

# Higher Education Institutions' Emergency Remote Teaching amid the Pandemic

Remedios C. Bacus, Filomena T. Dayagbil, Vincent F. Monacillo, and Roselyn T. Bustos

**Abstract**—The study evaluated the higher education institutions (HEIs) emergency remote instructional delivery using the context, input, process, product (CIPP) evaluation model. To determine the responses of HEI administrators and teachers in terms of the four CIPP elements, the sequential explanatory mixed-method design was used. Teachers' digital competence (n=108) obtained through the modified SELFIE tool was analyzed using descriptive statistics. Interview data from the teachers (n=7) and administrators (n=6) were analyzed using Braun and Clarke's thematic analysis steps. Findings revealed three themes for context evaluation: materials and connectivity for learning continuity, leadership and technology infrastructure, and technological capability. Teachers' digital competence, support and resources, and curriculum and instruction were the identified themes on input evaluation. Analysis of the process led to identifying the two themes: a call for action and the culture of change. The result of the product evaluation revealed flexibility, resilience, self-helpfulness, and interdependence. The acknowledgment of the unique context, input, and support obtained during the critical period of transitioning to emergency remote teaching led to the desired educational pathways in teaching and learning amidst and beyond the pandemic. The emerging remote teaching realities will strengthen the technological capabilities of the institution to enhance teachers' and students' digital competencies.

**Index Terms**—CIPP evaluation model, emergency remote teaching, digital competence, higher education institution, technological capability.

## I. INTRODUCTION

At the onset of the pandemic, the sudden closure of schools forced academic institutions to implement emergency remote teaching (ERT) to ensure learning continuity. ERT refers to the specific type of instruction delivered in crisis and has become an alternative term used by education researchers and practitioners to disambiguate it from the quality and well-designed online education [1]. However, ERT offered in response to a crisis, is not tantamount to the well-planned online learning experiences [2]. They [2], [3] maintained that the remote teaching solutions, done on a quick setup, were meant to provide temporary access to instruction. Reference [4] cited how social media use 'pandemic pedagogies' to capture emergency remote education in extraordinary circumstances.

The rapid transition to a remote learning modality resulted in various challenges for the teachers, students, and school

administrators. Reference [2] accentuated the limited time available for establishing ERT that could affect the quality of the courses. In normal circumstances, such courses would take months to develop. Further, faculty, staff, and students often use ERT with little or no background in teaching and learning remotely [5]. ERT delivery also has issues with social presence and face-to-face student and teacher interaction. Reference [6] opined that online interaction often reduces text. Reference [7] disclosed that challenges during distance learning included external factors such as unstable internet connection, the extra financial burden for the internet quota, and internal factors such as time management and difficulty to focus while learning online.

Reference [8] pointed out the importance of academic institutions responding to the current and future challenges of teaching and learning. As higher education institution transitions to remote teaching, there is a need for these institutions of higher learning to evaluate the implementation of ERT to provide insights on how effectively deliver teaching and learning amidst and beyond the pandemic.

## II. LITERATURE REVIEW

During the health crisis, when classes are primarily delivered online, technology plays a significant role in the effective delivery of instruction. Reference [9] accentuated how technology has redefined the education system. Reference [10] argued that rapid advances in ICT have brought significant changes in online and distance education practice.

Reference [11] and [12] reiterated that despite extensive support by government and school systems, barriers were still identified, especially during the early days of technology use. These barriers include professional support and access. Even though many universities have some experience in online learning, teachers are not ready to go online. K-12 Education struggles in places where e-learning infrastructure is not available and technological investments are unclear [12], with most students having no internet access at home [13], [14]. The same is true in the Philippines, which faces challenges on affordability and accessibility of technology devices and educational technology curricula inclusion, innovation, implementation, and evaluation [15].

The education system at the onset of the pandemic is caught unprepared. With the immediate lockdowns, a shift to distance and remote teaching was a proactive solution to the global education crisis. With or without prior experience, schools implement online emergency remote teaching. Existing research on the transitional period from

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face-to-face to remote instruction showed that many faculty felt ill-prepared to transition to ERT but made significant modifications to their course operations [16]. Problems such as faculty's knowledge and skills in managing virtual learning environments emerged since they are primarily products of the traditional learning environment [17], [18]. Reference [19] surveyed 1148 university faculty in the United Kingdom and found that only half of the faculty felt prepared to deliver online learning. In contrast, approximately 60% felt confident in their ability to facilitate online learning, teaching, and assessment. Reference [20] indicated that faculty were largely uncomfortable transitioning their courses due to a perceived lack of online pedagogy and educational technology training. In addition, [21] suggested that cost, privacy, computer requirements, and necessary bandwidth associated with the technologies pose significant barriers to students' access to ERT. Similarly, [22] cited two of the four themes revealed in his study: poor internet access and lack of technological devices.

Given the need to pursue learning amid the COVID-19 outbreak, [23], [24] proposed that teachers should have comprehensive training and practices in ERT. For a successful ERT, schools may employ teaching practices and instructional planning to avoid waste of time, and investments in technology and education [25]. Further, teachers should consider the needs of their students and employ several strategies to impart knowledge [23] as they get through the challenges of learning. To ensure continuity of learning for any situation and support learners across spatial and temporal boundaries, educators need to be "fluent users of technology; creative and collaborative problem solvers; and adaptive, socially aware experts throughout their careers" [26].

Shifting to online instruction has posed many challenges to higher academic institutions, one of which is the lack of professional skills in offering online education [27]. Reference [28] suggested that higher education institutions should increase their support in providing in-time training for teachers to teach online during emergencies.

Although there are existing studies on the impact of COVID-19 on education, more evaluation studies could still be conducted in the implementation of ERT in higher education institutions to enhance teaching and learning amid the pandemic.

#### A. The CIPP Model

Aspects of quality education during the pandemic when institutions shifted from face-to-face instruction to online and remote platforms used a comprehensive model for evaluation. This study used the CIPP Model (Context, Input, Process, and Product) espoused by Stufflebeam in 1983. Reference [29] described the model's uniqueness as it provides a holistic view of each element, focusing on the context for the evaluation of the teaching-learning and development process.

According to [30], the CIPP model has several essential parts in evaluating context, input, process, and product. In a case study conducted by [29], the context includes the school's objectives, mission, and goals; input covers the infrastructure, content, curriculum, and resources; the process involves the teaching-learning process and

co-curricular activities; product encompasses the values, skills, attitudes, and results.

Reference [2] proposed that the urgency of ERT implementation is most critical to evaluate during the crisis. They also add that the evaluation of institutions' ERT efforts should focus more on the context, input, and process aspects of the CIPP evaluation model rather than the product itself (i.e., learning and whether or not or to what extent it occurred).

In the same vein, the higher education institutions' response to emergency remote teaching can be evaluated in the aspects mentioned earlier of the CIPP model. In this study, context refers to the needs and opportunities of every institution that shape teaching and learning—the inputs about the human and non-human resources needed for the effective delivery of instruction. At the same time, the process includes all the mechanisms and processes in teaching and learning, including evaluation activities. The product focuses on the quality of teaching and learning, its usefulness, and its potential to benefit society. It is about determining the acquired knowledge, skills, attitudes, and results needed in the overall implementation of ERT. Fig. 1 presents the conceptual framework of the study.

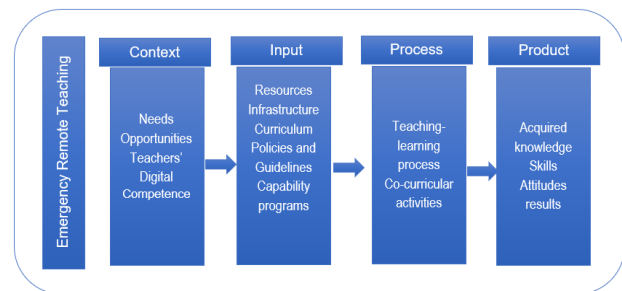


Fig. 1. Conceptual framework in assessing HEIs emergency remote teaching.

This study intends to evaluate the implementation of ERT to include the teachers' technological proficiency, resources, and infrastructure needed, training and capacity building programs, and teachers' challenges and experiences during emergency remote teaching.

#### B. Statement of Objectives

This study aimed to evaluate the implementation of emergency remote teaching (ERT) of higher education institutions using Stufflebeam's context, input, process, and product (CIPP) model. Specifically, it determined the teachers' digital competencies, technology and curriculum support, teaching and learning activities, and challenges amidst the pandemic.

### III. METHODOLOGY

#### A. Design

The study used a sequential explanatory mixed-method research design to accurately and systematically evaluate higher education institutions' emergency remote teaching implementation. Guided by the CIPP model, the researchers obtained the teachers' digital competence and analyzed it quantitatively as part of the input evaluation. The researchers also analyzed the implementation of emergency remote

teaching from the in-depth interviews conducted with higher education institutions' teachers and administrators.

### *B. Environment*

The researchers selected higher education institutions in Region VII, Philippines, to include the four state universities and two local colleges which offered free tertiary education as per Republic Act 10931, the Universal Access to Quality Tertiary Education. These selected HEIs have had teacher education programs at least for the past ten years and have implemented the flexible learning modality at the onset of the pandemic.

### *C. Participants*

Of the 120 survey questionnaires sent via email, 108 teachers from six higher education institutions responded, hence a return rate of 90%. Out of this 108 teacher-respondents, seven (coded as CT) were purposively selected to participate in the in-depth interview. These teachers are senior faculty, handling courses in teacher education programs for more than ten years. Their institutions designated them as program chairs and area coordinators during the transition from face-to-face to remote teaching. Six school administrators (coded as SA) have introduced flexible learning modalities and have instituted reframing instructional practices during the academic year 2020-2021.

### *D. Instruments*

There were two instruments used in the study. The first was the Teacher's Digital Competence Survey, adapted from the SELFIE, a free, online self-reflection tool for schools developed by the European Commission. The tool measures the extent of teachers' adoption of digital technologies for teaching and learning in the six areas: professional communication and collaboration, personal learning and development, finding and creating digital resources, teaching and learning practice, student assessment, and facilitating student digital competencies.

The second instrument was a semi-structured and content-validated interview guide. The interview questions focused on the 1) goals, needs, and challenges during the school lockdown, 2) resources and support during the transition to remote delivery of instruction, 3) activities and experiences, and 4) costs and benefits of remote teaching as perceived by the internal stakeholders.

### *E. Data-Gathering Procedure*

The teacher-respondents completed the Digital Competence survey via Google Form. After that, the purposively selected teachers and administrators, based on inclusion criteria, were interviewed using the content-validated interview guide. Aspects relative to remote teachings such as experiences, beliefs, challenges encountered, resources used, training received, and other elements were covered to capture the CIPP framework in evaluating the university's ERT. Each recorded interview lasted for a minimum of one hour. Data collection, specifically the interview with the selected participants, was done from August to September after retrieving the survey result in July 2021. After that, the interviews were

transcribed, analyzed, and interpreted to arrive at the evaluation of HEIs remote instructional delivery following Stufflebeam's CIPP Evaluation Model.

### *F. Data Analysis*

The collected data were analyzed using descriptive statistics. Simple means and percentages determined the teachers' proficiency level describe the needs, problems, opportunities, and relevant contextual conditions and dynamics in the context evaluation. On the other hand, the researchers analyzed the participants' narratives obtained during the in-depth interview thematically using Braun and Clarkes' thematic analysis steps to determine the aspects of evaluation- context, input, process, and product.

### *G. Ethical Considerations*

Before the data collection, the researchers sought clearance from the Ethics Committee. They also obtain the participants' informed consent prior to the actual interview, acquaint the study participants on the nature of the study, confidentiality in the collected information, perceived benefits, and data management Data collected shall be stored and kept in a secured folder. The researchers coded the participants as SA for the school administrator and CT for the course teachers to ensure data traceability and protect participants' identities. Researchers also provide a token of gratitude. Participants, upon request, may be given access to the aggregated report. No known risk is associated with this study and no identified conflicts of interest.

## IV. RESULTS AND DISCUSSION

Inherent to the delivery of quality education is the evaluation component, which can happen before, during, and after implementing the programs, activities, and projects (PAPs). Evaluations are at the heart of school improvements, for these will determine the attainment of the set targets and objectives. Reference [31] pointed out that some aspects like school leadership, knowledge practice, and digital resources are part of the evaluation process.

### *A. Results*

With the school's closure due to the COVID-19 pandemic, higher education institutions adapted instructional delivery to address the emergent needs of both the teachers and the students. After a year and a half, there is a need to look into not just the pedagogical but also the administrative and managerial considerations that ensured the continuance of learning, the mechanism employed during the emergency remote teaching, and the results of reframing curricular delivery. Thus, the researchers evaluate emergency remote teaching following the CIPP (context, input, process, product) model.

#### *1) Context evaluation*

The objective of context evaluation is to define, describe, and assess the needs concerning the goals set given the conditions- flexible learning amidst the pandemic. From the in-depth interviews conducted among the six HEIs, three themes emerged that captured the context of ERT implementation: 1) materials and connectivity 2) leadership

and technology infrastructure, and 3) technological capability.

**Materials and connectivity.** The need to deliver quality instruction remotely after the sudden closure of schools with the COVID-19 outbreak necessitates the presence of materials such as electronic copies of learning modules and internet connectivity to have these materials sent to the students to ensure learning continuity. At the onset, aside from the learning management system not established yet for most higher education institutions, teachers and administrators shared the lack of modules and resources such as gadgets and connectivity.

*There was no e-module at the start, and there is a need for the learning management system. The problem was how to deliver the instruction to the students online because some of our students do not have access to robust internet connectivity. Other students do not have gadgets or gadgets powerful enough to open the different types of files. They also need training on using the technological apps- the typical or simple applications. (CT3)*

**Leadership and technology infrastructure.** There are new demands and new rules for the new reality. In order to catch up with the needs of the teachers and students, school leaders' actions and initiatives are pivotal towards continuity of learning. Corollary to this is the technological capability of HEIs to adapt to changes to continue providing its clients with up-to-date and relevant services. The participants point out leadership and infrastructure as crucial in implementing ERT.

**Technological capability.** The unprecedented disruption has led the administrators and teachers to realize the need to be digitally literate. The selected HEIs were not offering programs for online education before COVID-19, and transitioning to remote teaching without technology capability is filled with challenges.

*It was hard at the start since we needed to be familiar with interactive presentations, how to conduct online classes. Some are not even familiar with Google Classroom. (CT3)*

*We lack preparations and skills in terms of digital material. Yes, we have the modules available, but our concern is putting them online with these technologies. How to blend it? That is the most challenging part. (CT5)*

## 2) Input evaluation

To Stufflebeam in [29], input evaluation requires looking into the existing and available resources for attaining the objectives and needs (in this study, the implementation of emergency remote teaching caused by the COVID-19 outbreak). The findings of the study revealed what is needed to ensure uninterrupted learning. These include teachers' digital competence, support and resources, and curriculum and instruction.

**Teachers' digital competence.** To build the HEIs input, the researchers sought the teachers' digital competence as this is vital in implementing remote teaching. Figure 2 presents the snapshot of the teacher's digital competence across six areas: professional communication and collaboration, personal learning and development, finding and creating digital resources, teaching and learning practice, student assessment, and facilitating student digital competencies.

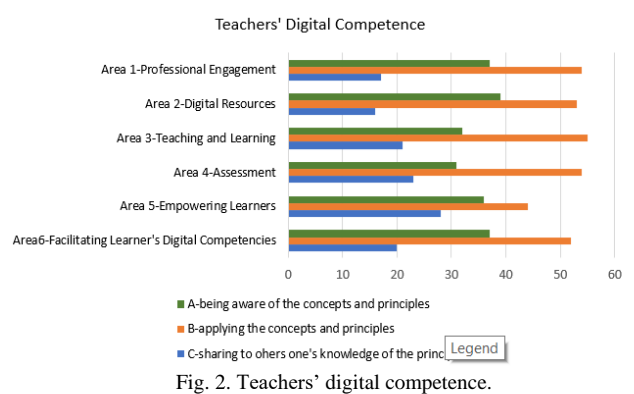


Fig. 2. Teachers' digital competence.

**Support and resources.** HEIs received support to educational delivery in terms of grants and from external funding agencies and local government units. The support was instrumental in ascertaining quality instruction despite space and platforms' limitations. The participants proudly recounted the support afforded during the ERT implementation.

*The kiosks are made available in different towns. The LGUs, in partnership with the university, provided a center where the students could access and print the documents uploaded by their teachers. There is free internet Wi-Fi that; they can download their modules. We call it here a learning kiosk. (CT5)*

*The university decided to use google classroom since it is already available, and most of the teachers are already familiar with the essential functions of google classroom. Then the faculty are required to submit WDP, Work Distribution Plan, as the basis for our internet allowance monthly. (CT3)*

**Curriculum and instruction.** In all phases of curriculum implementation after the closure of schools, HEIs have designed and conducted various training to capacitate the teachers, including instructional materials development and review and learning educational tools and applications for remote teaching. Reference [32] stressed the significant role of school leaders, the need for them to be well-informed on how teaching and learning occur, how to motivate teachers and students, and how to manage school affairs.

*We invited speakers to discuss module preparation during our first training for the teachers. We looked at the possibility of reviewing the student manual made for face-to-face setup. (SA2)*

*Faculty members are encouraged to attend various capacity-building seminars and workshops using technologies focused on online instructions. (CT5)*

## 3) Process evaluation

The prime purpose of process evaluation is to describe all the mechanisms, initiatives, and processes during the ERT implementation. The researchers explored the types and nature of activities considering the practicality and particularity of the selected HEIs. The analyses of the participants' narratives led to the emergence of two overarching themes: *A call for action* and *the culture of change*.

**A call for action.** The transition to remote teaching started with the institutions' reframing strategies. Unit heads

convened virtually to discuss how to go about emergency remote teaching. Collaborative efforts of the HEI stakeholders- administration, teachers, staff, students, and parents, were contributory to the quick transition from face-to-face to remote teaching and learning. There were a series of online meetings and consultations conducted to ensure quality instruction despite mobility limitations and access to the internet.

*The administration convened right away on what to do. The vice president of academics prepared the contingency plan for the upcoming academic year to respond to the COVID 19 pandemic that learning should continue. (CT1)*

*Administrators conducted a series of meetings and dialogues during the first few months after the lockdown. We discussed how to ensure learning even when students are away from school. (CT5)*

*It was more of a quick response to the needs of the students. Our institution instructed us to do the online class, and then after the end of the 2<sup>nd</sup>-semester training, we were conducted and explored the online delivery of lessons. Students answered the survey to address better the differing needs and how to address them. (CT3)*

**The culture of change.** Acknowledging the need for teachers' training and materials' availability in flexible learning modality, HEIs tapped available resources and charted mechanisms to ensure the continuity of learning. Teachers attended training in the learning management systems as complete remote teaching solutions for those students who have access to the internet. Teachers develop modules for those students who could not access the materials online. In other words, teachers learned how to adopt educational tools and adapt teaching pedagogy to address the emerging needs of the students.

*We trained for the learning management system. (CT2)*

*We realized that our students could hardly connect during scheduled synchronous sessions. (SA 1)*

*We conducted intensive training for module development. Also, teachers gave options on how students can access the files and submit their outputs (CT3)*

#### *4) Product evaluation*

A product evaluation assesses the knowledge, skills, attitudes, results, and outputs with ERT implementation. It also focuses on the costs and benefits caused by the transition from face-to-face to remote teaching. The goal of this part of the assessment is to ascertain whether the ERT implementation met the intention to provide quality instruction at the time of the pandemic. Two indexed themes emerged from the categories that describe the costs and benefits of ERT: *Flexibility and Resilience and Self-helpfulness and Interdependence.*

**Flexibility and resilience.** The transition from face-to-face to remote teaching caused the HEIs to be flexible and resilient. While it is not yet clear that school operations are back in normalcy but the HEIs were able to pull through the conduct of services remotely. Well-defined rules and revisions of the manual of operations are a few of the considerations of this pandemic.

*Compared to last year, the rules were more defined. Unlike in the past when we were left to decide what to do. We*

*must say we were improving in the way things are in terms of infrastructure and technology (SA3)*

*Now we have enhanced manuals, all manuals about flexible learning. Teachers had an effort to learn the new ways of teaching, to be adept with the LMS.(SA2)*

**Self-helpfulness and interdependence.** There has been a felt continuum from self-helpfulness to interdependence. The teachers responded to the emergency remote teaching by self-learning digital tools. With technological knowledge and skills, teachers could produce materials like instructional modules not conceived during the pre-COVID period. With the help of colleagues and the plethora of available tutorial materials, teachers and administrators could expand what they know and can do. Appreciation of diverse modalities, use of online platforms, conferencing and document tools, video editing, and sharing were among the many benefits of the new educational setup. Below are some of the participant's vignettes.

*There is ongoing professional help that we received. We also need to learn for ourselves different educational tools and applications. (CT7)*

*The senior faculty continued to share content development while the new faculty offered to help through informal tutorials on using technological apps to engage the students. (CT2)*

#### *B. Discussion*

Without internet connection and the materials to be used both for online and offline instruction, teaching and learning at emergencies is a real challenge for both teachers and students. Reference [33], [22] supported the findings describing how the pandemic taught us to regard the internet as critical, the new basic, in most sectors, especially education. Schools acknowledge the importance of digital networks and service platforms more than ever. Corollary to this is the study findings of [34], citing the disparities in access to quality broadband for HEIs, which constrains student engagement in an online class. The typical policies and expectations on student outcomes, according to [35], were challenged while engaged in remote teaching. With this, HEIs may prioritize access to campuses and support students with poor internet connectivity.

Acknowledging school as one of the greatly affected sectors by the pandemic, [36] acknowledge instructional leadership and equity-oriented school management and practices as critical aspects during educational crisis incidents. As to the case of the selected HEIs in Region VII, ERT was possible because of the administration who acted and decided to deliver instruction depending on what suits best to the learners and teachers. Reference [36] emphasized the leaders' role in addressing communication issues of office orders, protocols, and guidelines to ensure joint and shared understandings and commitment among the education stakeholders.

In an era characterized by the changing educational landscape, the expansion of technological infrastructure, as mentioned by the participants, made them thrive as they respond flexibly and quickly to changes in the teaching modality. The learning continuity plan incorporated the optimal institutional response to the emerging needs of both

teachers and students.

The context of emergency remote teaching implementation can be summarized in terms of preparation, readiness, and technological necessity. Reference [12] cited that despite extensive support by government and school systems, barriers were still identified, especially during the early days of technology use. The barriers may include professional support and access. Similarly, [37], [38] highlight technological requirements for successful online teaching. Teachers accustomed to holding face-to-face classes needed the appropriate training.

However, with the concerted efforts of the internal stakeholders- the teachers and administrators- HEIs can identify their needs and how they will go about these needs. The awareness of what needs to be done and the limitations placed upon individual needs propelled the HEIs to determine and maximize the available resources- human and non-human. The result also indicates the vital role of stakeholders during educational change, as revealed in the study of [39]. Understanding institutional contexts help prepare for similar situations in the future.

In terms of professional engagement, the teachers may not be digital natives. However, they are already using digital technology responsibly in their communication and collaboration with students and colleagues with the technology infrastructure in the university. In terms of digital resources, the majority of them can use and share relevant educational resources that help them meet the learners' needs while giving due credits to their original creator. With this, they can innovate their teaching strategies using emerging technologies to provide students opportunities to enhance and regulate their learning. Along with assessment, the teachers can use digital assessment platforms that provide immediate feedback to attain the learning outcomes. It is also noteworthy that they can use the appropriate digital technology that engages the diverse group of students in active learning that facilitates learners' digital competence. In the conduct of their lessons, they allow the learners to navigate the digital environment through the learning activities they provide while allowing students to consume digital information responsibly.

Reference [40] in a study found several problems associated with distance learning during the pandemic, which led to the design of the course program to improve the teachers' digital competence. These cover pedagogical design, rubrics development, collaboration tools, monitoring, and online resources for educational purposes. Corollary to this, [41] identified prospects of e-learning as the study outcomes revealed an increased efficiency of work for both teachers and students when refresher courses that support e-learning implementation. Hence, with the perceived digital competence are the identified support and resources to withstand the requirements of delivering flexible learning options to the pre-service teachers.

Reference [42] issued the guidelines on implementing flexible learning and has provided grants to HEIs for all approved projects related to the flexible learning modality. In addition, local government units, in partnership with the institutions, also responded quickly by assisting the learning institutions by providing the place where self-learning

modules could be distributed and providing computers where students could access electronic copies of the learning materials. Local colleges provided the budget for LMS and teacher training. On the hand, stakeholders, specifically, the teachers, are also grateful for the support provided by their respective institutions in the form of internet allowance, connectivity kit, gadget, laptop, and load per month.

The vignettes from the participants showed that there are different inputs based on the availability of resources, the support obtained, and the need of the teachers and students. Such variations could be attributed to what [43] considered as 'particularity'-the uniqueness of every situation. There can be no standard and established set of procedures to follow, nor can there be universal steps to take. Like the pedagogic parameter, HEIs input in terms of resources and support, curriculum, policies, and initiatives are the solutions to the local exigencies, the institutional and social contexts in which reframed instruction has to occur.

The support provided to the teachers and students is closely linked to what [44] considered in the trajectory of flexible learning delivery, the vital role of technology, and the teaching and learning environment. In the context of the pandemic, curricular reframing necessitates looking into the students' and teachers' welfare in terms of connectivity, production, access to instructional modules, learning management, and assessment of student learning.

Teachers and administrators realize that even among them, there would always be colleagues who can share their expertise within and during curriculum preparation and delivery. In addition, ERT has led to revisiting existing policies and manuals to address emergent educational needs better. Long before, [10] argued that rapid advances in ICT have brought significant changes in online and distance education practice. Such claims supported policy recommendations and administrative changes that support innovative teaching practices. Moreover, flexibility in coursework submission to cater to the needs of the students who did not have the means to connect via online class is a viable option. During the first semester of remote teaching, the distribution and retrieval of learning modules were problems; hence, the extension of submitting grades.

Flexibility in giving students a choice on the pace, place, process, and product of learning was evident [44] averred that such flexibility can promote appropriate and need-based pedagogical practice. With this, syllabi repurposing on competency development required coursework, and assessment tasks necessitate conscious and concerted efforts to recalibrate the curriculum and instruction.

The immediate response to ensure the continuity of learning started with school leaders whose actions were pivotal in delivering remote teaching and learning. They conducted webinar workshops to enhance the teachers' understanding of free technological tools and educational apps; to redesign the syllabus to cover essential competencies; and to provide flexibility provisions, especially to students, categorized in Group C or those with no internet connection.

The newfound spaces of teaching and learning were supported by a plethora of research on how teaching and learning took shape right after the outbreak of COVID-19, [3], [25], [44]-[46]. The current study showed the gaps and

gains when face-to-face classes shifted to remote teaching and learning. Reference [47] used the term digital pedagogical pivot as an ERT option. Key to the implementation of remote education is the assurance that all teachers at the forefront of education received the needed support. The administration has looked into their adeptness to information technologies to transfer content, model competencies, and assess student performance. Hence, by looking at the process of ERT, future initiatives and reprogramming of educational services may be advanced.

Module development and navigating the learning management systems were considered the 'musts.' Teachers confirmed the support provided with the continuous training in educational technologies and module development. Mentorship contributes to the smooth implementation of emergency remote teaching. Here are some of the narratives. The ongoing faculty capacity building on educational tools has helped during the transition to ERT.

Teachers become learners in the new normal equipping themselves with the what, the how, and the where of teaching. Definition of learning spaces and places has expanded to account for the flexible learning modality. Faculty engagements have also reshaped to consider the necessity of adopting and adapting to learning resources and platforms. Considerably, pre-service teachers affirmed the implementation of the modality required as learning materials and tasks can be accessed and done offline during the asynchronous sessions. Synchronous classes are held once a week due to internet data or connectivity issues. The synchronous setup allows both teachers and students to stay productive despite the limitations. To [48] on their espoused teachers-as-learners continuous learning model, teachers, with the most moves, with the knowledge of education technology, have the most options. These options, in turn can have the most significant degree of influence on their students.

Generally, the progressive changes of instructional delivery amid the pandemic indicate the importance of the process and contribution from the social beneficiaries as significant partners in an expanding education community. Moreover, the narratives revealed that changes in instructional delivery were necessary as vital and well accepted by internal stakeholders. They have invested personal resources to complement the institutional support provided to them. The immediate response or the call for action led the actualization of the culture of change this pandemic has caused.

The transition was not smooth at first, but teachers and students embraced the realities of remote teaching throughout the academic year. Indeed, concerns on technological access and capabilities that ensure engagement need to be addressed. Reference [22] stressed that various ways to reduce the effect of the identified barriers to teaching and learning could be addressed at different levels with the concerted efforts of those involved. Resilience as noted is one of the surmounted skills that addressed the likelihood of learning losses due to closures of HEIs. It helped HEIs create a safe and supportive virtual learning environment through policies and practices supportive of teacher and student welfare.

The implementation of remote teaching via LMS, along with the felt learning setbacks have been addressed in a plethora of research [24]. Literature on suggestions for an effective remote education during the pandemic abound. Reference [13] described the guidelines published by reputable organizations like the International Society for Technology in Education while [9] established the remote learning experiment. The findings of the current study in terms of instructional strategies in ERT implementation are indicative of the abrupt transition to ERT. Teachers are adopting significant pedagogical changes to their teaching practices to make learning inclusive and accessible for all.

Some outcomes include the new skill set by the administrators. They can now monitor classes virtually. They have developed systems in organizing e-documents and reports. They can now make presentations during meetings. The current situation made them develop their technological skills. They have learned the strategies to get connected and learn from each other's practices. Hence, school administrators found the advantages of technology to carry out their functions.

Notwithstanding the many affordances of remote teaching, the participants also identified some downside such as the absence of human touch, the difficulty of assessing students' acquisition of competencies, and the absence of immediate feedback.

Overall, the study's findings showed that there is a requirement to check input and in terms of many aspects-human and non-human to achieve the desired results without losing sight of institutional context. Research conducted on teacher service-learning programs at the university and local school level [28] also supported the present study's findings that used the CIPP model for assessing needs, formulated plans by using input evaluation, monitored progress using process evaluation, and assessed inputs using product evaluation.

Although using CIPP as the model for evaluation, the current study differed from the previous researchers in two aspects: the quality evaluation through the teacher's digital competence as an entry requirement and the experience of the teachers and administrators in the successful implementation of remote teaching.

The current remote delivery of instruction setup involves strengthening the education system to overcome challenges and to address the risks of ERT. The CIPP evaluation presents insights on how immediate concerns are acknowledged and their crucial positioning in the dynamic system of an educational institution. There were initiatives in response to emergencies that ensured continuity of learning. Core management planning was instrumental in the actualization of emergency remote teaching. As such, as an offshoot, there was student categorization on connectivity and curricular reframing initiatives of the higher education institutions.

### *C. Practical Implications*

With the prevailing context, input, processes, and product of higher education institutions and in response to the fluidity of remote teaching, uncertainties can be addressed when institutions consider drafting policies that expand

stakeholders' skills set in actualizing the curriculum for distance or remote education. These may include not just addressing access to tools and internet connectivity but also coaching teachers, administrators, and students on educational technology tools for teaching and learning. EdTech tools are evolving, and they need to stay up to date with various tools. Partnerships with EdTech providers may offer comprehensive and ongoing support for internal stakeholders.

The current setup also requires solutions to support education innovation. Investing in various instructional design modes will be integral to fostering a more successful transition to ERT when a global education crisis occurs in the future. Moreover, how HEIs approach remote learning not to miss out on virtual learning opportunities is an area of concern. Exploring the requirements of at-home learning and the co-creation of instructional goals are viable options. Considerably, as a response to struggles on motivations and engagement, an ongoing feedback loop may facilitate clear lines of communication, which is essential in actualizing charted remote education mechanisms.

## V. CONCLUSION

The evaluation of the implementation of emergency remote teaching of higher education institutions provided the context, realities, gaps, and gains of the reframing initiatives due to the abrupt changes in instructional delivery. The implementation of flexible and remote instruction validates that for online learning to thrive for both students and teachers, online sources and tools have to be in place, and instructional delivery at the time of pandemic can be well-understood in terms of context, input, process, and product.

The global pandemic has led to the realization of the gap in implementing emergency remote teaching to ensure continuity of learning given the spatial-temporal challenges in providing quality education. ERT has drastically changed the pedagogical practices and perspectives as a response to a flexible learning setup. With the curricular reframing, teachers and administrators have exercised their ingenuity to address the demands of flexible instruction.

The curricular transformations as a response to an emergency were contingent upon the technological capabilities of education institutions. Remote teaching approaches, accessibility, and online teaching elements indicate the immediate transition to ERT. However, the hurdles associated with school infrastructure, teachers' digital competence, and mode of instructional delivery paved the way for institutions to be creative and resourceful in actualizing the desired educational trajectories.

## APPENDIX

### A. Interview Guide

- 1) How was the transition from face-to-face to emergency remote teaching/learning? What policies and programs were instituted? What needs and challenges were identified?
- 2) What internal and external resources were necessary in

supporting this transition?

- 3) How did the university perceive responsiveness to the shift to remote teaching?
- 4) How do you regard the technology infrastructure to handle the needs of the ERT? What trainings and resources were provided to the teachers and students to support the transition?
- 5) Describe your ongoing faculty professional development. How can opportunities for immediate and flexible learning be enhanced?
- 6) Where do you struggle the most with ERT? How did the teacher go about remote teaching? What pedagogical interventions were implemented?
- 7) How can processes be adapted to respond to operational challenges?
- 8) What were the outcome/s of ERT initiatives? What are the perceived benefits and costs of ERT?
- 9) How has feedback from stakeholders' support/ inform ERT needs in the future?

## CONFLICT OF INTEREST

The authors declare that the research was conducted without any commercial relationships that could be construed as a potential conflict of interest.

## AUTHORS CONTRIBUTIONS

RCB, FD, VM, and RTB contributed in the conception and preparation of the design of the study. VM collected and tabulated the data on teachers' digital survey. RCB and RTB conducted the interview with the participants. RCB, FD and RTB wrote the first draft of the manuscript. All authors wrote sections of the paper and helped in its revision.

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