



Experimento de educación remota de emergencia en medio de la pandemia de COVID-19 en instituciones de aprendizaje en Filipinas

Emergency remote education experiment amid COVID-19 pandemic in learning institutions in the Philippines

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RESUMEN.

La tecnología ha sido fundamental para una comunicación eficiente para contrarrestar la pandemia que el mundo enfrenta hoy. También redefine cómo el sistema educativo puede proliferar la entrega del proceso de enseñanza-aprendizaje en medio de COVID-19. Este documento articula la efectividad de la educación a distancia, destaca los posibles desafíos en la educación remota de emergencia y recomienda plataformas emergentes de aprendizaje remoto junto con políticas para la utilización de la enseñanza remota de emergencia y protocolos para la prevención de COVID-19 en las instituciones de aprendizaje de Filipinas. El documento ofrece más investigación sobre estrategias innovadoras, experiencias de aprendizaje virtual y la transición del aula física a un entorno de educación remota de emergencia durante la pandemia.

PALABRAS CLAVES.

COVID-19, enseñanza remota de emergencia, educación a distancia, educación remota de emergencia, ERT, enseñanza remota.

ABSTRACT.

Technology has been instrumental for efficient communication to counter the pandemic that the world is facing today. It also redefines how the educational system can proliferate the delivery of the teaching-learning process amidst COVID-19. This paper articulates the effectiveness of distance education, highlights the possible challenges in emergency remote education, and recommends emerging remote learning platforms along with policies for the utilization of emergency remote teaching and protocols for the prevention of COVID-19 in Philippine learning institutions. The paper offers further research on innovative strategies, virtual learning experiences, and the transition from the physical classroom into an emergency remote education environment during the pandemic.

KEY WORDS.

COVID-19, emergency remote teaching, distance education, emergency remote education, ERT, remote teaching.





1. Introduction.

COVID-19 caused impediments in the educational system to conduct face-to-face classes between students and teachers that eventually followed with school closures. The World Bank Education Global Practice (2020) highlights that extended school closures are a loss of learning that may further a loss in human capital and eventually diminish economic opportunities. The pandemic has presented a changing culture to reach students and institutions need to adapt to this culture through remote learning (Westine, et al., 2019). Thus, countries are pursuing to mitigate the loss of learning by pursuing alternative delivery to cope with the crisis.

Through technology, educational institutions worldwide at all levels are making attempts to develop alternative delivery modes to migrate the classes remotely. Jung & Rha (2000) predicted that technology would bring changes to the arrangements of the teaching and learning process at all levels on a worldwide scale. There are many benefits to using technology in the implementation of remote instruction that includes student engagement, access to the latest information, sharing of content, and communication (Mathew & Iloanya, 2016). Besides these, teachers and learners can interact with other people in different institutions across the globe.

On the contrary, slow or unreliable internet, cost of connection, technophobia, insufficient 21st-century technological skills, and lack of devices (Alvarez, 2020; Mathew & Iloanya, 2016; Lynch, 2020) are some of the hindrances to the distance learning of the students. Unquestionably, online education posits a challenge for educators to create a caring virtual classroom that allows students for collaborative learning and interaction (Duncan & Young, 2009).

Due to the crisis, the higher institutions made drastic changes as they shift to emergency remote education (Bozkurt et al., 2020). Emergency Remote Education (ERE) is highly vital in fulfilling the educational needs of the students during this public health emergency. This alternative mode of instruction happens when a crisis emerges like the case of COVID-19 where an emergency exists, so a structured online instruction is difficult to implement due to a heightening pandemic. COVID-19 caused hindrances to face-to-face education or even of blended learning, however, the education sector needs to re-examine and calibrate the use of technology for emergency remote instruction to happen between the students and the teachers. Hence, whether negative or positive results of emergency remote teaching, the educational systems worldwide are left with no choice but to experience and accept the great and rapid changes (Hung, Chou, Chen & Own, 2010) in adopting the concepts of emergency remote education (Bozkurt & Sharma, 2020).

Despite the possible contrasting outcomes of emergency remote instruction, the objective is to create the most flexible, efficient, and effective instructional environment (Duncan & Young, 2009) for the educators and the learners amid COVID-19. There is an increasing interest in policy-makers and practitioners worldwide regarding the effectiveness of interactive remote learning approaches and conditions (U.S. Department of Education, 2010) where emergency remote teaching is effective.



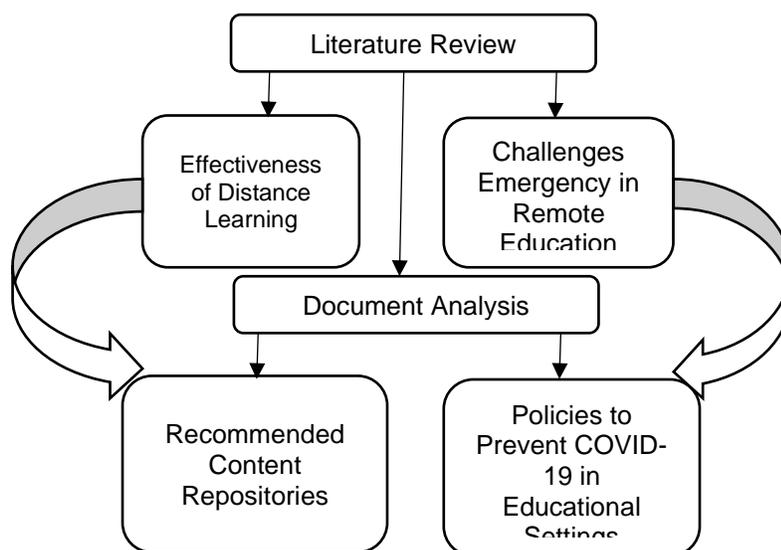


During the COVID-19 pandemic, the Chinese Ministry of Education has launched an initiative that provides flexible online learning to over 270 million students at home (Huang et al., 2020). In the Philippine setting, the country is unprepared for the advent of the implementation of emergency remote education. During this crisis, the country is still struggling to offer alternative delivery education since numerous schools in the Philippines were in a conventional classroom setting before COVID-19. The time though is inevitable as the educational system in the country has to face its biggest challenge to date, that of groping in an emergency remote education. Hence, this article was conceptualized to supplement existing literature for the need to examine the effectiveness along with the challenges of transitioning from classroom-based education to remote learning environments. This is especially highlighting the case of alternative delivery in the Philippine educational system in which the country is still grasping in its trial stage for a possible emergency remote teaching.

2. Methods.

Schools worldwide have immediately diverted to artificial intelligence in delivering the lessons to the learners due to the pandemic. During this emergency, it is assumed that emergency remote education is highly vital to mitigate the loss of learning among the students, so schools have to divert to emergency remote learning. The researcher reviewed the scientific body of literature that produced empirical studies regarding the effectiveness and challenges that distance education can bring to the educational system. The researcher also looked into the different learning platforms that educators can utilize for their emergency remote instruction and searched into the policies that the educational sectors implement for the prevention of COVID-19 in educational settings (Figure 1). A document analysis was applied to look into policies for educational measures that support the implementation of emergency remote teaching to prevent the spread of COVID-19 in the Philippine context.

Figure 1. Research Method of the Study.





3. Results and Discussion.

Distance Education is different from Emergency Remote Education. Distance Education does not apply to the pedagogical practices during this pandemic since it “is a planned activity and its implementation is grounded in theoretical and practical knowledge which is specific to the field and its nature. On the other hand, emergency remote education is about surviving in a time of crisis with all resources available, including offline and/or online” (Bozkurt et al., 2020, p. 2). The authors, likewise, argued that ERE is “a branch of distance education as in the case of online learning, e-learning, m-learning, or homeschooling” (p. 2). While the notions behind ERE is relatively new and prone to weaknesses due to its vulnerable theoretical underpinnings, the concept of ERT offers both pitfalls and opportunities that are valid under its surrounding idea of ‘emergency’. Hence, this article revisits the results of the effectiveness and proven value of distance education. Subsequently, this article points out possible challenges in the application of ERT in the educational institutions during this emergency.

3.1. Effectiveness of Distance Education.

U.S. Department of Education (2010) revealed the effectiveness of distance education for the students. It reported the meta-analysis of 50 study effects and found that students learning outcomes who were under distance education were better than those students in traditional instruction. However, it also pointed out that there are general differences in multiple dimensions such as the time on staying on tasks.

Jung & Rai (2000) explained that many factors affect the effectiveness of distance education, such as teacher, interpersonal interaction, institutional, social, technological, student personal, and instructional design factors. They added that aside from technical infrastructure, the number of students and course offerings, amount of multimedia component and instructor-led interaction, type of online platforms, choice of online interaction, and completion rate can also affect the effectiveness of distance education.

Likewise, the use of technology for learning can maximize learning in an environment that prioritizes a high quality in course design (Huang et al., 2020). This can offer students the options for self-paced learning at their place, and can also emphasize on different learning styles. An effective remote classroom should create learning environments that can cater to the diversity and needs of the students varied learning styles (Duncan & Young, 2009; Neuhauser, 2002; Shah & Calonge, 2019). A ranking tool is also needed that is tailored to discuss the quality of education through virtual classrooms and defines the criteria and indicators to measure the quality of distance education (Pozzi et al., 2019).

Based on 86 studies that used learning outcomes from over 15,000 students, the results of the meta-analysis study showed that there was a strong positive trend. This indicates that distance education is effective for instruction. The students who were under distance learning academically outperformed those students from traditional education (Schachar & Neumann, 2003). Another meta-analysis (Patrick & Powell, 2009) found that distance instruction produced better results than classroom-based instruction that measures student achievement based on 15 published studies from 1989 to 2004 that had met strict internal experimental validity. Similarly, the overall outcomes using e-learning are greater than the traditional format





based on 15 meta-analyzes of the implementation of e-learning from 2000 to 2013 (Yuwono & Sujono, 2018).

However, two groups of students received distance instruction and conventional education. The study revealed no differences in their learning preferences and styles though 96% of the students stated that they found the course effective more than their conventional courses (Neuhauser, 2002). A study (Swan, 2003) reported that there were no significant differences between distance education and traditional classroom environments based on the evaluation of numerous research studies.

Likewise, the first technology designer for distance education system at North Carolina State University gave a conclusive remark based on comparative studies that there was no difference in the similar issue (Russell, 2001). He stated that regardless of how it is produced, delivered, and whether high tech or low tech, interactive or not, the students can learn using technology in the same manner in the classroom-based instruction.

There is robust evidence that distance learning can be as effective in comparison to the traditional format (Nguyen, 2015). Distance education has the potential to be better in effectiveness than face to face training since newer technology can enhance and maximize the effectiveness of online training (Sandlin, 2013). These studies indicate that the learning activities given to the students can be as effective whether delivered through distance or classroom-based environment. The world is already shaped to go for distance education in the post-pandemic society no matter the cost.

3.2. Challenges in Emergency Remote Education.

Contrary to the rigid planning of online learning, Emergency Remote Teaching (ERT) happens in countries when there is a temporary shift in the delivery of instruction due to a crisis, and in today's case, COVID-19. ERT makes use of fully remote teaching for delivering instruction with the main objective "is not to re-create a robust educational ecosystem but rather to provide temporary access to instruction and instructional supports in a manner that is quick to set up and is reliably available during an emergency or crisis" (Hodges, Moore, Lockee, Trust, & Bond, 2020, blog post). ERT offers access that is fast and practical, but reliable in the crisis for learning to continue.

Due to the pandemic, institutions worldwide are embarking on making use of emergency remote teaching since online education poses a challenge for the said institutions because a comprehensive curriculum is also needed to implement quality education (Palvia et al., 2018) through alternative delivery. It is also an ongoing challenge to provide the students with high-quality experiences that exceed alternative modalities (Bozkurt & Sharma, 2020; Westine et al., 2019).

Emergency remote education, however, still provides a similar challenge to that of implementing an online learning system. ERT is not as strict as online learning, but there are the same challenges that can be encountered for a country that has never tried transitioning to a similar distance education delivery. Issues and challenges arise since institutions have to establish the quality of learning. Some stumbling blocks to advancement are having to deal with inadequate technological equipment (Alvarez, 2020) and the failure to consider sociocultural aspects (Karsenti & Collin, 2012) that could hinder technological adoption.





Similarly, technological literacy and pedagogical knowledge are a concern for first-time distance learning teachers (Bhaumik & Priyadarshini, 2020; Kayaduman & Demirel, 2019). The challenges also include the need to stimulate innovative practice (Arinto, 2016; Talidong, 2020) among the teachers and the need to sustain innovative practice among the innovators and these needs are particularly contextualized as a result in the Philippine setting. Moreover, the teachers revealed in a study that the greatest challenge they have is to create connections with their students and achieve a productive learning environment to engage the students (Alvarez, 2020; Duncan & Young, 2009).

There are also the institutional factors as challenges such as a limited understanding about distance learning pedagogy and learning styles of the students, lack of administrative support for virtual teaching and for marketing the program, number of students enrolled, faculty qualifications, tuition rates, and length of the program (Kentnor, 2015 as cited in Palvia et al., 2018, p. 236). Aside from this, it was also cited that there is a reduce on the quality of education, increased training costs, faculty resistance, financial constraints, misaligned course content, increased cost of updates on technology, less teacher-student interaction, to name but a few, are some of those challenges facing distance learning (Palvia et al., 2018 cited Popovich & Neel, 2005).

These challenges are inevitable in emergency remote education. However, there is no turning back for the educational system, but to accept emergency remote teaching during this pandemic as a way forward. Quality in emergency remote education is under scrutiny, but it can still mitigate the lack of classroom-based education during this emergency.

3.3. Recommended Emergency Remote Teaching-Learning Resources.

The researcher derived a few of the recommended resources from the World Bank Group Education (2020) (Table 1). The researcher considered inclusion criteria for the remote learning resources. Part of the criteria is that the remote platforms' main functionality is a learning management system.

Table 1. Content Repositories for Remote Learning (World Bank Group Education, 2020).

Canvas & Canvas Network	This provides a platform to connect and chart a course for professional development, personal growth, and academic inquiry.	https://www.canvas.net/
Desire2Learn (D2L)	This is a cloud-based software for online and blended classroom learning.	https://www.d2l.com/
Can't wait to Learn	It is a fast, effective, and low-cost gaming technology to deliver quality education to children even in conflict contexts.	https://www.warchildholland.org/projects/cwtl/
Kolibri (Learning Equality)	Quality education through technology can be possible for low-resource communities such as rural schools, orphanages, nonformal school systems.	https://learningequality.org/kolibri/
Moodle	Open-source platform used for blended learning, distance education, flipped classroom, and other eLearning projects.	https://moodle.org/





Open Learning Exchange	This is portable, affordable, scalable, and sustainable, and can even function online.	https://www.ole.org/
Schoology	This hosts eLearning content such as courses, training, and programs for teachers to provide reports on learners' performance based on course completion.	https://www.schoology.com/
Google Classroom	This is developed for an online classroom experience that offers tools for assessment, development, administration, scoring, and feedback.	https://classroom.google.com/

The learning management system is a software application that serves as a substitute in managing, documenting, and tracking the performance of the students through a paperless educational delivery (Mobo, 2020b). The result of a study (Mobo, 2020a) showed that the implementation of alternative learning tools helped the students to cope with their missed classes when the lockdown ensued in the Philippines.

The alternative platforms can also work even offline considering that in the Philippines, many students live in remote places and lack internet connectivity (Alvarez, 2020; Mathew & Iloanya, 2016) that served as primary hindrances to emergency remote teaching. These resources are for offline learning, except Goggle Classroom that is for online use. Schools, in some parts of the country, have used the said platform before the pandemic. Thus, the researcher added it to the list.

Due to a lack of internet access to some students and the schools' dearth resources (Morgan, 2020), students may not be able to take advantage of the learning opportunities in remote instruction. However, schools must seek to incorporate platforms that can work even offline and do not require long-term payment. While acknowledging that face-to-face interaction is significant to building interpersonal relationships that technology cannot replace (Devine, Stewart & Benade, 2020), under COVID-19 circumstances, however, it is logical to assume that times right now is the new normal in schooling (Tria, 2020).

The platform above allows for asynchronous or synchronous learning, and the students or the teachers can access the freemium or the free version so that there is sustainability in utilizing these content repositories even without payment.

Synchronous means that two or more users are connected simultaneously in one platform such as a video conference while asynchronous signify that users are on the same website at different times but can access the same content and communicate in a consecutive manner such as an online forum for exchanging ideas (World Bank, 2020). Schools and higher-level education institutions can utilize these content repositories for instruction whether offline learning or online communication to make emergency remote education possible for the students regardless of the restrictions on geographic location (Yoon, 2019).

These resources can be utilized through desktops, mobiles, smartphone apps, or a combination of the platforms. To lessen the concerns among first-time educators of emergency remote teaching, a study (Kayaduman & Demirel, 2019) recommended including the provision that integrates the technological, content knowledge, and pedagogical interventions.





3.4. Policies related to Emergency Remote Education to Prevent COVID-19.

To date, the Department of Education (DepEd) has formulated and implemented 25 policies to combat COVID-19 in school settings as of June 19, 2020 (Table 2). However, the analysis made for this study chiefly included the 10 policies that have bearing to the students' welfare. DepEd (2020) advised the basic education centers to implement precautionary measures, minimize exposure to risks associated with the virus, and support the government to contain the virus transmission. It called to raise awareness about the outbreak and campaign for key messages (memorandum no. 8). The creation of a Task Force was a vital method for the organization in the 'formulation of policies and development of strategies and action plans' (memorandum no. 11, par. 2) such as monitoring, campaigning, and supervising the prevention of the virus and promoting health behaviors in field offices and schools. The campaign efforts would help the general public to gain insight into COVID-19 while authorities develop preventive strategies and promote health programs (Azlan, Hamzah, Sern, Ayub & Mohamad, 2020).

Similarly, Memorandum No. 15 provides the background, policy directives, and guidelines that focus on the promotion of precautionary and safety measures and healthy behaviors. DepEd advised the Taskforce to coordinate with the Department of Health for decisions concerning class suspensions or office lockdowns and to create policy directives and information dissemination strategies and platforms for status updates and situation reports (memorandum no. 19). The sharing of technologies and strategies among agencies is necessary to contain the transmission of the virus (Qian et al., 2020).

Table 2. DepEd Policies to Prevent COVID-19 in educational settings.

Department of Education's Response on Health Problems due to Coronavirus and re-emergence of Polio in the Philippines	OUA Memo No. 08-0120-0598	01/24/2020
Creation of a Task Force for the management of the Department of Education response to Novel Coronavirus Acute Respiratory Disease	DM No. 11, s. 2020	02/01/2020
First Set of Policy Directives of the DepEd Task Force COVID-19	DM No. 15, s. 2020	02/04/2020
Amendment to DepEd Memorandum No. 011, s. 2020	DM No. 19, s. 2020	02/11/2020
Third Set of Policy Directives of the DepEd Task Force COVID-19	DM No. 23, s. 2020	02/19/2020
Fifth Set of Policy Directives of DepEd Task Force COVID-19	DM No. 34, s. 2020	03/09/2020
Guidelines for the Remainder of School Year 2019-2020 in light of COVID-19 Measures	DM No. 42, s. 2020	03/15/2020
Guidelines on the Conduct of Remedial, Advancement, and Enrichment Classes during Summer 2020	DM No. 51, s. 2020	05/07/2020
Adoption of the Basic Education Learning Continuity Plan for School Year 2020-2021 in Light of COVID-19 Public Health Emergency	DO No. 12, s. 2020	06/19/2020
Readiness Assessment Checklist for Learning Delivery Modalities in the Learning Continuity Plan for Private Schools	DO No. 13, s. 2020	06/19/2020





In the interest of the health of stakeholders, a 14-day self-quarantine is mandatory, but learners can still opt for alternative delivery modes (memorandum no. 21). The education sector can utilize existing referral systems as indicated in the School Health and Nutrition Service Manual for the learners who are exhibiting symptoms of respiratory infection and others (DepEd, 2020). Learners are also excused from class attendance as schools conduct regular disinfection of school buildings (memorandum no. 23) during school closure. An article noted that absenteeism can be high during epidemics (Viner, 2020). Inevitably, there are consequences to school closures (Esposito & Principi, 2020) apart from the existing argumentations concerning its efficacy in curbing the virus.

Nevertheless, due to a heightened alert on the COVID-19 cases, a suspension of all national activities is deemed necessary (memorandum no. 34), and all the academic requirements should be done as home-based assignments (memorandum no. 042). Due to class suspensions in the country, the teachers were no longer required to report unless matters about the learners are not possible at home or online.

For emergency remote education, DepEd (2020) stressed for the teachers to conduct remedial or enrichment classes. Teachers can choose modular learning or digital format using Alternative Delivery Modules (ADM), depending on the students' access to home-based internet (memorandum no. 51). Based on the non-negotiable terms of the President of the country, there will be no face-to-face classes, but a package of educational interventions and learning resources will be adopted that target the most essential learning competencies (DepEd order no. 12). In choosing the learning modalities, the schools necessitate considering the availability of learning resources, health and well-being of learners and DepEd officials, national and local directives, and the choices of parents and learners (DepEd order no. 13). Schools need to contemplate the context of the students during this pandemic rather than focusing on strict adherence to the curriculum (Zhao, 2020). Currently, the department has its testing stage for the DepEd Commons Project for the teachers and the students to utilize as an emergency remote teaching resource.

For the higher levels of learning, the Commission on Higher Education (CHED, 2020) also crafted six memoranda (Table 3). Some of the policies are to establish protocols based on the guidelines of the World Health Organization for screening and response.

Table 3. CHED Policies to Prevent COVID-19 in educational settings (As of April 21, 2020).

Guidelines for the Prevention, Control, and Mitigation of the Spread of Coronavirus Disease 2019 (COVID-19) in Higher Education Institutions (HEIs)	CHED advisory #1	02/12/2020
	CHED advisory #2	03/11/2020
	CHED advisory #3	03/11/2020
	CHED advisory #4	03/14/2020
	CHED advisory #5	03/17/2020
	CHED advisory #6	04/13/2020





Higher Education Institutions (HEI's) are to create procedures that supplement existing medical emergency measures for the stakeholders in the academe. CHED advisory 3 allows institutions to exercise academic freedom based on local conditions. At the start of the lockdown, there was a suspension of distance education (Author, 2020). Since the cases of the pandemic are heightening that caused an extended home quarantine, the academes are encouraged to facilitate alternative activities for students through emergency remote teaching, e-learning, and other alternative modes of delivery based on the available resources. It was also stated in CHED advisory 6 for HEI's to utilize appropriate alternative learning platforms to achieve the course program outcomes based on the assessment of its instructional capabilities.

The setting of the educational system in the Philippines when it comes to integrating technology for emergency remote education arguably posits that there are numerous unique opportunities and challenges for the country during and even after the COVID-19 pandemic.

4. Limitations.

Similar to other studies, the article has its limitations. The article relied on previous research. This study chiefly relied on a narrative review of the scientific body of literature, and no systematic review was done that can more likely give reliable results. Likewise, most of the studies presented were based on the higher education level and very few on the basic level institutions. No empirical tests were also carried out to obtain the views of the students, teachers, and educational agencies concerning alternative learning modalities. Nevertheless, the study can offer relevant insights into the delivery of emergency remote education.

5. Implications for Future Studies.

There are academic, social, and policy implications that can be taken out of this article. Academically, the educational system in the Philippine context can access free remote learning programs since these learning environments can be as effective for the learning of the students through emergency remote teaching. Socially, emergency remote teaching can make it possible for both educators and students to interact while considering the social distancing measures and home quarantine nationwide. Likewise, policies can be crafted which support implementation and research on using educational software and remote teaching platforms in the post-pandemic society.

Future research should conduct empirical studies in the Philippine context once the alternative delivery mode is already implemented in the country to test the effectiveness and determine the challenges in the delivery of distance education in some levels of institutions. Given the pandemic, a similar study should also delve into the usage of emerging technologies for emergency remote education environments such as Zoom videoconferencing, Facebook, or other social media and virtual classrooms. A study can also evaluate the barriers to the effective implementation of ERT.





6. Conclusion.

This article pointed out the effectiveness of distance education. Distance learning highlights the integration of technology for educational delivery. However, what the educational institutions worldwide are applying is an emergency remote education. The former has proven its effectiveness for student learning while the latter is under scrutiny on its concepts. The commonality is that both distance education and emergency remote education make use of technology to provide for learning opportunities. In light of COVID-19, ERE can mitigate educational challenges while in non-traditional classroom settings.

Based on the current global crisis, challenges arise in migrating from a physical classroom to an emergency remote teaching environment. Although there are a lot of factors associated with the challenges of emergency remote education such as technological skills, choice of platforms, internet connections, content knowledge, innovative strategies, pedagogical skills, among others, the concept of ERE gives a temporary solution to learning. Though considered an experimental stage in the country, the implementation of emergency remote teaching classrooms can continue the learning of the students even amidst the pandemic. The advantage of ERE is that it allows for leniency under emergency circumstances, so educational opportunities are still possible. Taking advantage of ERE, the recommended content repositories whether online or offline connectivity can be useful for educators and students who are in remote areas or have limited internet connections. While holding on to a testing stage of ERE in the Philippines, the policies from the educational government agencies should be strictly followed in dealing with COVID-19. The deployment of alternative delivery modalities should also vary depending on the well-being, available resources, and choice of parents and learners.

To further emphasize on the pinnacle of technology for learning, numerous studies proved the effectiveness of distance education is as good or as better as traditional classroom instruction. Such a result can assist the education sector in their post-pandemic educational interventions. Nevertheless, it can become a common adage in this era that the educational system will never be the same again. Hence, as other future viruses may plague the globe in the coming years, the basic and higher-level institutions need to prepare for quality learning under the keystones of distance education in the post-pandemic society.

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