negash et al. (2008), argued that online learning is different from traditional physically face to face classroom. Online learning is believed to have distinctive advantages in terms of accessibility, connectivity, flexibility, and the ability to produce various types of learning interactions, in which teachers and pupils could join from anywhere and anytime they find comfortable (Singh & Thurman, 2019; Yuliana, 2020; Sadikin & Hamidah, 2020; Hartanto, 2016).

The advantages of implementing online learning above could be experienced by schools that are considered ready to embrace technologies in their learning and supported by adequate supporting learning facilities. However, for areas where the quality and availability of learning facilities and the readiness of teachers and pupils vary significantly from one place to another, the practice of online learning was a challenge for each school in improving the quality of pupils' learning. One of the areas with significant variations in the availability of various online learning supporting facilities was in West Kalimantan province, where this research was conducted. In this regard, the damaged infrastructures and low socioeconomic status of pupils made online learning might have been challenging to apply. As Taradisa et al. (2020) and Dwi et al. (2020) report indicate that the damaged infrastructure and the low socioeconomic status make online learning perhaps challenging to be embedded on schools' practices. Moreover, the nature of online learning which requires ICT skills, experienced personnel, and adequate support in terms of learning infrastructures and facilities might make it even more challenging to adopt for rural schools (Silahuddin, 2015). Given those challenging situations, it does not mean that online learning cannot be integrated as an integral part of learning at school at all. Behind the existing challenges, there are opportunities that can be maximized for developing better-implemented online learning. Insight drawn from the already implemented online learning can be used as the groundwork for developing online learning that can be applied massively and embedded in routine post-pandemic school learning in West Kalimantan province.

To adapt to the new learning model, school could have played significant roles (Huda, 2019; Komariah & Triatna, 2004), even though not all schools could do so (MacBeath & Mortimer, 2001). In West Kalimantan province, for example, schools' readiness to embrace online learning mode in urban and rural areas was varied quite widely (Irwan, 2020). To face the challenges, each school should be assisted with strategic supports. To do so, we found it necessary to map out strategies developed by rural and urban schools in implementing online learning during the pandemic, to analyze the challenges they faced, and to identify the opportunities for improving future online learning implementation. These data will be crucial for evaluating and enhancing future online learning, which could be embedded in the post-pandemic school practices.

A number of aspects of online learning implementation have been researched lately (Bestiantono et al., 2020; Deepika, 2020; Adnan & Anwar, 2020; Dube, 2020; Sulisworo et al., 2020; Unda, 2012; Setyawan, 2020; Kebritchi et al., 2017; Febrianto, 2020; Dhawan, 2020; Sun & Cen, 2016). In this respect, we believed that this research was distinguished from those previous researches for several characteristics, as this research (1) investigated not only how schools implemented online learning during covid19 pandemic, but also to map the challenges they faced and to identify potential improvements for future online learning implementation, (2) involved wider perspectives as sources of information; teachers, pupils and school leaders and (3) involved schools in both rural and urban areas as research subjects, which made the findings of this study were drawn from a fine-grained process that considered the complexities of contextual and local challenges and potentials in rural and urban schools in implementing compulsory online learning.

Taking the gaps above as consideration, we had developed three research objectives, which shaped every process undertaken in this research, namely to (1) describe how rural and urban schools practiced online

learning during the pandemic, (2) map challenges they faced, and (3) identify potential improvements for future online learning implementation. The findings of this study have the potential to enrich references and insights regarding the implementation patterns of online learning in the context of schools in the province of West Kalimantan, Indonesia. Such information could be used as a groundwork for decision-makers and future researchers to evaluate and improve future online learning practices in rural and urban schools as the embedment of their post-pandemic learning practices.

METHOD

This research is a case-oriented multiple-case study (Ragin, 1997; Ary, et al., 2010; Sugiyono, 2012; and Yin, 2003), with a qualitative approach (Nassaji, 2015 & Ary, et al., 2010). This research aimed at exploring the potential of improving future online learning practices in West Kalimantan province as an embeded portion of post-pandemic school practices, by taking lesson from the implementation of compulsory online learning during covid19 pandemic.

The decision to employ multiple case studies was based on the belief that such research design could provide rich contextual details regarding typical online learning implementation strategies, challenges, and potentials for future improvement in each case study school (Woodside, 2010; Gerring, 2007; Adelman et al., 1980 in Cohen, 2005; Hitchcock & Hughes, 1995; Cohen et al., 2005).

Participants

This research involved 66 teachers and school leaders from 22 schools across West Kalimantan province. The participants of this research were selected using the purposive selection technique (Santoso 2004; Puspitasari, Suliantoro & Erlianna, 2011; Notoatmodjo, 2010), to represent schools from rural and urban areas and to accommodate stakeholders in each school. The participants of this research are described in Table 1 below.

Table 1. Respondents' number in rural and urban schools

	Rural (8 Schools; S1 – S8)	Urban (14 Schools; S14 – S22)	Total
School Leaders (SL)	8	14	22
Teachers (T)	8	14	22
Pupils (P)	8	14	22
Total Participants	24	42	66

Data Collection and Analysis

To collect the data, a direct communication technique, in the form of the semi-structured interpersonal and group interview were employed. Such technique was adopted in order to provide deep comprehensives data regarding online learning implementation scenarios, challenges, and improvement potential in each school (Galletta, 2013; Hatch, 2002; Francisco & Barcelona, 2020; Mussardo, 2019). The data collection tool used in this study was an interview guidance sheet which contained general research information, informants' privacy concerns, interview procedures, and interview questions (McGrath et al., 2019).

To describe schools' strategies to implement compulsory online learning during covid19 pandemic, along with their challenges and recommendation for future improvements, two stages of data analysis procedures were employed. In the first stage, we used thematic analysis (Nowell et al., 2017; Braun & Clarke, 2006) to each respondents' responses in each school (Fereday & Muir-Cochrane, 2006) to draw conclusion regarding online learning implementation in each case-study school. In the second stage, we compared the data collected from each school using Cross Case Analysis (CCA) (Cruzes & Runeson, 2015; Ragin, 1997 in Khan & Wynsberghe, 2008) to draw conclusion based on school geographic locations (rural and urban).

The Scale

To establish robust assertion of data quality, and hence the finding of this research, three strategies were applied, namely, triangulation of data sources (Creswell, 2014; Miller, 2000), probing strategies (Galletta, 2013; Gray, 2004), and respondents' clarification and confirmation (member checking) (Creswell, 2014). In addition, before being used, the interview questions and procedures were validated by experts to ensure the construct validation of the questions. In addition, the questions were also piloted by involving teachers, pupils, and school leaders from relevant schools.

FINDINGS

Schools' Strategies to Keep School Running during Covid-19 Pandemic Outbreak

With the adaptation to health protocols during the pandemic, schools designed and implemented various learning strategies to keep their school running. Each design was developed based on potential and challenges in each school. Data analysis showed seven learning scenarios created and implemented by participating schools, as follows.

Learning Scenario 1

Data analysis suggested that two out of 22 participating schools implemented learning in scenario 1, namely S9 and S14. S9 was a state school, while S14 was a private one. Both schools were urban schools located in the capital city of West Kalimantan province. The learning pattern of the schools can be observed in Figure 1 below. As can be observed from the figure, the entire processes of the learning were carried out in an online setting (S11SL; S14T; S9P; and S9SL). The class was carried out regularly from Monday to Friday, with a shorter duration.

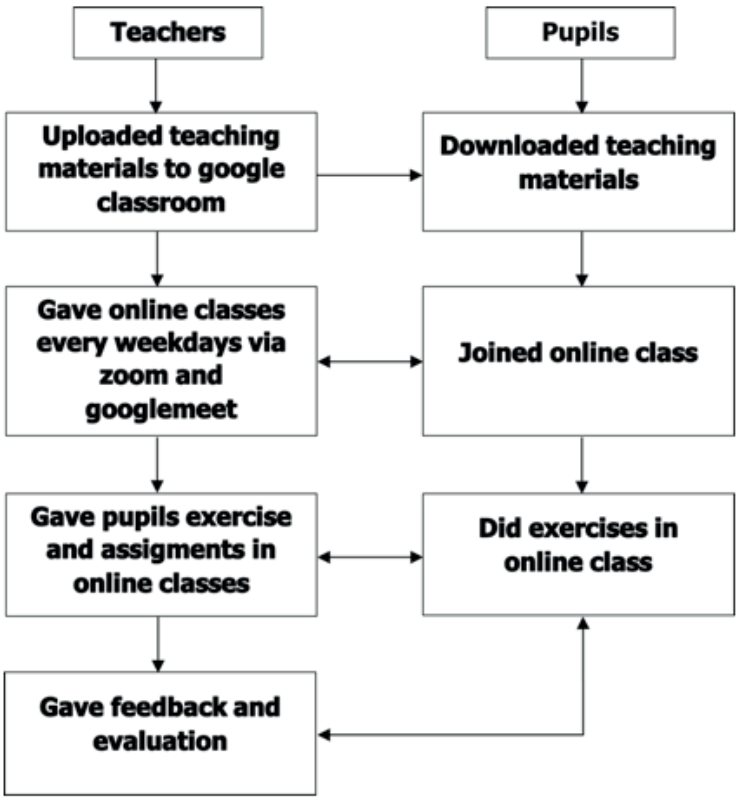

Figure 1. learning scenario 1

Learning Scenario 2

Scenario 2 combines synchronous and asynchronous online learning (Negash et al., 2008). Data analysis results suggested six schools implemented such learning procedures, namely S12, S13, S15, S16, S17, and S19. The schools were located in urban areas where adequate online learning supporting facilities were available. However, the lack of pupils' and teachers' readiness to adopt full online learning made them add a portion of asynchronous mode in their learning (S12P; S12T; and S16SL). The processes of teaching-learning in this type were presented in Figure 2 below.

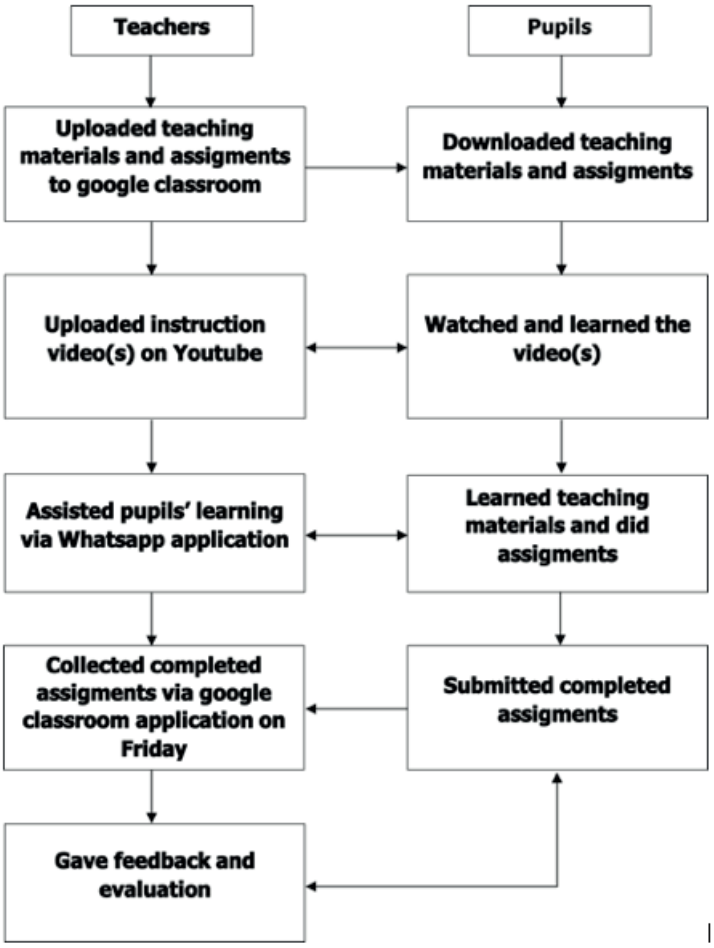

Figure 2. learning scenario 2

Learning Scenario 3

Scenario 3 combined online and offline procedures. It was implemented by five schools; three urban schools (S11, S20, and S21) and two rural ones (school S2 and S3). The schools had proper internet access and adequate infrastructure to travel to school. However, the limited internet data possessed by many pupils and teachers and a heavy lockdown policy in the schools' surrounding areas made them choose to implement such a learning design. What was reported by a teacher (T) from School 11 (S11) below described how limited internet data had been one of the major challenges for the five schools above.

Online learning required a large amount of internet data, especially if it was done via video conferencing. Just for a day of learning, if a full video call was applied, it required a lot of internet data. If it was done continuously, it could be very burdensome. Not only pupils, but many teachers also complained about this (S11T).

To get around this challenge, these schools chose to apply learning scenario 3 as an alternative. As can be observed from Figure 3 below, the learning procedure did not adopt video conferencing in the learning practices, which the schools claimed could spend much internet data.

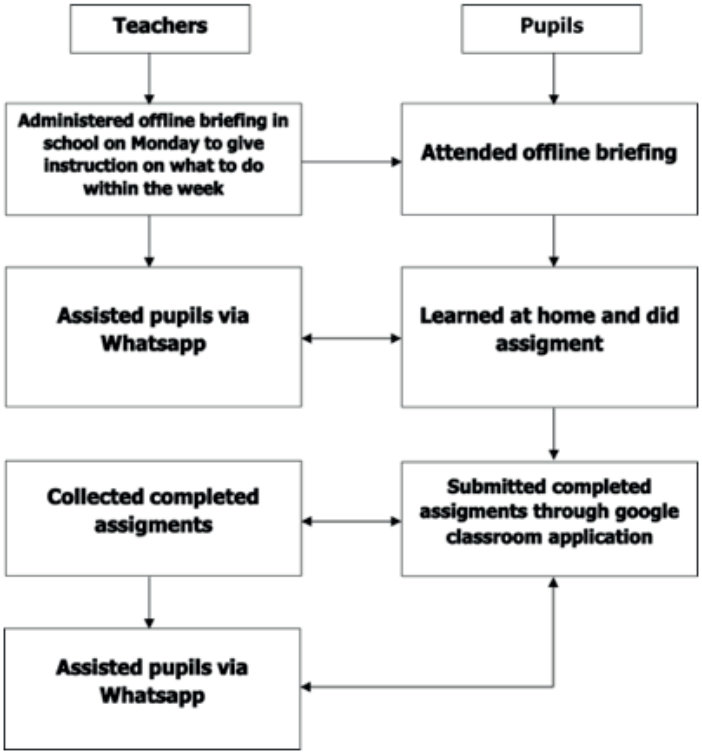

Figure 3. learning scenario 3

Learning Scenario 4

Two rural schools (S4 and S7) faced more complicated challenges than those implementing blended learning type I. In addition to having limited internet data, the schools reported that many of their pupils did not possess essential online learning facilities and devices, such as mobile phones, laptops, or computers, and the absence of a cellular network. As shown in Figure 4, video conferencing was also not adopted in this learning design.

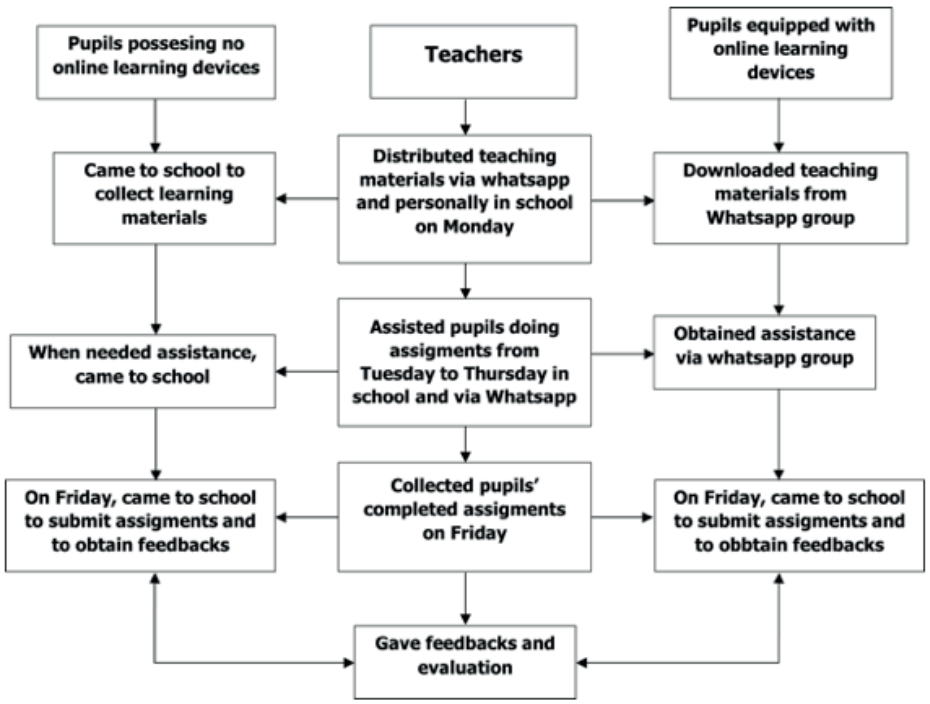

Figure 4. learning scenario 4

Learning Scenario 5

Three urban schools (S10, S18 and S22) decided to implement learning scenario 5 based on their belief that full online learning could not facilitate their pupils' learning development optimally. They argued that teachers and pupils should be given sufficient training to implement online learning before implementing it fully. In addition, the learning supporting facilities should also be provided preferably before shifting to online learning. In this type of learning, pupils come to school alternately based on the year of entry. First-year pupils come to school for offline classes in the first week. Then, second-and third-year pupils came on each month's second and third week, respectively. When not in offline classes, pupils participated in online learning. The teaching-learning process of Blended Learning Type III can be learnt from Figure 5.

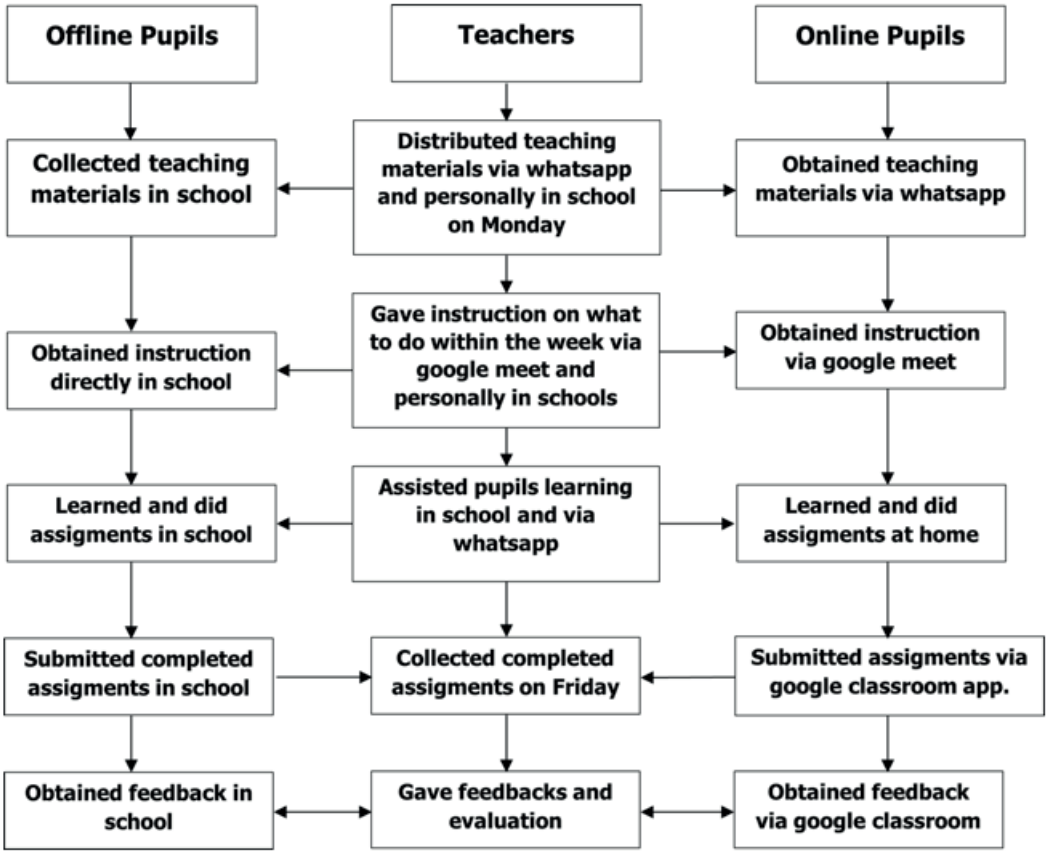

Figure 5. learning scenario 5

Learning Scenario 6

This option was chosen by two rural schools (S5 and S6) considering that online learning was not possible to carry out, due to limited learning support facilities, such as internet networks, power sources during the day and online learning tools (i.e., computers, laptops, or smartphones), in teachers' and pupils' homes. However, the schools were supported by the adequate quality of infrastructures so that pupils and teachers could come to school on the days scheduled by the schools to join offline briefing. As can be learned from Figure 6 below, in this learning design, pupils were let to learn and did assignments independently at home. While doing so, teachers did not provide any assistance to pupils.

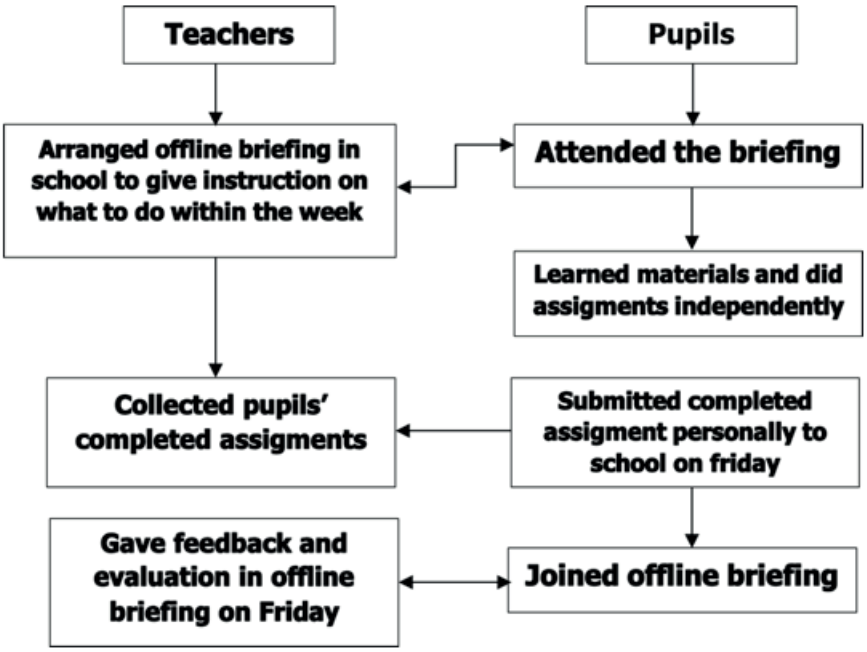

Figure 6. learning scenario 6

Learning Scenario 7

This model, which was implemented by S1 and S8, was almost similar to learning scenario 6. The difference was that learning scenario 7 was conducted in pupils' homes instead of school. In this regard, as shown in Figure 7 below, instead of asking pupils to come to school on Monday and Friday, schools sent teachers to visit pupils in their homes. To do so, pupils in similar neighbourhoods formed a study group in the house of one of the group members. On Sunday, visiting teachers came to distribute learning materials and assignments and provide instruction on what to do within the week. The learning scenario 7 procedures could be learned from Figure 7.

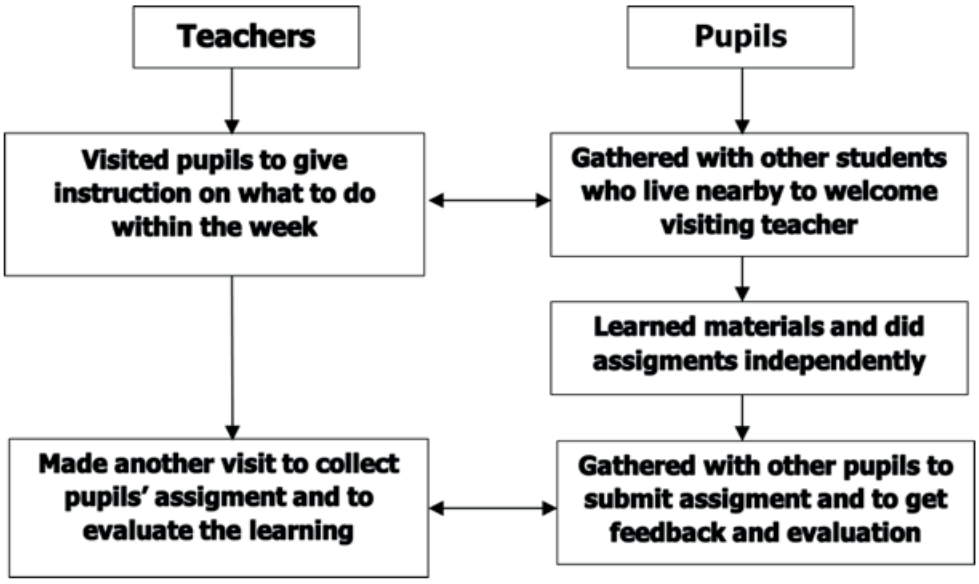

Figure 7. learning scenario 7

Learning Challenges

In running their teaching and learning process during the covid 19 pandemic, both rural and urban schools reported that they had faced many professional challenges. In general, as can be observed from Figure 8 below, the challenges were categorised into three types; typical rural school challenges, typical urban school challenges, and common challenges (faced by both rural and urban schools).

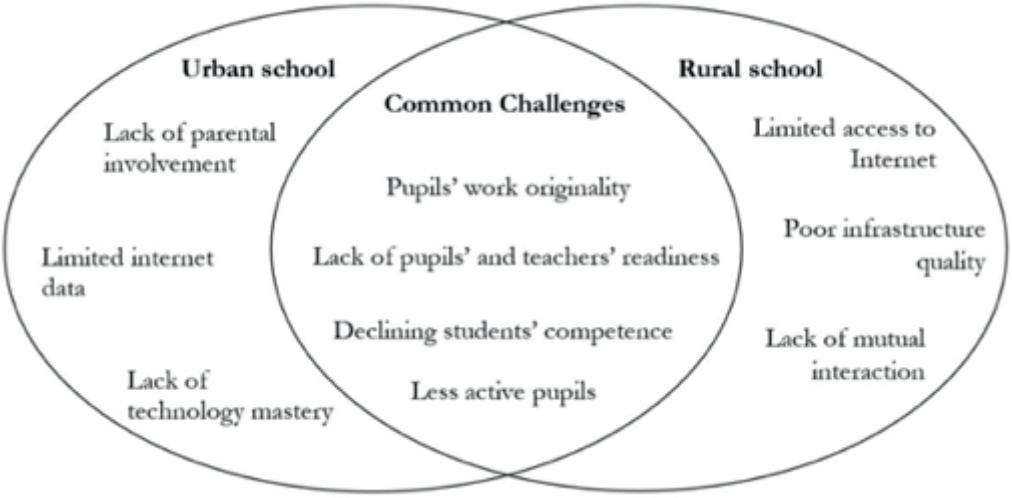

Figure 8. Rural and urban schools learning challenges

Online Learning Challenges in Rural Schools

Limited Access to Internet

All rural schools have reported limited access to the internet as one of the main obstacles in implementing online learning in their schools. There were three reasons for the challenge: lack of internet network coverage, lack of internet data, and lack of online learning devises possession. In connection with the lack of access to the internet network, the rural schools above reported that this problem occurred because a number of pupils and their teachers lived scattered in surrounding villages, outside the village where the school was located, which were not covered by the internet network. To be able to access the internet, they had to go to a specific location or looked for a high place. In addition to the lack of networks, access to the internet was also hindered by pupils' lack of internet data and possession of online learning devices, such as laptops, computers, or smartphones. '…most of pupils in my school did not have smartphone or computer, such situation made online learning implementation almost impossible to do' (S2SL). Such a situation made the above schools have to design special learning procedures to keep schools running during the pandemic.

Poor Infrastructures to Reach School from Home

Most roads in rural areas were damaged, including in most rural schools participating in this research. Given such a situation, pupils could not regularly come to school or other places where internet services were available. A statement from a pupil from S6 below described how poor the infrastructures in most rural areas were. …actually, the distance from home to school is not far, only about 16KM, but it takes more than 2 hours because the road is damaged (S6P).

Building Mutual Interaction between Teachers and Pupils

The lack of internet access, cellular networks, and adequate infrastructure, as reported above, made it difficult for teachers to establish reciprocal communication with pupils (S4T; S2T and S5T). Communication could only be done when pupils came to school, or when teachers visited pupils in their homes. Such a situation made teachers could not monitor and support pupils' learning at home.

Online Learning Challenges in Urban Schools

Lack of Internet Data

A pupil (P) from school 10 (S10) indicated that urban pupils struggled with limited internet data to join online classes. The massive internet usage in online learning practices (i.e, for video conferences and downloading learning materials) made the need for internet data to rise significantly (S11P; S11T; S18P; S17SL; and S17T). This situation made online learning processes that consumed much internet data (i.e, video calling) was limited (S10SL; S13T; S13SL; and S14SL).

Class Duration was too Short

As reported above, urban pupils' lack internet data led schools to shorten their class durations from usually 50 to 60 minutes per lesson hour to only 30 to 40 minutes (S9T; S9T; S11T; S11SL; and S18SL). Such a decision was seen as a problem by urban teachers. A teacher from S9 (S9T) described that the time allocated to run the class in online mode was too short. They had to modify their lesson plans and adjust them to fit around 30 minutes classes. She found that such duration was not practical to deliver her teaching materials.

Lack of Parents' Involvement to Support Pupils' Learning

The duration - shortened online class could have been made more effective if parents could play more significant role in supporting pupils' learning, since, during pandemic, pupils spent more time at home than in schools. Parents could have replaced teachers' parts in supporting pupils learning in certain extents. However, as learned from the data analysis, parents did not do so (S14P; S14SL; S22SL; S18T and S14T). S22SL, for example, reported that parents tended to let their children learn independently, as they did in regular class before the pandemic.

Common Challenges: Issues in Implementing Online Learning in Rural and Urban Schools

Lack of Teachers' and Pupils' Readiness to Embrace Online Learning

Data analysis revealed that teachers and pupils in urban and rural areas had not been fully ready to implement online learning as daily learning routines. Teachers were less skilled in operating online learning platforms such as video call applications and learning management systems (S7SL; S13SL). In addition, teachers were also found did not fully ready to design online learning, as indicated by their lesson plans which were still strongly influenced by offline learning procedures (S12SL; S12T; S2SL).

Less Active Pupils in Online Class

Both rural and urban school reported that pupils tended to be less active in online class than in offline one. In this regard, they said that pupils less responsive in online class discussion (S1T; S8T), tended to be late in joining class (S1T; S14T; S20T) and be late in submitting their completed assignment (S2T; S11T; S21T). For rural schools, as they reported, only a few pupils appeared during the offline session, in which pupils were expected to come to school (S1T; S4T; S6T). Such a situation was contradictory to offline class in which pupils tended to be more active in coming to schools (S1T; S4T; S6T; S17T).

The Decline of Pupils' Ability to Understand Lesson

A number of learning challenges reported above were believed to correlate with decreasing pupils' ability to understand the lesson. Compared to offline classes, as reported by both rural and urban schools, pupils tended to take longer to learn a lesson in an online class (S10T; S17T; S3T). As the consequence, pupils' achievement in many assessments set by teachers tended to be lower (S3T; S17T).

Difficulty in Ascertaining the Authenticity of Pupils' Works

The last common challenges faced by rural and urban schools was ensuring the originality of pupils' works. Since most of pupils' assignments were done independently at home, teachers in rural and urban schools claimed they had difficulty monitoring pupils' work (S6SL; S3T). Such a situation caused teachers not to ascertain whether the pupils were doing their work as expected or assisted by others. In some cases, teachers found that the quality of assignments performed by certain pupils at home showed an unreasonable rate increase. The quality of assignments done at home was much better than that done by the same pupils in class, under the teacher's direct supervision. The unusual results were questioned by teachers, especially regarding their originality (S6SL; S3T; S1T). The following statement from the teacher (T) from S1 outlined the other teachers' opinions.

We often find homework submitted by pupils yields excellent results. In fact, in class, the pupil was mediocre. The pupils' results were not that good. This of course, made us wonder whether it was the work of the pupils themselves or done by someone else (S1T).

Recommendations for Future Improvement: Schools' Perspectives

Improving Teaching and Learning Facilities

Providing better internet quality was the first recommendation proposed by both rural and urban schools (S20SL; S14SL; S14T; S14P; S20SL; S20P; S21P; S2P; S3SL; and S3T). In this regard, they believed that the lack of internet quality had made the online learning process challenging. The improvement of network quality, according to the schools, would be better if relevant authorities also provide free internet data for both teachers and pupils (S14T; S14P; S20P; S21P; S12SL; S12T; S12P; S11SL; S11T; S11T; S4SL; S4P; S5T; S5S; and S6SL). The next recommendation from rural and urban school concerning the teaching and learning process was about providing other learning facilities in schools, such as computers, laptops, smartphones, and other learning sources, including books and research reports (S14P; S14SL; S14T; S20SL; S20T; S20P; S12SL; S12T; S13T; S11T; S2P; S3SL; S3T; and S3P). In addition to those recommendations, rural schools proposed relevant authorities to provide a specific learning management system (LMS) that was easier to operate and could comply with low-quality internet (S5T).

Increasing Technology Mastery

Both rural and urban schools agreed that further systematic continuous trainings would be needed to improve pupils' and teachers' skills in administering online learning. The first required training by the teachers was concerning operating and integrating technologies into learning (S14P; S14T; S15T; S20SL; S22T; S20T; and S3T). In addition, teachers also proposed continuous training on designing and assessing online learning. In this regard, they reported that those two aspects were the most confusing parts in administering online learning (S14T; S11SL; S2T; and S3SL).

Lesson Delivery Adjustments

To make teaching material delivery during online classes better, several recommendations have been given by rural and urban schools. Urban school pupils, for example, proposed to lengthen the online class duration to have a longer time to discuss and understand teaching materials (S14SL; S14P; and S20P). In addition, they also suggested the feedback sessions be done more frequently so that they could evaluate their learning and assignment immediately (S14P; S20P; and S19P). Furthermore, the pupils also advised that the techniques of delivering the material should be designed more attractively so that it would not be boring and uninteresting for them (S14P; S20P; S19P; S21P; and S11P). In a similar vein, both teachers and leaders of urban schools also proposed a number of improvements for future online learning implementation, including (1) developing uniform learning evaluation technique (S20SL; S14T; and S4SL), (2) developing uniform Learning Management System (LMS), so that they could learn to each other, even across schools (S20T), (3) using videos to upload to the internet, so that pupils' could watch anytime they want (S14T), and (4) providing uniform learning assessment forms (S5T and S3T).

Building Closer Relationships with Parents

Rural and urban schools suggested that parents play more roles to improve future online learning. Urban schools, for example, argued that involving parents could help to facilitate and monitor their children when learning at home (S12SL; S13T; S11T; S14T; S20P; S20T; and S13T). For rural schools, parental involvement will be needed to direct pupils to study at home, do assignments, and ensure they attend offline classes as scheduled (S2SL; S3T; S3P; and S2SL).

DISCUSSIONS AND CONCLUSION

The Variations of Teaching Designs Developed Illustrated the Magnitude of the Challenges of Online Learning in Schools

Implementing full online learning in West Kalimantan ptovince, Indonesia, during COVID-19 pandemic was indeed found challenging. The high expectation from the government for this online learning to run as expected (Nadeak, 2020), did not live up to the reality. The facts revealed that doing so seemed easier said than done in rural and urban schools. As presented in finding section above, seven learning designs had been developed and implemented by schools to run their class during the pandemic. Of the seven learning designs, only one fitted the definition and procedures of online learning, while the rest referred to blended and distance offline learning models (Hartanto, 2016; Negash et al., 2008; Singh & Thurman, 2019; Silahuddin, 2015). Those wide variations of learning procedures during covid19 above indicated each school's wide variety of contextual challenges. In this respect, as can be learnt from the findings above, schools had to design various learning strategies considering their typical challenges and strengths to keep their school running during the pandemic. Such challenges were undoubtedly a barrier for schools to implement online learning optimally.

The findings regarding the learning strategies applied by those schools reported above confirmed the existing research findings which argue that (1) the transition from offline to online learning is indeed a challenging process (Agarwal & Dewan, 2020; Deepika, 2020; Kebritchi et al., 2017; Setyawan, 2020), especially for rural and urban school in West Kalimantan province, (2) without adequate supporting facilities and adequate schools' skills and experiences in operating online learning tools, schools alone could not be expected to be able to switch to full online learning optimally (Bestiantono, et al., 2020; Simamora, 2020; Kebritchi et al., 2017; Dube, 2020; Handayani, 2020; Taradisa et al., 2020; Rustiani, et al., 2019; Negash et al, 2008; Dwi et al., 2020), and (3) teachers who were skilled in designing online learning lesson plans were also needed so that online learning can run as expected (Adnan & Anwar, 2020; Dube, 2020; Sulisworo et al., 2020; Sutarto, Sari & Fathurrochman, 2020).

Learning Challenges in Rural and Urban Schools: An asymmetric Relation

As reported in the research findings section, many challenges had been reported by schools when implementing online learning. After conducting an in-depth interpretation of each challenge, considering how each occurred, we concluded that there were asymmetric relationships among the challenges. In simple terms, we can say that some challenges occurred because of other challenges that had existed earlier. With that in mind, we classified the reported challenges into three layers; primary, secondary, and tertiary challenges. Primary challenges referred to barriers that had emerged since the beginning of schools starting online learning, while secondary challenges referred to learning barriers caused by primary challenges. Tertiary challenges were caused by primary and secondary challenges either directly or indirectly. As shown in Figure 9 below, the relations among learning challenges by outer curved arrows.

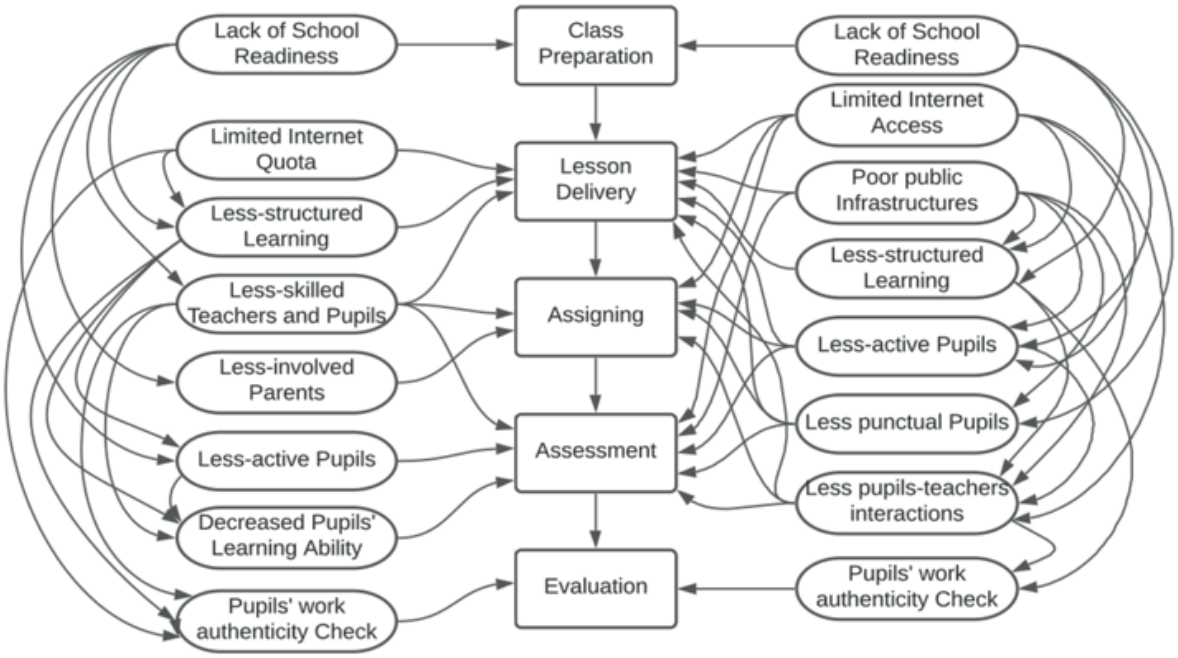

Figure 9. Schools learning challenges asymmetric relations

As can be learnt from Figure 9 above, there were at least five areas of teaching processes interfered with by the professional challenges, from preparation to the evaluation stages. The challenges found at each stage of learning are indicated by inner arrows. Such challenges were believed to have been typical constraints for schools in developing countries (Deepika 2020; Adnan & Anwar 2020; Dube, 2020, Taradisa et al., 2020; Simamora, 2020), therefore, it was not surprising that these challenges were reported by rural and urban schools in West Kalimantan province. The readiness of schools to adopt online learning, for example, greatly determines the success of online learning (Kebritchi et al., 2017). The unpreparedness of teachers, pupils, and parents to collaborate in implementing this learning can determine the failure to enforce online learning. As shown in Figure 9, as a primary challenge, the unpreparedness of teachers, pupils, and parents to switch from offline to online learning made learning problems develop into other issues, which we called secondary and tertiary challenges.

The sudden shift from full offline to online learning made pupils and teachers less ready to embrace online learning. To get used to it, an adaptation period was needed (Adnan & Anwar, 2020). For teachers, their unpreparedness could be seen from their lack of skills in operating technology in online learning. In addition, it could also be identified from the tecahers' ability to design learning according to online learning procedures. For pupils, as also reported by Dwi, et al. (2020) and Deepika (2020), the transition period was found unattractive and boring, that they tended to be less active and could not learn as much as in offline ones. Parents also faced an almost similar problem. To be involved further in supporting their children during online learning, a transition period was also needed. This situation made parents less optimal in supporting pupils' learning at home. As reported by the schools, all of the problems above, either directly or indirectly, became an integrated challenge in implementing online learning and tended to cause a decline in pupils' competencies (Taradisa et al., 2020; Deepika, 2020).

Improving Future Online Learning Implementation: Rural and Urban Schools' Voices

The decision to dismiss pupils from full offline learning mode to online learning was considered uneasy by schools both in rural and urban areas (Mustakim, 2020). Therefore, alternative solutions were needed. In this regard, pupils' and teachers' voices regarding potentials for future improvement were valuable to improve future online learning implementation (Deepika, 2020). In general, the proposed improvements recorded above tended to lead to primary challenges, such as improved learning facilities, increased mastery of technology, improved classroom management under online learning needs and greater parental involvement were the main requirements in improving the quality of online learning in schools.

As discussed above, primary challenges refer to the fundamental challenges that schools faced from the start of their online learning to the end. Therefore, it made sense for schools to focus their proposals on improving these challenges. If they were not solved, it would be tough to improve the quality of future online learning. Handayani (2020), Simamora (2020), Dube (2020) and Bestiantono, et al. (2020) illustrate with the instability of the internet network, limited interaction between teachers and pupils, and limited face-to-face meetings between teachers and pupils, schools cannot be expected to run high-quality online learning. In addition, improving teachers' and pupils' readiness to embrace online learning would also be key steps in improving online learning implementation quality in the future (Kebritchi et al., 2017). To do so, they proposed a number of strategic steps, such as administering dynamic presentations, laboratory tutorials, simulations, conceptual discussions, interaction, and collaboration with pupils to bolster their action, exploration, and knowledge improvement.

The emergency shift from full offline to online learning, as a result of the COVID-19 pandemic, seemed to be a challenging process for schools and parents. It was evident from the results of the analysis conducted in this study, which showed that schools and parents had to strive to keep the learning going in the midst of a number of movement and interaction restrictions. With the aim that, there were at least seven learning scenarios developed and implemented by the schools, ranging from full online learning to modified offline distant learning. The learning scenarios showed the significant variations in the challenges and strengths of each school in urban and rural areas in continuing learning during the pandemic. The scenarios were adapted to the conditions of each school. In doing so, a number of challenges had been reported by schools, ranging from the lack of readiness of teachers, pupils, and parents in implementing online learning, to the lack of supporting facilities. After extraction and interpretation have been carried out, the challenges could be grouped up into three layers: primary, secondary, and tertiary. The three layers of problem had an asymmetric relationship, where the primary challenges caused the emergence of secondary and tertiary challenges either directly or through secondary challenges.

Urban schools mainly dealt with the unpreparedness of teachers and pupils in integrating technologies, which was an integral part of online learning implementation, into their routine learning, as the alternative to regular offline learning. Meanwhile, rural schools seemed to face even tougher challenges, because apart from having to face the fact that their pupils and teachers were not ready to integrate technology in learning, they also had to deal with challenges in the form of limited online learning support facilities such as access to the internet and limited ownership of devices for carrying out online learning. The aspects recommended by the school to be improved above were the main elements of online learning, if fulfilled and improved, the opportunities for online learning to run better in the future will be greater.

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