

REMOTE LEARNING AMID A GLOBAL CRISIS: A LITERATURE REVIEW

Constantino Terrenal Ballena^{1*} (<https://orcid.org/0000-0002-8772-0881>)

Bernard S. Feranil² (<https://orcid.org/0000-0003-3638-2621>)

^{1*} College of Liberal Arts and Communication, De La Salle University-
Dasmariñas, Cavite, Philippines.

² Department of Humanities, College of Arts and Sciences, Cavite State
University, Indang Cavite, Philippines.

ABSTRACT

The purpose of this paper is to examine extant literature which focused on remote learning in the context of the Covid-19 pandemic. It follows qualitative research design particularly thematic synthesis in reviewing and analyzing 102 research articles published from February 2020 to December 2020. These articles, which reflect the experiences of 34 countries across the globe, are methodically selected following inclusion and exclusion criteria. The thematic analysis results in four major themes which are: 1) concerns about the shift to remote learning, 2) impact of remote learning, 3) challenges in the shift to remote learning; and 4) coping with the challenges in remote learning. These four salient themes show how the transition from face-to-face to remote education has confronted and made an impact on all teachers, students, parents, and administrators. These circumstances reaffirm the opportunities to harness educational institutions' resilience, motivation, and competencies as participants in the education process. While national and institutional support is made available, it is clear that both the pandemic and remote learning have obliged stakeholders of education to become more inventive and collaborative in the teaching-learning process as a way to cope with the challenges. The study recommends conducting a more inclusive literature review of relevant research articles that are published beginning 2021 to determine how all stakeholders of the teaching and learning process have adjusted during the second year of this crisis.

Keywords: Covid-19 pandemic, distance learning, online education.

Introduction

Even before the surge of a global crisis, remote learning has already been used as a form of education where the student and the educator are not in a face-to-face mode in a conventional classroom setting. Information is relayed through advanced communication tools, such as discussion boards, video conferencing, and distance assessments. According to Laschewski (2011), remote or online learning is defined as a collection of learning arrangements comprising of three building blocks, specifically, modern information, communication technologies (personal computer or other devices), and the Internet. On the other hand, computer-based, web-based, technology-based learning, and virtual education opportunities are categorized as the applications and processes involved to further scaffold online learning (Reshma et al., 2017). With the advancement of technologies, the addition of social media and Web 2.0 machineries into the picture catalyzes to augment online learning experiences as they are reported to be the most favored tools available to the present (Vaughan et al., 2013).

Meanwhile, in an unprecedented turn of events, the Covid-19 pandemic has transformed the way students are educated around the globe within a short period (Chung et al., 2020). This global crisis has exposed incipient vulnerabilities in educational systems around the world. Ananga (2020) argues that as the world continues to endure these unfortunate realities of COVID-19 and its challenges especially in the education sector, appropriate strategies need to be adopted to continue to engage learners for teaching and learning. Against the backdrop of this virus outbreak, countless policy initiatives are being propelled by the governments and educational institutions across the world to continue teaching activities all the while containing the virus. In addition, there is ambiguity and disagreement about what to teach, how to teach, the workload of teachers and students, the teaching environment, and the implications for education equity (Zhang et al., 2020).

Ali (2020) asserts that universities and educational institutions worldwide are moving aggressively towards online learning or E-learning and with the sudden shift to emergency remote learning during the pandemic, this e-learning appears to be the spotlight on learner's needs as these are the focus of all educational processes. Siron et al. (2020) investigated factors affecting the use of e-learning during the Covid 19 in Indonesia and concluded that the students' intention in using remote learning was due to numerous variables such as perceived enjoyment, students' experience, computer anxiety, and perceived self-efficacy. In Pakistan, a study on the attitudes of higher education students towards obligatory distance education reports that a massive majority of learners are unable to access the internet due to technical as well as financial constraints (Adnan & Ankar, 2020).

In terms of the current status of learning amidst the pandemic, a study on online education reveals that some of the challenges faced by teachers and students include internet connectivity, infrastructure and system; interaction, interest and commitment; literacy problems; inadequate synchronous/online class count and duration, and poor parent-student-teacher cooperation (Aydin & Erol, 2020). Furthermore, findings from the study of Dawadi et al. (2020) indicate that the pandemic has had serious impacts on students' learning and well-being and that it potentially widens the gap between advantaged and disadvantaged learners in their equitable access to quality

education. It was also supposed that the challenges experienced by the education sector are mainly due to the government's faulty implementation strategies and inability to implement those policies as Gamage et al. (2020) asserted that there is still a lack of institutional provisions for academic integrity management in the context of Covid-19. In South Korea, one study found that the factors such as classroom interaction, student motivation, course structure, teacher knowledge, and class facilitation are positively influencing students' satisfaction and learning outcomes amidst the pandemic (Baber, 2020). In New Zealand, Hodges and Martin (2020) reported that from the students' perspective, their online initiatives enriched capability but required adaptability, flexibility, and resilience. In terms of the teaching process, a study in India concludes that educators face tons of challenges in online teaching, the most common is the lack of technical facilities, constant family disturbances, absence of clarity and direction, and deficiency of technical knowledge (Joshi & Bhaskar, 2020). Meanwhile, in the belt of Science education, Landicho (2020) highlights that the most evident change prompted by the shift to online education is the nonexistence of laboratory activities where students need to conduct real-life science experiments. Teachers also had to struggle with how to conduct laboratory classes under safe distancing and how to substitute traditional, high-stakes written assessments (Lau et al., 2020).

From one country to another and from various fields of discipline, insulating the consequences of the unexpected shift to remote learning on the teaching-learning process is indeed challenging, considering the lack of distinction in the timing over which most universities and educational institutions shifted to online, and because of the parallel health, economic, and other critical encounters that may also affect students' academic success. Relevant studies would appear to have diverse results when placed in a global perspective. Given the many relevant studies that deal with Covid-19 and distance education, only one academic paper written by Pokhrel and Chhetri (2021) had been carried out so far to analyze published researches focusing on the impact of the Covid-19 pandemic on online teaching and learning. Consequently, this paper aims to provide a more comprehensive and more in-depth literature review taking remote learning from a global standpoint.

Objectives of the Study

This study generally intended to conduct a literature review and analysis of the teaching and remote learning experiences of education institutions across the globe amid a global crisis. Specifically, the paper attempted to identify the dominant themes that ran across the literature which focused on remote learning. The results of this study could be an invaluable reference by future researchers whose studies focus on post-pandemic online-learning modality.

Framework of the Study: Thematic Synthesis

Literature reviews may either be an integral part of a research project or a stand-alone study (Xiao & Watson 2016 as cited in Templier & Paré 2015). Stand-alone literature reviews abound, and these have been conducted following appropriate typology depending on their purpose. Among the types of literature reviews, systematic review, meta-analysis, literature review or narrative review, and thematic synthesis appear to be the most commonly used as a framework (Grant & Booth, 2009; Neely et al., 2014; Oosterwyk et al., 2019; Xiao & Watson, 2016; Synyder, 2019; Thomas &

Harden, 2008). The present study was anchored on thematic synthesis, which utilizes thematic analysis to extract and synthesize data (Xiao & Watson, 2016; Oosterwyk et al., 2019; Neely et al., 2014; Thomas & Harden, 2008). The resulting themes “are used to answer the research question” (Thomas & Harden 2008 as cited in Xiao & Watson, 2016, p. 101). Thematic synthesis served as the framework of the present study in conjunction with Cooper’s (1988) resulting in the authors’ modified framework in Figure 1, which outlines five steps.

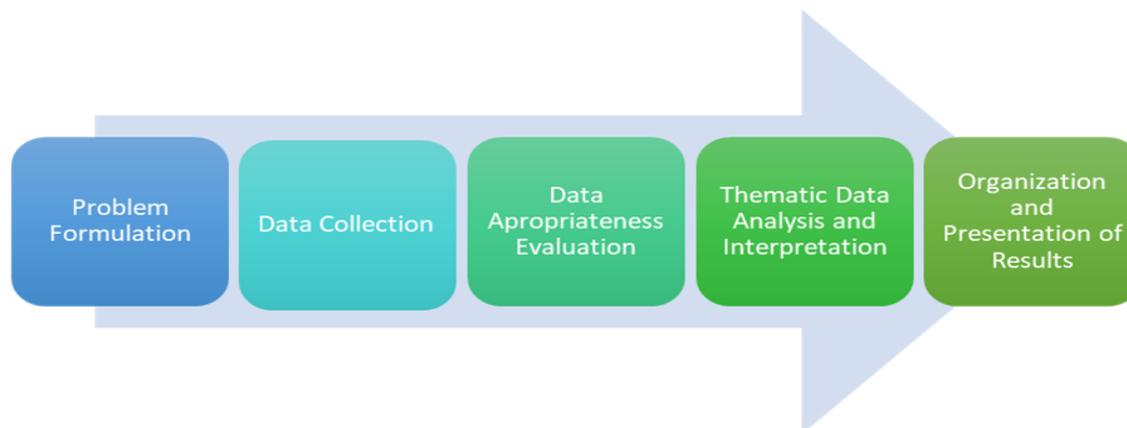


Figure 1: Literature Review Framework

These steps include (1) **problem formulation**, which clearly stipulates what researchers intend to do (goals or objectives) with the plethora of literature on a particular topic, it likewise describes the audience for whom the review is intended; (2) **data collection**, which highlights the ways by which these literature or studies will be gathered; (3) **data appropriateness evaluation (coverage)**, which underlines the researchers’ thorough sifting through the collected literature in order to exclude those that are not directly responsive to the goal of researchers as outlined under the problem formulation; (4) **thematic data analysis and interpretation**, which underscores the steps that will be carried out in thematically analyzing the collected literature (Thomas & Harden 2008 as cited in Xiao & Watson, 2016, p. 101); and (5) **organization and presentation of results**, which accentuate not only how the findings of the review are to be organized and presented vis-à-vis its goals or objectives but also the point of view (perspective) that the researchers take in discussing the results.

Method

Research Design

This study followed qualitative research design in light of Thomas and Harden’s (2008 as cited in Xiao & Watson, 2016, p. 101) thematic synthesis and Cooper’s (1988) procedure for synthesizing literature were utilized as a framework for the problem formulation, data collection, data appropriateness evaluation, data analysis and interpretation, and organization and presentation of results. For this study, remote learning is defined as a process of learning where the student and the educator, or information source, are not physically present in a traditional classroom environment. Information is relayed through technology, such as discussion boards, video conferencing, and

online assessments. The focus of this study is to review the literature on remote learning experiences of educational institutions during the surge of the Covid-19 pandemic in 2020.

Data Collection Technique and Data Appropriateness Evaluation

The purpose of data collection was to find empirical studies be they quantitative, qualitative, or mixed methods conducted on remote learning amid the Covid-19 pandemic in online education published in peer-reviewed journals from February 2020 to December 2020. The data collection had three major sources, namely, electronic databases; backward searching; and forward-searching (Oosterwyk et al., 2019; Xiao & Watson, 2016). The first included Web of Science, EBSCO, and ProQuest; Google Scholar, Directory of Open Access, Journals Educational Resources Information Center (ERIC), JSTOR, and International Teaching and Learning Journals were likewise used. Backward searching, on the other hand, was undertaken to cull relevant journal articles by using the list of references found at the end of a journal article. Lastly, the authors identified journal articles that have cited some important articles that were included in the review; Google Scholar and the ISI Citation Index were utilized for this purpose.

In light of Xiao and Watson (2016), the following keywords, which were derived from the objective of the present study were used: “education and Covid-19 pandemic”, “distance education during a pandemic”, “distance learning during Covid-19”, “online learning in the middle of Covid-19 pandemic”, “Online teaching strategies during Covid-19 pandemic”, “e-learning”, “remote learning”, “e-learning and pandemic” “remote learning and Covid-19”, “challenges and issues in remote learning”, “shift to distance learning”, “continuous learning during Covid-19”, “remote learning readiness” “Coronavirus and online learning”, “home learning during a pandemic” and “distance education challenges”.

To make the data collection and selection process very systematic, inclusion and exclusion criteria were in place following Oosterwyk et al. (2019), and Xiao and Watson (2016). The level of education, where remote learning was utilized (primary, secondary, undergraduate, or graduate), was not considered as a factor for exclusion or inclusion of the studies. The context or country by which the studies were conducted was also not a gauge in selecting the articles. The articles were sourced across countries. However, the period from which these articles were published was an important factor for determining the appropriateness of the literature to be included in the corpus of the present study. This period for selecting the data was crucial because February 2020 to December 2020 was considered as the transitional stage of almost all learning institutions to online or remote learning due to the Covid-19 pandemic. The focus of data collection was to include all forms of online or remote learning amid the Covid-19 pandemic regardless of the level of students. Finally, the literature to be included in the present review should be full-text peer-reviewed research journal articles. Papers that were published as abstracts only were not included in the review. After a thorough data appropriateness evaluation (a process of inclusion and exclusion) of all the collected research articles, a total of 102 articles constituted the corpus as shown in Table 1.

Table 1: Countries Represented in the Literature Review

Countries	f
USA	20
Indonesia	14
Turkey	8
UK	6
China	5
India	5
Malaysia	5
Ghana	3
Pakistan	3
Philippines	3
Canada	2
Namibia	2
Nigeria	2
Singapore	2
South Korea	2
Spain	2
Australia	1
Bangladesh	1
Belize	1
Bhutan	1
Bulgaria	1
Ethiopia	1
Republic of Fiji	1
Italy	1
Kenya	1
Morocco	1
Nepal	1
New Zealand	1
Oman	1
Palestine	1
Saudi Arabia	1
South Africa	1
United Arab Emirates	1
Zambia	1
TOTAL	102

The USA and Indonesia topped the list with 20 and 14 articles respectively. The majority of the countries represented had only one article each. Finally, 79 or 77.45% of the 102 articles had undergraduate or college level as their research context; 16 or 15.69% had Pre-K to post-secondary; six (6) or 5.88% had across-level context (primary to college), and one (1) or 0.98% had graduate education as its context.

Data Analysis

Content analysis (Merriam & Tisdell, 2017) and thematic analysis (Xiao & Watson, 2016) were used to analyze the corpus based on the main topic of the studies. It is described as a method to classify written or oral materials into identified categories of similar meanings (Moretti et al., 2011). After thoroughly studying the corpus, the 102 articles were initially categorized into major topical themes. New themes were added until data themes reached saturation, which means that all new data could be categorized under the already developed themes. All of these articles were tabulated using three columns: column 1, Research titles and corresponding authors; column 2, Background and Objectives of the study; and column 3, salient findings. Next, the salient findings across the articles were subjected to axial coding (Merriam & Tisdell, 2017), which is comparing and contrasts them to come up with common themes. The themes were finalized following Ballena and Liwag's (2019) CERES criteria namely: Conceptual Congruence; Exhaustiveness, Responsiveness to the research objectives, Exclusivity of themes, Sensitivity to the qualitative data.

Results

After a thorough content and thematic analysis of the 102 research articles related to remote learning during the Covid-19 pandemic, the study found four major themes that emerged from the recurring initial codes after doing the axial and selective coding namely: 1) concerns about the shift to remote learning, 2) impact of remote learning, 3) challenges in remote learning and 4) coping with the challenges in remote learning.

Concerns about the Shift to Remote Learning

Concerns about the shift to remote learning came out to be one of the themes established during the literature review. The subthemes herein including their frequency of occurrences in literature are shown in Table 2.

Table 2: Concerns about the Shift to Remote Learning

Shift to Remote Learning	f
Students' constructive attitude	19
Teachers' preparedness	13
Management/ Institutional preparedness	13
Proactive transition to remote learning	6

Students' constructive attitude was the foremost major sub-theme (19) found in the literature when educational institutions abruptly shifted to remote learning from the traditional face-to-face mode. Given the shift to remote learning due to the global crisis, students in higher education institutions exhibited a constructive attitude towards online learning modality (Unger & Meiran, 2020; Syauqui, et al., 2020; Pasaribu & Dewi, 2020; Smith, 2020; Allo, 2020). Undergraduate students did not exhibit resistance to a distance learning environment and did not have difficulties accessing online learning (Unger & Meiran, 2020; Syauqui, et al., 2020). Moreover, university students were observed to be more articulate with their feelings and opinions through various online resources and reported general satisfaction with online transition (Pasaribu & Dewi, 2020; Smith, 2020; Allo, 2020). High school students, on the other hand, favored attending school over the remote learning modality which compelled them to stay at home due to the pandemic (Yates, et al., 2020).

Teachers' preparedness, on the other hand, came second (13). Prospective teachers exhibited good tech skills to engage in online learning activities and had the necessary technological tools to facilitate online interactions (Mulenga & Marban, 2020). Lecturers in universities possessed intermediate digital proficiency which meant that they were able to use a range of applications effectively (Pete & Soko, 2020). Additionally, teachers feel well-equipped to provide remote learning support for pupils but are quite unsatisfied with the quality of their home working environment (Lucas, et al., 2020). It is noteworthy that in terms of teacher preparedness, teachers' ICT competence is an important element in their efforts to adapt to online educational technologies (Wen & Tan, 2020). Teachers who were able to adapt to this new context are becoming online

teachers while navigating new subject positions (Jocuns et al., 2020). Teachers were also successful in carrying out online learning activities and giving student works synchronously or asynchronously depending on school policies (Atmojo & Nugroho, 2020). Teachers across K-12 levels have also demonstrated preparedness to cope with the challenges that go with the shift to remote learning; they have shown pedagogical practices that fit the level of their pupils (Song et al., 2020).

Management of institutional preparedness, as a sub-theme also came second. Critical to the implementation of remote learning is the earning management system (Young & Donovan, 2020; Atmojo & Nugroho, 2020) and the use of resources such as laptops, mobile, and smartphone devices (Pete & Soko, 2020; O'keefe et al., 2020). Ananga (2020) was convinced that e-learning delivery should become an option for higher education so the management had to adopt a macroscopic perspective of overall planning (Song et al., 2020).

Proactive transition to remote learning was exhibited when there was a quick transition to the online form of education due to the onset of the pandemic nature of the COVID19 virus. Teachers and school principals held a proactive attitude and displayed a high degree of psychological adaptation in transitioning to a new pedagogical model, swiftly adjusting their mindsets and proactively facing the challenges (Basilaia & Kvavadze, 2020; Song et al., 2020).

By and large, teachers' preparedness, the management or institutional preparedness, proactive transition to remote learning were subthemes that cut across primary through secondary education and the higher education institutions in their shift to remote learning due to the pandemic.

Impact of Remote Learning

As education institutions struggle to cope with this global crisis, all stakeholders experience the unforeseen impact of remote learning due to the Covid-19 pandemic. Hence, the second theme. The subthemes herein including their frequency of occurrences in literature are shown in Table 3.

Table 3: Impact of Remote Learning

Impact of Remote Learning	f
Positive behavioural intention and achievement of learning success	5
Increase in independence and social engagement	5
Maintaining student learning experience	5
Increase in course withdrawal and failure	3
Parent and student satisfaction	3
Resilience of educators	1
Students' self-development and evaluation	1
Unity among stakeholders	1
Development of digital compassion	1
Teacher performance and quality of education	1

Results of the analysis revealed that *positive behavioral intention and achievement of learning success* were some of the major impacts of remote learning. Wilson et al. (2020) argue that the

effectiveness of online learning, student autonomy, and self-regulation, the impact of social connections, and the contextual space in which these variables are present contribute to the overall higher education learning success. Furthermore, students' and instructors' characteristics, internal motivation, infrastructure, and system quality, course and information quality, and the learning environment all had a positive and significant effect on online learning in the context of Islamic Religious Higher Education (Yudiawan et al., 2020). From students' perspectives, their online initiatives enriched capability but required adaptability, flexibility, and resilience (Hodges & Martin, 2020).

Another impact of remote learning is an *increase in independence and social engagement*. The literature shows that online learning has offered the students under discussion with opportunities to exercise learner autonomy and enhance social engagement (Pasaribu & Dewi, 2021). It was also observed that in online environment students work more easily in individual tasks, but not in team works. (Angelova, 2020). Interestingly, students were able to find a “voice” in the online learning environment which they could not in normal classroom interaction; notably, though, there has been an increase in independence and social engagement especially students in higher education than students in middle schools (Jocuns et al., 2020).

Remote learning also had an impact on *maintaining the student learning experience* because of the existence of an operating virtual campus and an online library that made the transition easier (Nogales-Delgado, 2020). The effectiveness of higher education's ability to transition to online platforms while maintaining value within the student learning experience was also noteworthy (Wilson, et al., 2020). Further, access to IT, their parents' engagement, and the type of support received from their schools were important factors that affect pupil engagement level in the primary and secondary levels (Lucas, et al., 2020). The parental engagement was not a factor affecting university students' online learning experience.

On the contrary, remote learning amidst the pandemic resulted in a *decrease in course completion and increase in course withdrawal and failure* as faculty experience teaching a course online did not mitigate the negative effects of moving to virtual instruction (Bird, et al., 2020). Furthermore, the uncertainty generated at all levels might have caused some discouragement, feeling of isolation and this may have affected the students' study process (Nogales-Delgado, 2020). Despite the said negative impact, the analysis revealed *parent and student satisfaction*. Parents of middle school students were generally in favor of the use of the online platform to supplement in-class face-to-face education (Tanık-Önal & Önal, 2020). It was also found that interaction in the online classroom, student motivation, course structure, instructor knowledge, and facilitation—are positively influencing students' perceived learning outcomes and student satisfaction (Baber, 2020). Students also manage to focus better in online lectures (Angelova, 2020).

Other impacts of remote learning include the *resilience of educators* at the elementary, middle, and high school levels (Fackler & Sexton, 2020); *students' self-development and evaluation*, where undergraduate students could self-evaluate the development of their skills using judgment resources (Pasaribu & Dewi, 2021); *unity among stakeholders* wherein governments, schools, social organizations, school committees, parents came to sit together to determine and formulate online learning goals that are in line with a national curriculum based on humanism (Rusi, 2020);

development of digital compassion, as observed in the students’ reflective writings (Pasaribu & Dewi, 2021). Finally, the literature reveals that remote learning has impacted *teacher performance and quality of education* most especially the primary school teachers who needed to make many pedagogical adjustments with their pupils (Rusi, 2020).

Challenges in Remote Learning

With the sudden shift of education to remote learning, some challenges were identified by numerous researchers. These challenges as well as their frequency of occurrences in literature are shown in Table 4.

Table 4: Challenges Encountered in Remote Learning

Challenges in Remote Learning	f
Poor Internet connectivity and accessibility issues	29
Lack of social interaction and student engagement	17
Lack of technological resources or devices and/ or poor network infrastructure	13
Lack of training, technical knowledge and online pedagogical competencies	7
Inadequate feedback and assessment strategies/ maintenance of academic integrity	7
Negative attitude and/ or perception	6
Unfavourable home learning environment	5
Lack of practical, laboratory and off-campus activities	3
Deficit in curriculum planning and preparation	3
Inadequate synchronous class time	3
Unsatisfactory national/ institutional support for students	3
Emotional tension and psychological stress	1
High cost of data and internet packages	1
Over exposure to online class	1
Use of maladaptive strategies	1

A thorough analysis showed that across countries, *poor Internet connectivity and accessibility issues* were the most pressing challenge that confronted the delivery of instruction when educational institutions across levels shifted to remote learning due to the pandemic. To mention a few from the review, Pete and Soko (2020) noted that in Ghana, Kenya, and South Africa, there is an alarming substantial digital differentiation in terms of internet accessibility among university lecturers and learners. Similarly, in Pakistan, many undergraduate and graduate students did not have internet access because of technical and economic issues (Adnan & Anwar, 2020). In the US, many families lack broadband access at home and may rely on adults’ mobile devices that have limited data plans (Young & Donovan, 2020); while in China, unstable Internet connections are one of the major factors to affect the effectiveness of online classes (He & Xiao, 2020).

The second most pressing challenge was *the lack of social interaction and student engagement*. To note a few, Adnan and Anwar (2020) found that undergraduate and graduate education students in Pakistan underscored the following issues: lack of face-to-face interaction with the instructor, response time, and absence of traditional classroom socialization. In Turkey on the other hand, “[s]tudent participation problems, . . . limited interaction, student disinterest, and frivolity, when

compared to face-to-face education”, were among the important findings of Aydin and Erol (2020, p.68). In the US, lack of personal interaction, and overall decreased ability to learn entirely online were identified as challenges to continued academic success (Unger & Meiran, 2020). In South Korea, educators reported unenthusiastic involvement of students, and the learners were merely submitting assignments (Yu & Jee, 2020). Finally, the issue of student engagement has not only been underscored in higher education but also primary and secondary schools (Lusa et al., 2020).

The third challenge was the *lack of technological resources or devices and/ or poor network infrastructure*. Zhang et al. (2020) noted that online teaching in China is constrained by infrastructure. In Pakistan, student participation in online classes is reportedly minimal due to the limited or non-availability of e-devices for all students at home (Noor et al., 2020). Meanwhile, in the Philippines, students were not ready to cope with the paradigm shift based on not having a computer of their own for school works (Ochavillo, 2020). Lack of technological resources, internet, appropriate learning environments, learning opportunities, and appropriate resources for online or distance education are also noted in Turkey (Dayumgac et al., 2020).

Another challenge found in the literature is the *lack of training, technical knowledge, and online pedagogical competencies*. To cite a few, Joshi et al. (2020) note that lack of training, lack of clarity and direction, lack of technical knowledge were evident among educators in India. Unfamiliarity with e-learning is likewise a challenge in Indonesia (Octaberlina & Muslimim, 2020). Lack of knowledge about how to evaluate the learners’ knowledge and skills through e-learning is also a challenge observed in Turkey (Korkmaz & Toraman, 2020). In China, the proportion and efficiency of the use of online teaching resources are still rather low since many teachers had no previous experience in online teaching (Zhang et al., 2020).

Inadequate feedback and assessment strategies/ maintenance of academic integrity is another challenge observed across the literature. Concretizing this challenge is the lack of nonverbal communication as an effective communication strategy in classroom discourse (Jocuns et al., 2020); difficulty in providing feedback to students and not being able to reach all the learning outcomes determined for learning (Korkmaz & Toraman, 2020); and lack of institutional provisions for academic integrity management in the context of COVID-19 (Gamage et al., N. 2020).

A negative attitude and/ or perception about remote learning is a challenge that can be attributed to a lack of student motivation, school/university administrators’ attitudes, and behaviors towards educators who teach online during the obligatory online education period (Korkmaz & Toraman, 2020). Sadly, some students even perceived that online learning constricted them to a particular style; others even felt that it was a waste of time. (Lau et al., 2020). It can be noted that the widening of education's digital divide may also cause these negative attitudes towards online education (Shraim & Crompton, 2020).

In the literature review, *an unfavorable home learning environment* is likewise seen as a challenge. This is where students’ working or studying space is not conducive for learning (Kaisara, & Bwalya, 2020); and disturbance at home is observed (Faize & Nawaz, 2020). Having an unfavorable home learning environment as a challenge has been stressed greatly in primary and secondary pupils (Blagg et al., 2020).

The *lack of practical, laboratory, and off-campus activities* is a challenge that impedes the effectiveness of remote learning (Faize & Nawaz, 2020). The absence of laboratory activities, field visits, and other off-campus engagements (e.g., tours), and the sudden shift to online delivery of lessons may also hamper students' progress (Landicho, 2020).

The deficit in curriculum planning and preparation can be a reason that the teacher managing classes in online learning are still not in line with student expectations (Syauqi et al., 2020). Consequently, *Inadequate synchronous class time* was also observed where most pupils spent less than three hours per day on remote learning activities in the US. (Eivers et al., 2020). Likewise, in Turkey, there was an observable inadequate synchronous /online class count and duration for students' online learning (Aydin & Erol, 2020).

Unsatisfactory national/ institutional support for students is observed among the literature as a challenge since multiple inequalities of rural students make them in a disadvantaged position compared to urban students (Belay, 2020). The pandemic potentially widens the gaps between advantaged and disadvantaged children in their equitable access to quality education (Dawadi et al., 2020). Jones and Sharma (2020) commented that students are deprived of quality education at present because of inadequate preparation by educational institutions for such a mode of teaching.

Other salient challenges that were observed in the literature are *emotional tension and psychological stress*, where students are noted to exhibit some degree of emotional tension and stress, which warranted emotional adjustment (Song et al, 2020); *high-cost data and internet packages* (Noor et al., 2020); *Overexposure to online class* (Jocuns et al., 2020) and students' *use of maladaptive strategies* (Munsell et al., 2020).

Coping with the Challenges in Remote Learning

Unfazed by the foregoing challenges encountered by the various institutions which boldly opted to shift to remote learning, they found ways to continue delivering instruction in a fully online modality. Table 5 shows the various ways institutions undertook in braving the challenges they experienced.

Table 5: Coping with Challenges in Remote Learning

Coping with Challenges In Remote Learning	f
Technical resolutions	24
Pedagogical strategies	10
Institutional and management strategies	9
Motivation, competency and skills development	6
Psychological and social support	4

Across the literature, a *technical resolution* is observed to be the most significant practice to cope with the challenges brought about by the shift to remote learning. This includes the following: (1) utilization of various learning and meeting applications and social media platforms (Chukwuemeka et al., 2020; Rini et al, 2020; Romero-Ivanova et al, 2020; Oznacar & Mehtap,

2020), (2) the use of TV and radio education (Belay, 2020; Chukwuemeka et al., 2020), (3) investment in faster internet devices and enhanced network capacity to mitigate the slow internet connection (Ilonga et al. 2020; Ali, 2020), (4) the use of virtual laboratories, remote control labs or video-based laboratories and online simulations (Gamage, et al., 2020), (5) the use of smart tools in teaching (Zayapragassarazan, 2020), (6) continuous strengthening technical infrastructure and (7) determining cyber security strategies (Tosun, 2020).

Several *pedagogical strategies* were also identified by many researchers to help relieve the challenges of remote learning. These approaches can be summarized as follows: (1) integration of research and exploration to increase future teachers' abilities to conduct experiences in their future classrooms (Brown, 2020); (2) utilization of collaborative learning approaches and embracing a team approach to teaching, with a common curriculum at the center (Oznacar & Mehtap, 2020; Pace et al., 2020; Vanourek, 2020), (3) the use offline teaching strategies such as printed teaching materials, modules, textbooks to support the success of online learning (Rusi, 2020), (4) incorporating authentic assessments and personalized learning resources during online classes (Pace, et.al, 2020); (5) formation of students' e-learning circles, initiation of online discussion forums and online mentoring (Zayapragassarazan, 2020) and lastly, (6) the use of seven principles for good online teaching which are (a) encouraging contact between students and faculty, (b) developing reciprocity and cooperation among students, (c) encouraging active learning, (d) giving prompt feedback, (e) emphasizing time on task, (f) communicating high expectations, and (g) respecting diverse talents and ways of learning (Munna & Shaikh, 2020).

The use of effective institutional and management strategies also helped in hurdling the challenges. Some of the strategies highlighted in the literature include re-creating the structure of the regular school day and regular grading practices (Vanourek, 2020), maintaining sustainable academic support and communication, imposing legal resolutions and restructuring, ensuring a sufficient number of qualified personnel for online teaching and non-academic processes (Tosun, 2020), school principals' macroscopic planning and strategizing and school teachers' microscopic viewpoint for teaching practices in K-12 education (Song et al., 2020)

Few other ways of coping with the challenges of remote learning include encouraging teachers across levels of education to maintain *motivation*, and undergo *competency and skills development* in using the online learning system (Young & Donovan, 2020). Finally, providing sustainable psychological and psychosocial support is also another way to cope with the challenges; this can be done using meeting students' social, emotional, and nutritional needs, reaching out to individual students and families regularly, and by providing online mental health services (Vanourek, 2020).

Discussion

This study analyzed available research articles on the shift to remote learning amid the COVID-19 pandemic; a majority of these articles were in the context of higher education (undergraduate education) followed by articles in the context of primary to postsecondary levels. It utilized a modified version of Cooper's literature review framework (1988); the modified framework focused on the following steps: problem formulation, data collection, data appropriateness evaluation,

organization, and presentation of results. In this paper, the role of remote learning in teaching and learning amidst the COVID19 pandemic became clearer across all levels of education, especially the undergraduate level. The four major themes such as 1) concerns about the shift to remote learning, 2) impact of remote learning, 3) challenges in remote learning, and 4) coping with the challenges in remote learning have reflected the experiences of the educational institutions across the globe when they were compelled to shift to remote learning due to the COVID-19 pandemic.

It has been observed that literature whose context was across levels, primary to higher education (with only one case of graduate education), highlighted generic issues such as change of pedagogical approaches (Dawadi et al., 2020) or alternative approaches (Fackler & Sexton, 2020; Nogales-Delgado et al., 2020). Corollary, IT and internet-related concerns have been a common issue in the literature regardless of the education levels and socio-economic status of the countries where the studies were conducted such as in Turkey (Akbulut et al., 2020; Dayungac et al., M. 2020; Korkmaz & Toraman, 2020), Pakistan (Adnan & Anwar, 2020; Faize & Nawaz, 2020), the Philippines (Moralista & Oducado, 2020; Ochavillo, 2020), Indonesia (Octaberlina & Muslimim, 2020), Malaysia (Chung et al., 2020), Ghana (Demuyakor, 2020), China (He & Xiao, 2020; Jocus et al., 2020; Zhang et al., 2020), England (Lucas, et al., 2020), Saudi Arabia (O'Keefe et al., 2020), the USA (Smith, 2020; Vanourek, 2020; Young & Donovan, 2020). Likewise, the disparity between the advantaged and disadvantaged students regardless of the education levels and socio-economic status of the countries has also been underscored.

One important reality in the shift to remote learning modality as an emergent response to the pandemic among the primary and secondary and postsecondary educational institutions has been the involvement of parents (Blagg et al., 2020; Eivers et al., 2020; Lucas, et al., 2020; Rusi, 2020; Song et al., 2020). The role of parents in the education of their children has been emphasized because of the children's lesser autonomy compared to undergraduate students.

The shift to remote learning has averted the educational process from discontinuation in almost all educational institutions across the globe. The positive impacts of remote learning significantly surpass its negative bearings. Vaughan et al. (2013) contended that the integration of distance education tools and software platforms functions as a reinforcement to strengthen remote learning experiences and enhance online teaching practices. However, as noted in this study, with these impacts come to the challenges that include the restructuring of programs and curricula, adequacy of teacher competencies, the restrictions on technical and network resources, and the consequences of other elements such as reduced social engagements among learners and teachers.

In this study, other conceivable problems with the shift of the curriculum into a remote learning format are all associated with pedagogical, institutional, and national administration issues vis-à-vis the level of education. Opportunities to explore innovative solutions are available which involve identification of suitable digital learning platforms, designing of effective online curricula and proper planning, scheduling of activities based on the observable learning experiences and outcomes, and continuous strengthening of national and institutional support for online education (Zayapragassarazan, 2020). Finally, all the innovative solutions across all levels of education, from primary to undergraduate and even graduate education, should "institute teaching and learning on the grounds of a pedagogy of care, not on purely didactic and insensitive grounds" (Bozkurt & Sharma, 2020, p.iii).

Conclusion

The inputs presented in this literature review highlight remote learning, whether synchronous or asynchronous, as the most viable option for educational delivery especially in the arrival of the COVID-19 as a global threat. Following the four major themes discovered in this literature review, the study concludes that the national government and education institutions play a great role in maximizing the quality of online education which can be reinforced by affording sustainable support for educators' professional developments for online instruction, more online training for learners and adequate provision for content development, network infrastructure, and multi-media integration. Parental supervision is also very critical in the educational achievement of learners and the overall online learning practice.

Limitations of the Present Literature Review

The literature search for the studies was extensive and systematic using a framework to find as many related studies as possible, and these were sifted through following inclusion and exclusion criteria. Findings were limited to the 102 research articles available at the conduct of the study. The present literature review did not include studies that were conducted about remote learning amid COVID19, from January 2021 until the present time because the authors intended to make a thematic synthesis of the experiences of the various educational institutions across the globe when they inevitably shifted to remote learning due to the pandemic.

Recommendation for Future Research

Another inclusive literature review of relevant research articles that have been published beginning 2021 may be conducted following the literature review framework of the present study to determine how all stakeholders of the teaching and learning process have adjusted during the second year of this crisis. A thematic synthesis literature review of studies focusing on the educational institutions' experiences worldwide published in 2021, the second year of the pandemic, would certainly serve a valuable contribution to the existing literature as it gives a global perspective on how various educational institutions have made substantial adjustments to sustain quality education in the context of remote learning. The literature review may include studies that examined the gradual shift to the face-to-face modality of learning in various countries.

References

- Adnan, M., & Anwar, K. (2020) Online learning amid the COVID-19 pandemic: Students' perspectives. *Journal of Pedagogical Sociology and Psychology*, 2 (1). <http://www.doi.org/10.33902/JPSP.2020261309>
- Akbulut, M., Şahin, U., & Esen, A. C. (2020). More than a virus: How COVID 19 infected education in Turkey? *Journal of Social Science Education*, 19(1), 30–42. <https://doi.org/10.4119/jsse-3490>
- Ali, W., (2020). Online and Remote Learning in Higher Education Institutes: A Necessity in light of COVID-19 Pandemic. *Higher Education Studies*, 10 (3). Canadian Center of Science and Education. doi:10.5539/hes.v10n3p16 URL: <https://doi.org/10.5539/hes.v10n3p16>
- Allo, M. (2020). Is online learning good amid the Covid-19 Pandemic? The case of EFL learners. *Jurnal Sinestesia*, 10 (1), Universitas Kristen Indonesia Toraja, Indonesia
- Ananga, P. (2020). Pedagogical considerations of e-learning in education for development in the face of COVID-19. *International Journal of Technology in Education and Science (IJTES)*, 4(4), 310-321.
- Angelova, M. (2020). Students' attitudes to the online university course of management in the context of COVID-19. *International Journal of Technology in Education and Science (IJTES)*, 4(4), 283-292.
- Atmojo, A. and Nugroho, A. (2020) EFL Classes Must Go Online! Teaching Activities and Challenges during COVID-19 Pandemic in Indonesia. *Register Journal*. 13 (1), (2020), pp.49-76 p-ISSN: 1979-8903 ; e-ISSN : 2503-040X.DOI: <https://doi.org/10.18326/rgt.v13i1.49-7>
- Aydin, E., & Erol, S. (2020). The Views of Turkish Language Teachers on Distance Education and Digital Literacy during the Covid-19 Pandemic. *International Journal of Education and Literacy Studies*. DOI: <http://dx.doi.org/10.7575/aiac.ijels.v.9n.1p.60>
- Ballena, C.T., & Liwag, E.F. (2019). Carpe Diem or Carpe Thesis? How Graduate Students Deal With Their Thesis Writing. *International Journal of Research*, 6, 68-76.
- Belay, D. G. (2020). COVID-19, Distance Learning and Educational Inequality in Rural Ethiopia. *Pedagogical Research*, 5(4), em0082. <https://doi.org/10.29333/pr/9133>
- Bird, Kelli A., Benjamin L. Castleman, & Gabrielle Lohner. (2020). Negative Impacts From the Shift to Online Learning During the COVID-19 Crisis: Evidence from a Statewide Community College System. (EdWorkingPaper: 20-299). Retrieved from Annenberg Institute at Brown University: <https://doi.org/10.26300/gx68-rq13>

Blagg, K, Blom, E., Gallagher, M., & Rainer M. (2020). Mapping Student Needs during COVID-19: An Assessment of Remote Learning Environment. Urban Institute. 500 L'Enfant Plaza SW Washington, DC.

Brown, S. (2020). Teaching Science Methods Online During COVID-19: Instructor's Segue into Online Learning. *Electronic Journal For Research in Science & Mathematics Education*, 24 (3), 14-18.

Chukwuemeka, E., Dominic, S., Kareem, M., & Mailafia, I. (2020). Redesigning Educational Delivery Systems: The Needs and Options for Continuous Learning during the Coronavirus (COVID-19) Pandemic in Nigeria. *Contemporary Educational Technology*. SSN: 1309-517X (Online) 2021, 13(1), ep292, <https://doi.org/10.30935/cedtech/9363>

Chung, E., Subramaniam, G., Dass, L., (2020) Online Learning Readiness Among University Students in Malaysia Amidst Covid-19. *Asian Journal of University Education (AJUE)* 16 (2). <https://doi.org/10.24191/ajue.v16i2.10294>

Cooper, N. M. (1988). Organizing knowledge syntheses: A taxonomy of literature reviews. *Knowledge in Society*, 1(1), pp. 105-126.

Dawadi, S., Giri, R.,; Simkhada, P. (2020). Impact of COVID-19 on the Education Sector in Nepal - Challenges and Coping Strategies. Sage Submissions. Preprint. <https://doi.org/10.31124/advance.12344336.v1>

Dayungac, I., Tanhan, A., & Kiyamaz, M. (2020). Understanding the Most Important Facilitators and Barriers for Online Education during COVID-19 through Online Photovoice Methodology. *International Journal of Higher Education*, 10 (1). doi:10.5430/ijhe.v10n1p166 URL: <https://doi.org/10.5430/ijhe.v10n1p166>.

Demuyakor, J. (2020). Coronavirus (COVID-19) and Online Learning in Higher Institutions of Education: A Survey of the Perceptions of Ghanaian International Students in China. *Online Journal of Communication and Media Technologies*, 10(3), e202018. <https://doi.org/10.29333/ojcm/8286>

Eivers, E., Worth, J. & Ghosh, A. (2020) Home learning during Covid-19: Findings from the Understanding Society Longitudinal Study. *National Foundation for Educational Research*.

Fackler, A. & Sexton, C. (2020). Science Teacher Education in the Time of COVID-19: A Document Analysis. *International Consortium for Research in Science & Mathematics Education (ICRSME)*, 24(3), 5-13.

Faize F., & Nawaz, M. (2020). Evaluation and Improvement of students' satisfaction in Online learning during COVID-19. *Open Praxis*, 12(4), pp. 495–507 (ISSN 2304-070X) COMSATS University Islamabad (Pakistan).

Fink, A. (2010). Conducting research literature reviews: from the Internet to paper. <https://www.syndetics.com/index.aspx?client=wuistlul&isbn=9781412971898/summary.html&type=rn12>

Gamage, K., de Silva, E., & Ghunawandana, N. (2020) Online Delivery and Assessment during COVID-19: Safeguarding Academic Integrity. *Educ. Sci.*, 10, 301; <https://doi:10.3390/educsci10110301>

Grant, M.J., & Booth, A. (2009). A typology of reviews: An analysis of 14 review types and associated methodologies. *Health Information & Libraries Journal*, 26, 91–108. <https://doi:10.1111/j.1471-1842.2009.00848.x>

He, W., & Xiao, J. (2020). The Emergency Online Classes During COVID-19 Pandemic: A Chinese University Case Study. *Asian Journal of Distance Education*, 15(2).

Hodges, L., & Martin, A. (2020). Enriching work-integrated learning students' opportunities online during a global pandemic (COVID-19). Massey University, Palmerston North, New Zealand. Special Issue. Responding to COVID-19: Understanding and conceptualizing challenges for work-integrated learning.

Ilonga, A., Ashipala, D. O. & Tomas, N. (2020). Challenges experienced by students studying through Open and Distance Learning at a Higher Education Institution in Namibia: implications for strategic planning. *International Journal of Higher Education*, 9(4), 116-127. <https://doi.org/10.5430/ijhe.v9n4p116>

Jocuns, A., Shi, L., Zhang, L., Yin, T., Gu, X., Huang, X., Zhang, Y, & Zhang, Y. (2020). Translocating Classroom Discourse Practices during the Covid-19 Pandemic in China: A reflective Nexus Analysis Account. *Iranian Journal of Language Teaching Research*.

Jones, K., & Sharma, R. (2020). Reimagining a future for online learning in the post-COVID era. SSRN. <https://dx.doi.org/10.2139/ssrn.3578310>

Joshi, A., Vinay, M., & Bhaskar, P., (2020) Online Teaching Amidst Covid-19 in India: An Outlook. *Asian Journal of Distance Education*, 15(2).

Kaisara, G. & Bwalya K. (2020). Investigating the E-Learning Challenges Faced by Students during Covid-19 in Namibia. *International Journal of Higher Education*.

Korkmaz, G. & Toraman, Ç. (2020). Are we ready for the post-COVID-19 educational practice? An investigation into what educators think as to online learning. *International Journal of Technology in Education and Science (IJTES)*, 4(4), 293-309.

Landicho C.J. (2020). Changes, Challenges, and Opportunities in Teaching Senior High School Earth Science amidst the COVID-19 Pandemic. *Journal of Learning and Teaching in Digital Age*, 6(1), 55-57.

Laschewski, L. (2011). Innovative e-learning in rural areas: A review. Available at SSRN 1861912.

Lau, P., Chua, Y, Teow, Y, & Xue, X. (2020). Implementing Alternative Assessment Strategies in Chemistry Amidst COVID-19: Tensions and Reflections. *Educ. Sci.* 2020, 10, 323; <https://doi:10.3390/educsci10110323>

Lim, S.F.W.T., Jin, X., & Srari, J.S. (2018). Consumer-driven e-commerce: A literature review, design framework, and research agenda on last-mile logistics models. *International Journal of Physical Distribution & Logistics Management*, 48(3),308-332. <https://doi.org/10.1108/IJPDLM-02-2017-0081>

Lucas, M., Nelson, J. & Sims, D. (2020). Schools' responses to Covid-19: Pupil engagement in remote learning. Slough: National Foundation for Educational Research. Milestone House, The Mere Upton Park, Slough SL1 2DQ.

Merriam S. & Tisdell, E. (2017). *Qualitative Research: A Guide to Design and Implementation*. Vancouver, B.C. Langara College.

Moralista, R. B. & Oducado, R.M.F. (2020). Faculty Perception toward Online Education in a State College in the Philippines during the Coronavirus Disease 19 (COVID-19) Pandemic. *Universal Journal of Educational Research*, 8(10), 4736 - 4742. <https://DOI:10.13189/ujer.2020.081044>

Moretti F., van Vliet L., Bensing J, Deledda G, Mazzi, M., Rimondini, M., Zimmermann, C., & Fletcher, I. (2011) A standardized approach to qualitative content analysis of focus group discussions from different countries. *Patient Educ Couns.* 2011 Mar;82(3):420-8. <https://doi:10.1016/j.pec.2011.01.005> Epub 2011 Feb 3. PMID: 21292424.

Mulenga, E., & Marban, J. (2020) Prospective Teachers' Online Learning Mathematics Activities in The Age of COVID-19: A Cluster Analysis Approach. *EURASIA Journal of Mathematics, Science and Technology Education*, 16(9), em1872 ISSN:1305-8223.

Munna, A., & Shaikh, M. (2020). Pedagogies and practice: online teaching during COVID-19. *International Journal of Humanities and Innovation (IJHI)* 3(4), 132-138.

Munsell, S. E., O'Malley, L. & Mackey, C. (2020). Coping with COVID. 101 *Educational Research: Theory and Practice*, 31(3), 101-109.

Neely, E., Walton, M., & Stephens, C. (2014). Young People's Food Practices and Social Relationships. A Thematic Synthesis. *Appetite*, 82, 50–60.

Nogales-Delgado, S., Suero, S., & Martín, J. (2020). COVID-19 Outbreak: Insights about Teaching Tasks in a Chemical Engineering Laboratory. *Education Sciences*. 10(9):226. <https://doi:10.3390/educsci10090226>

Noor, S., Isa, F. Md., & Mazhar, F. F. (2020). Online Teaching Practices During the COVID-19 Pandemic. *Educational Process: International Journal*, 9(3), 169-184, <https://DOI:10.22521/edupij.2020.93.4>

Ochavillo, G.S. (2020) A Paradigm Shift of Learning in Maritime Education Amidst Covid 19 Pandemic. *International Journal of Higher Education*. <https://doi:10.5430/ijhe.v9n6p164>

Octaberlina, L. & Muslimim A. (2020). EFL Students Perspective towards Online Learning Barriers and Alternatives Using Moodle/Google Classroom during COVID-19 Pandemic. *International Journal of Higher Education*. doi:10.5430/ijhe.v9n6p1 URL: <https://doi.org/10.5430/ijhe.v9n6p1>

O'Keefe, L; Dellinger, Mathes, J. Holland, T. L., & Knott, J. (2020) The State of Online Learning in the Kingdom of Saudi Arabia: A Covid 19 Impact Study. Online Learning Consortium. Accessed: <https://eric.ed.gov/?q=The+State+of+Online+Learning+in+the+Kingdom+of+Saudi+Arabia&id=ED608878>

Oosterwyk, G., Brown, I., & Geeling, S. (2019). A synthesis of literature review guidelines from information systems journals. In: Kennedy Njenga (editor). *Proceedings of 4th International Conference on the Internet, Cyber Security and Information Systems 2019*, 12, 250—260. <https://easychair.org/publications/open/2h3r>

Oznacar, B. & Mehtap H. (2020). Effects of COVID-19 period on educational systems and institutions. *International Journal of Curriculum and Instruction*, 13(1) Special Issue (2017) 537–551.

Pace, C., Pettit, S.K., & Barker, K.S. (2020) "Best Practices in Middle-Level Quaranteaching: Strategies, Tips, and Resources Amidst COVID-19," *Becoming: Journal of the Georgia Association for Middle-Level Education*: 31(1). <https://DOI:10.20429/becoming.2020.310102>

Pasaribu, T. A., & Dewi, N. (2021). Indonesian EFL students' voices on online learning during COVID-19 through appraisal analysis. *LEARN Journal: Language Education and Acquisition Research Network*, 14(1), 399-426.

Pete, J., & Soko, J. (2020) Preparedness for online learning in the context of Covid-19 in selected Sub-Saharan African countries. *Asian Journal of Distance Education*, 15(2).

Pokhrel, S. & Chhetri, R. (2021) A Literature Review on Impact of COVID-19 Pandemic on Teaching and Learning. *Higher Education for the Future* 8(1), 133–141. <https://DOI:10.1177/2347631120983481>

Reshma S, Soumya E & Sr. Juli A.D. (2017). Awareness of e-Learning among rural people of Kerala, *International Journal of Education & Applied Sciences Research*, 4(1), 01-08 ISSN:2349–2899 (Online, ISSN: 2349–4808 (Print).

Rini S., Rina S., Indra W., Popi R., Menrisal (2020). Blended learning with Edmodo: The effectiveness of statistical learning during the COVID-19 pandemic. *International Journal of Evaluation and Research in Education (IJERE)*, 10(1), 293~299 ISSN: 2252-8822, <https://DOI:10.11591/ijere.v10i1.20826>

Romero-Ivanova, C. Shaughnessy, M., Otto, L., Taylor, E. & Watson E. (2020). Digital Practices & Applications in a Covid-19 Culture. *Higher Education Studies*, 10(3), 80-87. doi:10.5539/hes.v10n3p80 URL: <https://doi.org/10.5539/hes.v10n3p80>

Rusi, R. (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* Copyright 2020 2020, 7(2), 90-109. <http://dx.doi.org/10.29333/ejecs/388>

Shraim, K., & Crompton, H. (2020). The Use of Technology to Continue Learning in Palestine Disrupted with COVID-19. *Asian Journal of Distance Education*, 15(2), 1-20.

Siron, Y., Wibowo, A., & Narmaditya, B.S. (2020). Factors affecting the adoption of e-learning in Indonesia: Lesson from Covid-19. *Journal of Technology and Science Education*, 10(2), 282-295. <https://doi.org/10.3926/jotse.1025>

Smith, C. (2020). Challenges and Opportunities for Teaching Students with Disabilities During the COVID-19 Pandemic. *International Journal of Multidisciplinary Perspectives in Higher Education*, 5(1), 167–173. <https://doi.org/10.32674/jimphe.v5i1.2619>

Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research*, 104, 333-339. <https://10.1016/j.jbusres.2019.07.039>

Song, H., Wu, J., & Zhi, T. (2020). Online Teaching for Elementary and Secondary Schools During COVID-19. *ECNU Review of Education*, 3(4), 745–754. <https://DOI:10.1177/2096531120930021journals.sagepub.com/home/roe>

Syauqi K., Mundai, S., & Triyono, M. (2020) .Students' perceptions toward vocational education on online learning during the COVID-19 pandemic. *International Journal of Evaluation and Research in Education (IJERE)*, 9(4), 881~886. ISSN: 2252-8822, <https://DOI:10.11591/ijere.v9i4.20766>

Tanık-Önal, N., & Önal, N. (2020). Teaching science through distance education during the Covid-19 pandemic. *International Online Journal of Education and Teaching (IOJET)*, 7(4), 1898-1911. <http://iojet.org/index.php/IOJET/article/view/1088>

Templier, M., & Paré, G. (2015). “A Framework for Guiding and Evaluating Literature Reviews.” *Communications of the Association for Information Systems* 37, Article 6.

Thomas, J., & Harden, A. (2008). Methods for the thematic synthesis of qualitative research in systematic reviews. *BMC Medical Research Methodology* 8 (1).

Tosun, N. (2020). Distance education practices at universities in Turkey: a case study during the covid-19 pandemic. *International Journal of Curriculum and Instruction (IJCI)*, Special Issue (2021), 313–333.

Unger, S., & Meiran, W. R. (2020). Student attitudes towards online education during the COVID-19 viral outbreak of 2020: Distance learning in a time of social distance. *International Journal of Technology in Education and Science (IJTES)*, 4(4), 256-266.

Vanourek, G. (2020). Schooling Covid-19: Lessons from leading charter networks from their transition to remote learning. Washington DC: Thomas B. Fordham Institute (August 2020). <https://fordhaminstitute.org/national/research/schooling-covid-19-lessons-leading-charter-networks-their-transition-remote>

Wilson, S., Tan, S., Knox M., Ong, A., Crawford, J. & Rudolph, J. (2020). Enabling cross-cultural student voice during COVID-19: A collective autoethnography. *Journal of University Teaching & Learning Practice*, 17(5), 1-21. <https://ro.uow.edu.au/jutlp/vol17/iss5/3>

Xiao, Y., & Watson, M. (2017). Guidance on conducting a systematic literature review. *Journal of Planning Education and Research*, 39(1), 93-112. <https://0739456X1772397.10.1177/0739456X17723971>

Young, J. & Donovan, W. (2020). Shifting to Online Learning in the COVID-19 Spring. Pioneer Institute. Public Policy Research 185 Devonshire Street, Suite 1101 Boston MA 02110.

Yu, J.; &Jee, Y.(2020) Analysis of Online Classes in Physical Educa- tion during the COVID-19 Pandemic. *Education Sciences*, 11(3), 1-14. <http://dx.doi.org/10.3390/educsci11010003>

Yudiawan, A., Sunarso, B., Suharmoko, & Sari, F. (2020). Successful online learning factors in COVID-19 era: Study of Islamic higher education in West Papua, Indonesia. *International Journal of Evaluation and Research in Education (IJERE)*, 10(1), 193~201. ISSN: 2252-8822, <https://DOI:10.11591/ijere.v10i1.21036>

Zayapragassarazan Z. (2020) COVID-19: Strategies for Engaging Remote Learners in Medical Education. Department of Medical Education Jawaharlal Institute of Postgraduate Medical Education and Research (JIPMER) Puducherry 605006, India.

Zhang, W., Wang, Y., Yang, L., & Wang, C. (2020). Suspending classes without stopping learning: China's education emergency management policy in the COVID-19. *Journal of Risk and Financial Management*, 13(3), 55. <https://doi.org/10.3390/jrfm13030055>