



## The Application of Basic Principles of Online Learning Through Google Suite for Education During Covid19 Outbreak

Received:07-01-2021; Revised:08-06-2021; Accepted:09-06-2021

### Afrianto Daud \*)

English Education Department, Faculty of  
Teachers Training and Education,  
Universitas Riau, Indonesia  
Email: [afrianto.a@lecturer.unri.ac.id](mailto:afrianto.a@lecturer.unri.ac.id)

### Mirza Hardian

Civic Education Department, Faculty of  
Teachers Training and Education,  
Universitas Riau, Indonesia  
Email: [mirza.hardian@lecturer.unri.ac.id](mailto:mirza.hardian@lecturer.unri.ac.id)

\*) *Corresponding Author*

**Abstract:** As education worldwide is now switching massively to a virtual class during the pandemic, a teacher needs to understand online learning's philosophy and principles to make sure the class can run effectively. This paper aims to examine the current situation of online learning after the Covid19 outbreak and discusses the implementation of basic concepts of online learning by utilizing *Google Suite* products such as Google Classroom, Google Meet, Google Doc, and Google Forms. Adopting the idea of a library research approach, data of this study were taken entirely from the secondary data by first searching some relevant resources in the area of online learning. The primary database used for searching the relevant resources is the e-resources of the Indonesian national library. The databases here have been connected to various reputable international databases such as ProQuest, EbscoHost, SAGE, Scencedirect, Taylor & Francis, and many more. The data include those taken from e-books, journal papers, and scholarly articles. Taking data from these reputable resources is necessary to enhance the quality of the data collected. Among the basic concepts for effective online learning are that teachers or lecturers need to ensure the following principles considered when designing and implementing online learning: *student-centered* learning activities leading to *self-regulated learning*, *interactivity*, and *strive for presence* (in social, cognitive, and teaching aspects during learning).

**Abstrak:** Karena pendidikan di seluruh dunia sekarang beralih secara besar-besaran ke kelas virtual selama pandemi, seorang guru perlu memahami filosofi dan prinsip pembelajaran online untuk memastikan kelas dapat berjalan dengan efektif. Tulisan ini bertujuan untuk mengkaji situasi pembelajaran online saat ini setelah wabah Covid19 dan membahas konsep dasar pembelajaran online dan aplikasinya dalam konteks pemanfaatan produk Google Suite seperti Google Classroom, Google Meet, Google Doc, dan Google Forms. Dengan mengadopsi ide pendekatan studi pustaka, data penelitian ini sepenuhnya diambil dari data sekunder dengan terlebih dahulu mencari beberapa sumber yang relevan di bidang pembelajaran online. Database utama yang digunakan untuk mencari resource yang relevan adalah e-resources perpustakaan nasional Indonesia karena database di sini telah terkoneksi dengan berbagai database internasional ternama seperti ProQuest, Ebsco Host, SAGE, Scencedirect, Taylor & Francis, dan masih

*banyak lagi. Data tersebut meliputi yang diambil dari e-book, makalah jurnal, dan artikel ilmiah. Pengambilan data dari sumber yang memiliki reputasi baik ini diperlukan untuk meningkatkan kualitas data yang dikumpulkan. Di antara konsep dasar untuk pembelajaran online yang efektif adalah bahwa guru atau dosen perlu memastikan prinsip-prinsip berikut dipertimbangkan ketika merancang dan melaksanakan pembelajaran online: kegiatan pembelajaran yang berpusat pada siswa yang mengarah ke pembelajaran mandiri, interaktivitas, dan memastikan adanya kehadiran (dalam sosial, kognitif, dan aspek pengajaran selama pembelajaran).*

**Keywords:** *Online Learning, Covid-19, Google Suite for Education.*

## **INTRODUCTION**

**C**ovid-19 has changed and disrupted many aspects of our lives, including education. Corona has forced millions of schools to be physically closed. UNESCO data (2020) reports that 91.3% or around 1.5 billion students in the world cannot attend school as usual. They have to switch massively to virtual learning. This sudden change to online learning has added to the complexity of national education problems. Both students and teachers are required to be familiar with digital technology for teaching and learning (Kultsum, 2020).

Apart from the problem of the internet network infrastructure that is not well distributed in Indonesia, the issue of online learning in Indonesia is also associated with teachers' competency divide. A considerable number of teachers and even lecturers are not yet fully steady to do this online learning. Data from several studies, such as Widodo & Riandi's study (2013 as cited in Koh, Chai, & Natarajan, 2018), show that teachers' competencies regarding ICT skills are unequal between regions in Indonesia. A survey from the Ministry of Education and Culture in June 2020 also revealed that more than 76% of teachers admitted to being weak in terms of the ability of digital technology for learning (Kompas.com, 2020b). Another survey conducted by the Federation of Indonesian Teachers Unions (FSGI) and the Indonesian Child Protection Commission (KPAI) in early April 2020 of 602 teachers

(respondents) in 14 provinces found that only 8% of teachers understood devices for online learning (Beritasatu.com, 2020). Because of this unpreparedness, in the early days of Covid, many teachers conducted online learning primarily by giving students a pile of assignments. A survey from the Indonesian Child Protection Commission (KPAI) in April 2020 also showed that most teachers conducted online learning only by giving assignments to students through several platforms such as WhatsApp in the early days of online learning obligation. 58.8% of teachers surveyed admitted that they gave the same assignment to all students regardless of students' socioeconomic and personal conditions.

Numerous studies have been conducted in several regions in the Indonesia context investigating the effectiveness and the usefulness of online learning (Bahasoan, Wulan Ayuandiani, Muhammad Mukhram, & Aswar Rahmat, 2020; Fauzi & Sastra Khusuma, 2020; Maison, Kurniawan, & Anggraini, 2020; Nadeak, 2020; Prestiadi, 2020; Sutiah, Slamet, Shafqat, & Supriyono, 2020), Students' View on the Use of WhatsApp during Covid-19 Pandemic: A Study at IAIN Batusangkar (Munir, Erlinda & Afrinursalim, 2021). Although some studies indicated that online learning during pandemic situation brings some positive impacts and are pretty effectively implemented, some other studies reported that the online learning experience some

challenges. The problems are not only about the rampant limited internet access and high cost of online learning (Bahasoan et al., 2020) or students' readiness (Rusmiati et al., 2020), but also teachers' readiness and ability to conduct an online-based pedagogy (Lie et al., 2020; Rusmiati et al., 2020). In terms of technology, most Indonesian teachers are still categorized as early adopters of distance learning (Rahmadi, 2021). Many teachers are still struggling to enhance the quality of online learning engagement (Lie et al., 2020).

Considering some of the phenomena above, it becomes more important and relevant for teachers and lecturers to equip themselves with the theories and principles of learning before performing them. The teachers' understanding of online learning theories and concepts is vital to prepare them to design learning strategies. What influences the success of learning is not primarily due to what media or platforms are applied. What is more important is the learning strategies used by the teachers during the online class. The teacher will be the key player in using ICT for the success of their classrooms (Ghavifekr & Rosdy, 2015). This paper describes some of the ground principles of online learning taken from several significant theories proposed by online learning experts such as O'Neil, Fisher, dan Newbold (2004), Anderson (2008), and Andrade (2015), and then explains how to apply these principles in an online class setting, especially by using Google Suite for Education.

Google Suite for Education has been one of the most popular online learning platforms used by million of teachers and students worldwide during the pandemic (TJP, 2020). For the convenience of students and teachers, Google has even allowed schools and students to use Google Meet for free during this pandemic. Some studies have investigated how teachers use this platform for their online learning during pandemics (Alim, Linda, Gunawan, & Saad, 2019; Alterman, 2020; Dechev, Nikolov, & Rachev,

2020; Dorel, 2020). However, it seems that there is no much comprehensive discussion yet on how to make use of this platform following the online learning principles. Therefore, this paper could enrich the literature on conducting effective online learning during this challenging situation.

## **METHOD**

This study adopted the idea of library research method by which all of the data were taken from the secondary data. The data collection and analysis were conducted by first searching and collecting some relevant resources in the area of online learning. The primary databases used for searching the relevant resources are the e-resources of the Indonesian library (<https://e-resources.perpusnas.go.id/>) as the databases here have been connected to various international databases ProQuest, EbscoHost, SAGE, Sciencedirect, Taylor & Francis, and many more. In other words, the data of this study is completely taken from the secondary data. The data include those taken from e-books, journal papers, and scholarly articles. Taking data from these reputable resources is necessary to enhance the quality of the data collected.

Searching for the relevant resources was conducted by filtering the searching results. This was done by making use of the power of boolean operators such as 'AND', 'OR', and 'NOT'. Some keywords such as 'principles of online learning OR virtual learning OR e-learning', 'design AND concept of online learning OR virtual learning OR e-learning' were used to get relevant resources. The collected data were subsequently analyzed by selecting, displaying, and redacting to answer the research questions.

## **RESULTS AND DISCUSSION**

Having conducted a systematic search via databases, it was found that some literature related to online learning, such as those from O'Neil, Fisher, and Newbold (2004), Anderson (2008),

and Andrade (2015) mention some essential points that need to be considered by teachers or lecturers when designing and implementing online learning. Among the basic concepts for an effective and good quality online learning is that teachers or lecturers need to ensure the following principles: *student-centered*, which leads to the creation of students' ability to manage to learn independently (self-regulated learning), *interactivity* (there are mechanisms of interactions between students and teachers, interactions among students, and interactions among teachers online), *strive for presence* (ensuring the presence of students and teachers socially, emotionally, and cognitively).

More detailed discussion of the above principles are as follows:

### **1. *Students-centered***

In online teaching practice, every lecturer and teacher need to design lessons that facilitate student-centered learning. In other words, learning design and the choice of learning platform must be an option that allows students to be more active in carrying out and experiencing learning activities. Meanwhile, teachers/lecturers have more duties as learning facilitators.

The activeness of students, for example, can be observed from their willingness to study and review first the materials posted by the teachers on the LMS (Learning Management System). It can also be seen from their enthusiasm for completing the project prepared by the teachers as a follow-up on the on-going class.

Teachers should no longer explain the material verbally in their virtual meetings with students. In other words, the lecturing method that many teachers practice during face-to-face learning must be lessened. Teachers must multiply numerous activities that allow students to explore the materials presented independently. This independent learning will improve students' understanding and ability to understand and practice the materials (Lau, 2017; Naibaho, 2019).

The independent learning further allows students to have the ability of self-regulated learning. This term refers to the learning process that mostly occurs from the thoughts, feelings, strategies, and behaviors that the learners produce to achieve learning goals (Schunk & Zimmerman, 1998).

To achieve self-regulated learning ability, it is strongly determined by the existence of self-initiated actions such as goal-setting, efforts to achieve goals, time management, and physical and social environment settings. Here, the role of the teachers or lecturers as facilitators and motivators is demanded during the online learning process.

### **2. *Interactivity***

Interaction is a grass-roots element of online learning. Interaction is a reciprocal or two-sided relationship between teachers and students and among students in an online learning system. It can be in the form of questions and answers between teachers and students, discussion, and interchange of ideas and feedback from teachers or classmates (peer-feedback). No less important is the collaboration among students during the learning process.

Online learning must be designed in such a way that allows this interaction to happen. Sufficient interaction between teachers and students, or between one student to another, is an essential factor for student interest and resilience in online learning (Moreillon, 2015). Otherwise, online learning will be tedious. Students will not be able to survive longer if online interaction is not adequate (dry-interaction).

### **3. *The presence of students and teachers***

When physical presence is not possible in virtual learning, Anderson (2008) reminds the importance of the existence of students and teachers or students and teachers socially, cognitively, and teaching in online learning.

Social presence refers to efforts to build a supportive environment in online learning. Students feel the level of comfort and safety needed to express their ideas in a

collaborative context and present themselves as real and functional human beings. Meanwhile, according to Anderson (2008), cognitive presence is related to an online learning atmosphere or learning environment that supports the development and growth of critical thinking skills.

For example, a social presence can be attained by teachers by creating an atmosphere of mutual trust between teachers and students during online learning. Everyone feels comfortable and safe to verbalize their opinions, including having different views with other teachers or students during learning.

The existence of interaction and establishing a conducive atmosphere for learners will create a sense of community, namely the feeling of being in a learning community in which all members are ready to support each other. Furthermore, Anderson (2008) states that if the atmosphere of online learning is designed as positively as possible, it is expected that the online class community will appear at what he calls a *community of inquiry*. It refers to a community with a strong interest, a high enthusiasm, and persistence in following the process to figure out the answer to a question in class.

Furthermore, from the aspect of learning design, Students' View on the Use of WhatsApp during Covid -19 Pandemic: A Study at IAIN Batusangkar (Munir, Erlinda & Afrinursalim, 2021). Horton (2012) explains that online classes need to be designed where three important activities could take place: absorb, do, and connect. '**Absorb**' refers to activities that allow students to absorb knowledge by reading or watching, or listening. '**Do**' is observed when students do practice or find activities to deepen learning. Meanwhile, **connect**, one of which is dislodged when students complete activities designed to connect what they learn with their life and work.

### **Using G-Suite for Education Platform for Online Learning**

This section describes how to apply some of the above online learning principles through the use of G-Suite for Education. G Suite is a collective application provided by Google to help educators worldwide provide the educational process, both before the pandemic and after the Covid-19 pandemic. Among the popular G-Suite applications are Google Classroom, Google Doc, Google Drive, Google Forms, and Google Meets.

Google Classroom is a G-Suite application that can be applied as a Learning Management System (LMS). The available features are sufficient to facilitate teachers' needs to carry out online learning by paying attention to the principles discussed above.

To ensure that learning is more student-centered, for instance, teachers can use the *document upload* feature or lecture material in the *Classwork* section. The teachers must certainly first prepare the lecture materials, such as Semester Learning Plans (RPS), learning contracts, assessment plans, and teaching materials in a digital form. Teachers can upload all the materials that have been prepared in Google Classroom. They can then make a written statement or instructions for using the material as a direction for students to study independently.

To ensure students are actively engaged, teachers need to motivate or prompt students by reminding them of the importance of the materials being studied to increase their understanding. Teachers also need to prepare detailed-checking scenarios about learning steps, in addition to studying the material independently. The detailed scenario includes information about what students should do after accessing the given materials, if there are there any exercises or any questions that must be answered, for example.

It is highly recommended for teachers to alter the materials displayed in the classwork feature. Not only reading the materials in the form of pdf or word documents, but it would also be better if there are materials in the

form of audio-visuals. For example, Teachers can record explanations or descriptions about specific topics first, upload the materials on their Youtube channels, and then integrate those links into Google Classroom. At least, teachers can provide numerous Youtube links or certain websites related to enrichment and variations of the material presented.

With the material available in Google Classroom, students can independently study the material. They can set their schedule and make the target. They are also able to plan the intensity of their access to the material and decide what to follow up on from the materials displayed. This is part of the self-regulated learning principle that has been discussed earlier in this paper.

The power of G-Suite for Education in enabling self-regulated learning has been discussed by some researchers (Amalia & Puwaningsih, 2020; Atmojo, Muhtarom, & Lukitoaji, 2020; such as Jatisunda, Salim Nahdi, & Suciawati, 2020; Maharsi, 2018). All studies reported that the use of google classroom as an application under G-Suite for Education has been effective in improving students' self-regulated learning and students' self-awareness in some different contexts of learning during this pandemic.

Another vital element of effective virtual learning that needs to be taken into account is the provision of interactivity during the online class. To apply the principle of interactivity, teachers can maximize the streamline of Google Classroom as a media discussion board. During the learning process, teachers can streamline questions or post certain topics. Then, students streamline their ideas or answers to questions.

When the discussion occurs, teachers need to provide comments, reviews, additions, and straightening of information about the topic being discussed. Teachers also need to encourage each student to respond to the opinions of other friends during the discussion.

The importance of this interactivity in virtual learning has been discussed by many authors (Abrami, Bernard, Bures, Borokhovski, & Tamim, 2011; Anderson, 2008; Croxton, 2014; Moreillon, 2015; Woods & Baker, 2004). In practice, some studies show that one of the problems of long-distance learning during a pandemic is the lack of this interactivity (Coman, Țîru, Meseșan-Schmitz, Stanciu, & Bularca, 2020; Mahyoob, 2020). In the Indonesian context, a survey conducted by the Commission of Indonesian Children Protection (KPAI) in April 2020 showed that 79.9% of students reported no interaction in their online learning during the pandemic (Mediana, 2020).

To deal with the lack of interaction, G-Suite features could facilitate this interaction as far as teachers understand how to use it. For example, to maintain the interaction, a teacher can vary the streamlined written discussion on the Google Classroom by switching to another G-Suite application, Google Meet. G-Meet is a video conferencing application provided by Google for free. Teachers can integrate their G-Meet link in google class, so everyone can enter at any time to the link that is already available to carry out synchronous learning or virtual face-to-face learning in real-time.

As a video conferencing application, G-Meet is certainly a great application for implementing face-to-face virtual interactions. It is no wonder that this application is listed as one of the most downloaded applications after the pandemic (Kompas.com, 2020a). However, teachers need to ensure that interactions at G-meet should not be one-way. Teachers should avoid using G-meet only to deliver lectures in the form of presentations, then students solely listen, without adequate reciprocal interaction.

Mutual interaction at G-meet, for instance, can be done by increasing the duration of the discussion. If students have listened and studied the material that the teacher has uploaded in google classroom,

then when virtual meeting at G-meet, they are supposed to participate in a question and answer session, discuss and add explanations if it is unclear. When the discussion takes place, the teachers need to control the discussion not to be dominated by just one or two students.

As a follow-up to discussion activities or delivery of previously completed material, teachers need to design learning activities in the form of group work that allows students to collaborate in completing certain assignments or projects. For this collaborative work, teachers can use the breakout room facility on google meet. With the breakout room, students can discuss in separate groups at the same time. They can return to the large group when their small group activity is completed (see picture).

An alternative collaborative-work medium is to use Google Doc. Collaboration through video conferences is interesting because it can be a face-to-face virtual. However, there are always students who have problems with internet connection when working with video conferences such as G-meet. Thus, teachers need to design collaborative activities using other applications such as Google Doc.

In general, the working system of Google Doc is similar to Microsoft Office Word. The significant difference is that Google Doc must be accessed online. The convenience of working with Google Doc is that every document you do is automatically saved on Google Drive, so you can access it any time.

Another benefit of Google Doc is the file-sharing feature among other G-Suite users. Through the file-sharing feature, students can collaborate and work on certain tasks with other students under the teacher's control in real-time. English teachers, for example, can use this facility for deep peer-editing activities or collaborative writing in writing courses.

Furthermore, collaboration can also be done with other applications from G-Suite, such as Google Slides and Google Forms.

Google Slides is a PowerPoint creation application provided by Google. Like Google Doc, with file sharing facilities, students and teachers can work collaboratively to make PowerPoint slides. Teachers can also use Google Slides as a substitute for a virtual whiteboard, allowing students to write down answers or certain information there while learning is taking place.

Google Forms is another application by Google included in G-Suite for Education. Teachers and students can use Google forms to create specific forms for many purposes. For example, teachers can use a google form to collect student opinion related to particular themes or use it as a medium for implementing quizzes or exams. Meanwhile, students can also use the Google form feature to conduct surveys or collect data in completing assignments from teachers. Google forms can also be utilized collaboratively with many people or users. This is certainly will help students and teachers to continue working even though they cannot meet physically.

Of course, there are other applications that teachers and students can explore during lectures or classes. If teachers and students can carry out the points that we explained above, we are convinced that teachers can carry out some online learning principles. Online learning will be more interactive, students will be more active, and learning will be more effective. It is because of the establishment of a sense of community as a result of three essential processes of absorbing, doing, and connecting with other class members) through G- Suite for Education.

## **CONCLUSION**

This paper has discussed several basic theoretical and practical concepts of online learning design which are essential for teachers in the classroom practices. The concepts range from the ideas of students-centered learning, teaching presence, social presence, and cognitive presence leading to

the provision of community of inquiry during the virtual learning. The paper has also discussed how to implement these principles through Google Classroom as a part of the Google Suite for Education.

Based on the authors' experiences during the pandemic, G-Suite is an excellent alternative platform because it allows teachers to conduct synchronous and asynchronous lectures at any time. If explored and integrated with other free G-Suite applications (such as G-Meet, Google Doc, Google Form), it is a promising tool to be used as a learning platform during a pandemic or later after the pandemic ends. However, the discussion of this study is based mainly on secondary data such as books, journal articles, research reports, and newspaper articles. This limitation has probably affected the quality of this paper. Other researchers could have more research-based evidence about applying this topic in a different context later for their study.

## REFERENCES

- Abrami, P. C., Bernard, R. M., Bures, E. M., Borokhovski, E., & Tamim, R. M. (2011). Interaction in distance education and online learning: Using evidence and theory to improve practice. *Journal of Computing in Higher Education*, 23(2–3), 82–103. <https://doi.org/10.1007/s12528-011-9043-x>
- Alim, N., Linda, W., Gunawan, F., & Saad, M. S. M. (2019). The effectiveness of Google classroom as an instructional media: A case of state Islamic institute of Kendari, Indonesia. *Humanities and Social Sciences Reviews*, 7(2), 240–246. <https://doi.org/10.18510/hssr.2019.7227>
- Alterman, E. (2020). Lessons from Drive to Write Remote Instruction. *MDRC: Building Knowledge to Improve Social Policy*, 1(August), 1–2.
- Amalia, S. R., & Puwaningsih, D. (2020). Pengaruh Self Regulated Learning Dan Web Course Berbantuan Google Classroom, Whatsapp Group Terhadap Pemahaman Konsep. *AKSIOMA: Jurnal Program Studi Pendidikan Matematika*, 9(4), 917. <https://doi.org/10.24127/ajpm.v9i4.3009>
- Anderson, T. (2008). *Theory and Practice of Online Learning*. Edmonton: AU Press, Athabasca University.
- Andrade, M. S. (2015). Effective eLearning and eTeaching — A Theoretical Model. In *E-Learning - Instructional Design, Organizational Strategy and Management*. <https://doi.org/10.5772/60578>
- Atmojo, S. E., Muhtarom, T., & Lukitoaji, B. D. (2020). The level of self-regulated learning and self-awareness in science learning in the covid-19 pandemic era. *Jurnal Pendidikan IPA Indonesia*, 9(4), 512–520. <https://doi.org/10.15294/jpii.v9i4.2554>
- Bahasoan, A. N., Wulan Ayuandiani, Muhammad Mukhram, & Aswar Rahmat. (2020). Effectiveness of Online Learning In Pandemic Covid-19. *International Journal of Science, Technology & Management*, 1(2), 100–106. <https://doi.org/10.46729/ijstm.v1i2.30>
- Beritasatu.com. (2020). Hanya 8% Guru yang Paham Gawai untuk Pembelajaran Daring. Retrieved July 12, 2020, from Beritasatu website: <https://www.beritasatu.com/nasional/626343-hanya-8-guru-yang-pahamgawai-untuk-pembelajaran-daring>
- Coman, C., Țîru, L. G., Meseșan-Schmitz, L., Stanciu, C., & Bularca, M. C. (2020). Online teaching and learning in higher education during the coronavirus pandemic: Students' perspective. *Sustainability (Switzerland)*, 12(24), 1–22. <https://doi.org/10.3390/su122410367>
- Croxtan, R. (2014). The role of interactivity in student satisfaction and persistence in online learning. *Journal of Online Learning and Teaching*, 10(2), 314.
- Dechev, Y., Nikolov, B., & Rachev, M. (2020). Distance Learning at the Nikola Vaptsarov Naval Academy Utilising

- Online Platforms during the COVID-19 Crisis. *Information & Security: An International Journal*, 46(3), 293–303. <https://doi.org/10.11610/isij.4621>
- Dorel, M. (2020). *Using Google Classroom Successfully: a Case Study*. 40, 375–378.
- Fauzi, I., & Sastra Khusuma, I. H. (2020). Teachers' Elementary School in Online Learning of COVID-19 Pandemic Conditions. *Jurnal Iqra': Kajian Ilmu Pendidikan*, 5(1), 58–70. <https://doi.org/10.25217/ji.v5i1.914>
- Ghavifekr, S., & Rosdy, W. A. W. (2015). Teaching and learning with technology: Effectiveness of ICT integration in schools. *International Journal of Research in Education and Science*, 1(2), 175–191. <https://doi.org/10.21890/ijres.23596>
- Horton, W. (2012). *E-Learning by design* (2nd ed.). San Fransisco: Wiley and Sons.
- Jatisunda, M. G., Salim Nahdi, D., & Suciawati, V. (2020). Virtual Class During COVID 19: A Self-Regulated Learning Study Of Mathematics Pre-Service Teacher. *International Journal on Emerging Mathematics Education*, 4(2), 81. <https://doi.org/10.12928/ijeme.v4i2.16671>
- Koh, J. H. L., Chai, C. S., & Natarajan, U. (2018). Developing Indonesia teachers' technological pedagogical content knowledge for 21 st century learning (TPACK-21CL) through a multi-prong approach. *Journal of International Education and Business*, 3(1), 11–33.
- Kompas.com. (2020a, May 15). Layanan “Meeting Online” Google Meet Tembus 50 Juta Unduhan. *Kompas*. Retrieved from <https://tekno.kompas.com/read/2020/05/19/15180007/layanan-meeting-online-google-meet-tembus-50-juta-unduhannya?page=all>
- Kompas.com. (2020b, June 19). #BantuKuatkanGuru, Bentuk Gotong Royong bagi Guru Terdampak Corona. *Kompas*. Retrieved from <https://www.kompas.com/edu/read/2020/06/19/191142471/bantukuatkangurubentuk-gotong-royong-bagi-guru-terdampak-corona?page=all>
- Kultsum, U. (2020). Pendidikan Islam di Tengah Pandemi Covid-19: Upaya Membangun Empati Warga Sekolah Islamic Education During Pandemic Covid19: Efforts to Build Sense of Emphaty. *Ta'dib*, 23(2), 133–144.
- Lau, K. (2017). ‘The most important thing is to learn the way to learn’: evaluating the effectiveness of independent learning by perceptual changes. *Assessment and Evaluation in Higher Education*, 42(3), 415–430. <https://doi.org/10.1080/02602938.2015.1118434>
- Lie, A., Tamah, S. M., Gozali, I., Triwidayati, K. R., Utami, T. S. D., & Jemadi, F. (2020). Secondary School Language Teachers' Online Learning Engagement During the Covid-19 Pandemic in Indonesia. *Journal of Information Technology Education: Research*, 19, 803–832. <https://doi.org/10.28945/4626>
- Maharsi, I. (2018). Developing EFL Students' Learning Reflection and Self-Regulated Learning through Google Classroom. *ACM International Conference Proceeding Series*, 62–66. <https://doi.org/10.1145/3234825.3234841>
- Mahyoob, M. (2020). Challenges of e-Learning during the COVID-19 Pandemic Experienced by EFL Learners. *Arab World English Journal*, 11(4), 351–362. <https://doi.org/10.24093/awej/vol11no4.23>
- Maison, M., Kurniawan, D. A., & Anggraini, L. (2020). the Influence of Online Learning on Students' Awareness in Doing Assignments During Covid-19 Pandemic. *Ta'dib*, 23(2), 171. <https://doi.org/10.31958/jt.v23i2.2416>

- Mediana. (2020, April 27). Survei KPAI: Siswa Tidak Bahagia dengan Pembelajaran Jarak Jauh. *Kompas*. Retrieved from <https://www.kompas.id/baca/bebas-akses/2020/04/27/survei-kpai-siswa-tidak-bahagia-dengan-pembelajaran-jarak-jauh/>
- Moreillon, J. (2015). Increasing Interactivity in the Online Learning Environment: Using Digital Tools to Support Students in Socially Constructed Meaning-Making. *TechTrends*, 59(3), 41–47. <https://doi.org/10.1007/s11528-015-0851-0>
- Munir, S., Erlinda, R., & Arifnursalim, H. (2021). Students' View on the Use of WhatsApp during Covid -19 Pandemic: A Study at IAIN Batusangkar.
- Nadeak, B. (2020). The effectiveness of distance learning using social media during the pandemic period of covid-19: A case in universitas kristen indonesia. *International Journal of Advanced Science and Technology*.
- Naibaho, L. (2019). The Effectiveness of Independent Learning Method on Students' Speaking Achievement at Christian University of Indonesia Jakarta. *Asian EFL Journal*, 24(4), 128–142.
- O'Neil, C. A., Cheryl A. Fisher, & Susan K. Newbold. (2004). *Developing an Online Course: Best Practices for Nurse Educators*. New York: Springer Publishing Company.
- Prestiadi, D. (2020). Effectiveness of e-learning implementation as a distance learning strategy during coronavirus disease (covid-19) pandemic. *Proceeding International Webinar on Education 2020*, (5), 47–53. Retrieved from <http://journal.um-surabaya.ac.id/index.php/Pro/article/view/5950>
- Rahmadi, I. F. (2021). Teachers' Technology Integration and Distance Learning Adoption Amidst the Covid-19 Crisis: a Reflection for the Optimistic Future. *Turkish Online Journal of Distance Education*, (April), 26–41. <https://doi.org/10.17718/tojde.906472>
- Rusmiati, A. R., Reza, R., Achmad, S., Syaodih, E., Nurtanto, M., Sultan, A., ... Tambunan, S. (2020). The perceptions of primary school teachers of online learning during the COVID-19 pandemic period: A Case study in Indonesia. *Journal of Ethnic and Cultural Studies*, 7(2), 90–109.
- Schunk, D. H., & Zimmerman, B. J. (1998). *Self-regulated Learning: From Teaching to Self-reflective Practice*. New York: The Guilford Press.
- Sutiah, S., Slamet, S., Shafqat, A., & Supriyono, S. (2020). Implementation of distance learning during the covid-19 pandemic in faculty of education and teacher training. *Cypriot Journal of Educational Sciences*, 15(5), 1204–1214. <https://doi.org/10.18844/CJES.V15I5.5151>
- TJP. (2020, March 16). Studying from home: Seven online learning platforms for students. *The Jakarta Post*.
- Woods, R. H., & Baker, J. D. (2004). Interaction and immediacy in online learning. *International Review of Research in Open and Distance Learning*, 5(2). <https://doi.org/10.19173/irrodl.v5i2.186>