

A Meta-Analysis on Issues Related to Remote Learning Among Secondary School Teachers During COVID-19 Lockdown

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Abstract: COVID-19 is a very devastating disease that had forced schools to be closed all around the world for safety reasons. This research aims to explore issues related to remote learning secondary school teachers during COVID-19. Meta-analysis is used to gather data for this research and involved articles related to remote learning strategies practiced by secondary school teachers during COVID-19. The result shows that teachers use two different remote learning strategies, synchronous learning, and asynchronous learning strategies. While teachers have different opinions about the strategies, they agree that both are beneficial to student's learning. Result also shows that teachers also need to focus on the student's mental state by helping them cope with stress caused by COVID-19.

Keywords: COVID-19, remote learning, secondary school, stress, teacher

1. Introduction

In 2020, a momentous threat to public health appeared in a form of a virus called COVID-19. Precautionary measures such as consistent handwashing with soap or sanitizer, avoid gathering in large numbers and unnecessary travel to affected areas can suppress the spread of COVID-19 (Elengoe, 2020). To further stop the spread of the virus, Movement Control Order (MCO) was implemented by several countries, such as Malaysia. Government and private schools which include daily schools, boarding schools, international schools, and pre-university institutions were all closed (Aziz *et al.*, 2020; Elengoe, 2020).

Nonetheless, this doesn't mean the learning process stops for students in primary and secondary schools. Rather, teachers were forced to use different learning strategies to teach from afar. Information and communication technologies (ICT) tools are instrumental in helping teachers to adapt to online teaching during COVID-19 school closures (König *et al.*, 2020). One learning strategy employed by teachers is remote learning. Teachers need to identify which remote learning strategies suitable for their students according to their demography and ensure they can be conducted while avoid putting unwanted stress on their students.

1.2. Research Statement

COVID-19 pandemic has caused schools to be closed down temporarily and forced teachers to use remote learning strategies to teach students that were forced to stay at home due to safety reasons. Although many remote learning strategies can be used there are equally many issues that arise from it. Research needs to be conducted to explore issues related to remote learning among secondary school teachers during COVID-19 lockdown.

1.3. Research Objective

Explore issues related to remote learning among secondary school teachers during COVID-19 lockdown.

1.4. Research Question

What are issues related to remote learning among secondary school teachers during COVID-19 lockdown?

2. Literature Review

2.1 COVID-19

COVID19 is a nonstop occurrence of an unidentified acute respiratory tract infection was found in Wuhan City, Hubei Province, China, since 12th December 2019, COVID-19 was originated from the Hunan South China Seafood Market (Guo *et al.*, 2019). The virus, first described as novel severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), emerged in December 2019 from Wuhan City, Hubei Province, China, and spread to the rest of the world. This disease was later named COVID-19 by World Health Organization (Elengoe, 2020). COVID-19 is spread by asymptomatic infected individuals and symptomatic individuals by oral fluid droplets, mainly airborne through coughing or sneezing (Singhal, 2020). COVID-19 patients may suffer from very serious pneumonia, organ failure, acute respiratory tract infection, and septic shock, which can lead to death (Huang *et al.*, 2020).

Precautionary measures are very important to avoid and control the rapid spread of the COVID-19 virus. Such measures that need to be taken are regular handwashing with soap or sanitizer, avoiding handshaking, wearing masks and gloves, social-distancing, coughing into disposable tissues, avoidance of

gatherings, and unnecessary travel to affected areas can suppress the spread of viral infection (Elengoe, 2020). To further stop the spread of the virus, Movement Control Order (MCO) was implemented to restrict the spread of COVID-19 (Elengoe, 2020).

2.2 Remote learning

To continue a student's education and lessen the effects of long-term school absenteeism, schools have adopted remote learning. Remote learning is a term that means learning with a mixture of online and offline resources (Eemeret *et al.*, 2020). However, there are worries that the variability of engagement with remote learning may aggravate social dissimilarities (Andrew *et al.*, 2020). Access to digital technology is not consistently distributed and children in underprivileged homes are least likely to have access. Those with limited access to acceptable digital technology or from lower-income families are less likely to involve with remote learning (Andrew *et al.*, 2020; Lucas *et al.*, 2020).

3.1 Methodology

Meta-analysis is used to gather data for this research. Data were gathered by using two keywords identified earlier in the research objective. The keywords are learning and COVID-19, search in the Institute of Educational Science's website (ERIC.ed.gov) in one year from 1st January 2020 to 14th December 2020, which is the duration of the pandemic which have forced many schools in affected countries to conduct online classes rather than conventional classes. From the search, using the two keywords learning and covid-19, the researcher, the search result had yielded 620 journal articles.

The second step is to narrow down the search result to only include research focusing

on secondary school. This had further narrowed down the number to 76. The next step, which is the third step is to focus on the sample of the research, which is a teacher. This had reduced the number of search results to 23 articles.

The next step is to limit the type of source to journal articles. This had finally yielded 14 search results. Once the journal articles have been identified, the researcher continued with the process of identifying the remote learning strategies used by secondary teachers during COVID-19.

4.1 Data Analysis

Throughout the journals that were collected, each has been read to identify the main issues each of them carried regarding remote learning and matter related to remote learning strategies used during the COVID-19 pandemic, which had forced many schools to be closed in several countries, such as Malaysia (Aziz *et al.*, 2020; Elengoe, 2020).

Studying outside the classroom with students scattered in different places had forced the teacher to be creative and make a decision to choose strategies that best suitable for their students. According to Sperry & Scheibe, (2020), two remote learning strategies that are suitable to employ during COVID-19 are synchronous learning and asynchronous learning. Synchronous learning is conducted live and in real-time without any delay. Meanwhile, asynchronous learning is conducted not in real-time, instead, all the lessons have been recorded in advance and available offline instead of online (Sperry & Scheibe, 2020).

Daniel (2020) believes teachers, who used to teach in classrooms every day, need to take advantage of asynchronous learning. For most features of learning and teaching, the participants do not have to communicate at the same time. Asynchronous working gives

teachers freedom in preparing learning materials and enables students to alter the demands of house chores and study. Asynchronous learning works more effectively in digital formats. (Daniel, 2020)

Tan, *et al.*, (2020) share one type of synchronous learning, that is by using the Community of Inquiry (CoI) Framework to support remote teaching. Col comprises three elements. The first element is social presence, the second element, cognitive presence, and the last element is teaching presence (Tan, *et al.*, 2020). Through research, Tan, *et al.*, (2020) found that Col was successful in achieving engagement, active learning, and team teaching.

Bryce *et al.* (2020) share another learning method called bioinformatics workflow. It endorses original research and flexible thinking among students, which is intended to be accessible to students of all bioinformatics levels. Lee & Yeong (2020) suggested teachers use reciprocal teaching to involve students online instead of using the platform for didactic teaching by the teacher.

Emerling *et al.*, (2020) offer a unique alternative to learning during COVID-19 by using Amazon Alexa as an instructional tool. While many researchers suggest hi-tech teaching methods, (Selco, 2020) offers low-tech, hands-on experiments methods that can be used at home. There are many kitchens, drug stores, and garden chemicals that can be used to demonstrate the same principles in standard chemistry curricula at multiple levels.

Feldman (2020) brought a different view on how to give marks to students during COVID-19. According to Feldman (2020) by using a 0–100 scale it can give student stress. By contrast, Feldman (2020) suggested that teachers allow students to retakes papers, and replace the previous score with the new retake score. This method will allow students to learn

from blunders and have their grades reflect the most current and accurate description of their achievement, thus ultimately eliminate stress. Students overwhelmingly identify that retakes don't just give them a second chance at success; but they improve how the classroom feels (Feldman, 2020)

Hirsch & Allison (2020) offered five recommendations to educators on how to identify, build capacity for, and leverage high-quality instructional materials to support students, whether they are learning in the classroom, at home, or both. First, the teacher needs to make content the top priority. Second, leverage the quality curriculum to accelerate learning. Third, take time to analyze your remote learning options. Fourth, beware of marketing hype and sales spin. The final recommendation is to offer high-quality professional learning will be key (Hirsch & Allison, 2020).

Interestingly, apart from strategies to convey information, researcher meta-analysis also shown great concern from researchers regarding mental health issues faced by students that need to be addressed by teachers delicately. This is because some students feel stress and develop anxiety learning at home for several reasons. Researcher such as Wong, (2020), Minahan (2020), Helmke (2020) addresses these issues by suggesting several ways to manage the stress that can be practiced by teachers on their students.

Wong (2020) offers several recommendations on how students avoid stress. The first step is to support students at this time is to communicate with students. Next, teachers need to frequently show concern for students. Give them space to grow. This is because, throughout their lives, students will be confronted with problems that require them to learn to manage and accept changing situations.

Another researcher that offered ways for students to manage stress is Minahan (2020). First, teachers need to maintain connections with students. It's very important to help them continue to feel safe, cared for, and connected. Secondly, teachers need to respond to anxiety, fear, or panic shown by students. A teacher must validate the student's feelings and ask them to stay calm, be truthful, and avoid making negative comments. Notify parents if a student shows serious fear and anxiety. Next, teachers need to give students a sense of control. Empower students by letting them decide on some of the tasks so they will feel they are important. Apart from that, teachers need to understand not all children and teens respond to pressure the same way, so teacher need to be aware and refers to a list of common behavior changes that students might exhibit during this crisis 5. Teach Emotional- and Behavioral-Regulation Strategies to manage anxious feelings. (Minahan, 2020).

Helmke, (2020) agrees with Wong (2020) and Minahan (2020) on the importance of managing stress that occurs to students during COVID-16. Helmke, (2020) believes teachers should go beyond normal efforts because as leaders, they must model how to respect and care for colleagues. Teachers must go beyond their normal efforts to show respect for their staff to avoid giving the impression that teachers' presence is taken for granted (Porter, 2020). Next, teachers need to know how to manage expectations. because research has demonstrated that extreme stress hinders the ability to concentrate, remember, and think logically. Apart from that, a teacher must know when to ask for mental health support. Experts recommend that individuals understand how their bodies and minds hold stress and how to release it (National Association of School Psychologists, 2020) Lastly, teachers must be a

model for caring communities. Individually and collectively, we may feel that we're fighting to return to normal, or we may be fighting for change, but fall has brought the return of school, and no one is standing still.

5.1 Conclusion

Data shows that teachers were very creative to use different remote learning strategies to teach students that were forced to stay at home because of safety reason. Two strategies that teachers were synchronous learning and asynchronous learning (Daniel, 2020; Sperry & Scheibe, 2020). Synchronous learning means learning live in real-time with teachers meeting students virtually using video apps such as Zoom and Google Meet. The second strategy is asynchronous learning, the complete antithesis of synchronous learning. The teacher uses a tool that can be recorded or viewed later by students either with or without internet connections. While the tools can be varied the two strategies are very consistent across the board. Researchers have mixed reactions to both strategies but agree that both are effective in teaching students in a non-traditional setting, not in the same classroom or even at the same time. The evaluation process also needs further revision by allowing students to retake the test and allow students to learn from mistakes earlier (Feldman, 2020).

Researcher's concern on student's mental health during the COVID-19 pandemic (Wong, 2020; Minahan, 2020; Helmke, 2020). Research had revealed that one in three teenagers has gone through clinically significant anxiety in their lifetime (Merikangaset *al.*, 2010). Apart from using remote learning strategies to teach school syllabus, teachers and counselors also reached out to students to ensure they are in a healthy state of mind and not feeling stress out. Here, researchers offer

ways how to resolve stress and pressure faced by students, which can also be done remotely and not exclusively through face-to-face sessions only. This shows educators show a deep concern towards students and offers a holistic approach to learning by not only focusing on academic but healthy emotional growth.

5.2 Discussion

During the recent COVID-19 pandemic, students were forced to stay indoors and practice remote learning. Teachers have to be creative and adopt a suitable method to teach students effectively either synchronous or asynchronous learning. Nonetheless, being locked up indoor can also cause stress for students. Researchers stress out the important several strategies to manage stress so the teacher will not neglect the mental health of each of their students. This will ensure a balanced and harmonious existence between intellect and a healthy state of mind.

To be more prepared for other medical catastrophes that might befall us in the future which would force teachers to conduct remote learning similar to the current situation, a teacher should be given adequate training on the latest remote learning strategies and tools. The government must periodically update the internet and other related technology that could assist in remote learning to ensure no students will lack behind in their education, while keeping students stress-free, regardless of the situation.

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