


# Pandemic, Higher Education, and a Developing Country: How Teachers and Students Adapt to Emergency Remote Education

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## Abstract:

The sudden transition to emergency remote education (ERE) caused by the pandemic has been a highly complex undertaking for teachers and students alike. For developing countries, such a disruption only aggravates the pre-existing global education crisis and influences the sector in unprecedented ways. Thus, we explored how teachers and students from higher education in a developing country adapt to ERE during the pandemic. Specifically, we attempted to identify the common challenges faced by teachers and students and their coping strategies to handle pandemic-induced stress. To this end, we conducted a comparative cross-sectional study from October to November 2021 with 78 teachers and 94 students from a higher education institution in Manila, Philippines. Our results show that while self-regulation is the greatest challenge among students, it is the conduciveness of the home environment for teachers. Interestingly, although teachers and students have varying concerns, both groups rely on acceptance, humor, and positive reframing as their coping strategies. By painting a holistic picture of the challenges and coping strategies of both teachers and students, education policymakers and administrators can make an informed decision on how to best continue ERE and prepare in advance for the resumption of school in the new normal.

## Keywords:

Higher Education, Online Learning, COVID-19, Pandemic, Emergency Remote Education, Distance Education, Developing Country, Philippines

## Reference to this paper should be made as follows:

Garcia, M. B., Revano, T. F. (2022). Pandemic, Higher Education, and a Developing Country: How Teachers and Students Adapt to Emergency Remote Education. *2022 4th Asia Pacific Information Technology Conference (APIT)*. DOI: 10.1145/3512353.3512369.

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This is a post-peer-review, pre-copyedit version of an article copied from <https://manuelgarcia.info/publication/emergency-remote-education> and published in the proceedings of the *2022 4th Asia Pacific Information Technology Conference (APIT)*. The final authenticated version is available online at: <https://doi.org/10.1145/3512353.3512369>

# 1. INTRODUCTION

Educational reform has been at the forefront of innovation in education and development, prompting significant positive changes that affect the teaching and learning experience on a worldwide scale. Over the past decades, the accelerating changes precipitated by the information age in the education landscape have led to online education acceptance. Consequently, online education became one of the fastest-growing developments in educational uses of technology (Means et al., 2013). To understand the nature of online education acceptance, many researchers have attempted to pinpoint the factors affecting the intention to use online learning systems (Šumak et al., 2011). In addition, numerous studies have integrated various theories with the well-known Technology Acceptance Model to further the ever-expanding understanding of users' (e.g., teachers and students) intention to accept online education (Mustafa & Garcia, 2021). In the Philippines, additional constructs were evaluated, such as internet connectivity experience, systems interactivity, perceived quality work of life, integrated multimedia instruction, social media experience to ensure a contextually appropriate model (Garcia, 2017). While online education has been a practice for years, it was only established as an extension of mainstream instruction.

Recently, an unexpected educational reform was promulgated caused by the unprecedented global health crisis (i.e., COVID-19 pandemic). What was once an extension is now the primary mode of instruction as schools transitioned from the physical "brick and mortar" classroom to an online environment to ensure the continuation of education. To compensate for this sudden transition, many education institutions have applied various crisis response measures such as policy and curriculum revisions, an adjustment in the academic calendar, creation of online learning materials, and offering of an asynchronous mode of learning, to name a few. Given the tragedy and uncertainty of today's world, it is important to empathize and understand the emergency remote education (ERE) experience of both teachers and students in the time of the pandemic. By doing so, educational leaders and policymakers can enhance the efficiency of ERE and prepare for the time when students return to school. Although many studies about ERE have been already conducted within the context of the pandemic, there are key differences setting this study apart. First, we conducted a comparative cross-sectional study that combined the experiences of both teachers and students. Most investigations are either focused on students or teachers. By combining their perspectives, a coordinated response can be plotted to support both stakeholders in addition to the individual and specific policies. Then, the ERE experience in this study encompasses both the challenges and coping strategies, which can be used as a basis when developing further measures and interventions. With the Philippines as the selected developing country, it is expected to obtain a unique perspective on ERE during the pandemic as it is among the last countries to attempt reopening schools while in a middle of a health crisis.

## 2. LITERATURE REVIEW

### *2.1. Pandemic and Higher Education*

Faced with an unprecedented situation, higher education institutions had no choice but to transfer the physical classroom into the online environment. A broad discussion was initiated to establish a formal educational term for teaching and learning during the pandemic, and ERE seemed to be the most favored by institutions. According to United Nations, nearly 1.6 billion learners in more than 190 countries were affected by the COVID-19 disruption (United Nations, 2020). Apart from facing the disease and abrupt school shutdowns, many studies have evaluated the challenges and barriers as well as the toll on the well-being and mental health of both teachers and students. With an increased workload due to teleworking, a longitudinal study found that the perception of teachers has been affected by the pandemic (Lizana et al., 2021). A significantly lower psychological wellbeing was also identified among women, individuals with health risk factors, and people under 50 years of age. Meanwhile, there has been increased stress and anxiety among students due to stressors, such as difficulty in concentrating, disruptions to sleeping patterns, amplified concerns on academic performance, decreased social interactions due to social distancing, and fear and worry about their health and of their loved ones (Son et al., 2020). With the adverse impact of COVID-19 on both teachers and students, it is vital to identify the best way to support them during these trying times.

### *2.2. Pandemic and Developing Countries*

While the adverse effect of the COVID-19 pandemic was felt worldwide, its impact is unequal and more severe to developing countries (Bottan et al., 2020). Despite nonpharmaceutical interventions (e.g., lockdown, mask-wearing, and social distancing) similar to other nations (Kantor & Kantor, 2020), developing countries faced more job loss and business closure leading to a significant reduction in health and food security. According to the trade and development report from the United Nations (UNCTAD, 2020), while the economic fallout from the COVID-19 is still ongoing, there are strong indications that developing economies are yet to face worse consequences. This foretelling could mean that the aftermath of the pandemic might make every sector more turbulent as the government attempts to rebuild its sagging economies. Moreover, the post-pandemic world could experience increased inequalities, and developing countries may struggle to find resources to mitigate the adverse effects and consequences. With the unique challenges and hardships faced by developing countries, understanding their experiences during ERE could provide a unique perspective not obtainable from studies in developed countries.

### *2.3. Pandemic and Coping Strategies*

The challenges brought by the pandemic in higher education and the coping mechanisms of teachers and students have been a common focal point of discussion in recent years. For teachers, finding the best way to avoid digital inequality among students has been a fundamental

challenge in addition to incompatible content and instructional materials, the issue of online teaching quality, and the absence of support and training. Nevertheless, teachers were quick to develop their skills in using whatever emerging technologies needed and develop suitable digital content as a way of assuming their responsibility during ERE (Khlaif et al., 2021). Conversely, students faced challenges to different extents and types such as limited teacher scaffolds, overloaded lesson activities, inadequate learning resources, financial-related problems, poor learning environment, mental health struggles, conflict with home responsibilities, and more (Rotas & Cahapay, 2020). This finding is similar to studies from other developing countries asserting that students experienced ineffective learning while in the middle of a pandemic (Comelli et al., 2021; Noori, 2021; Twinamasiko et al., 2021). At the start of the pandemic, many Filipinos expressed their negative sentiments and emotions such as anger, fear, sadness, and surprise (Garcia, 2020). Yet, regardless of their battles and challenges, both teachers and students have been actively pursuing the best mechanism to cope with the crisis. For instance, students cope by borrowing learning resources, looking for reasonable space and time, seeking support from peers and teachers, practicing time management, and more (Rotas & Cahapay, 2021). On the other hand, teachers use social media, discover a new hobby, seek spiritual guidance, spend time with family, and talk with friends and special someone online [18]. Not only the educational routine was interrupted by the pandemic, but the daily lives of both teachers and students were also directly influenced as well. Therefore, continuously seeking what and how to help these stakeholders succeed in the new mode of learning is significant to all policymakers.

### 3. MATERIALS AND METHODS

This study followed a quantitative, comparative, cross-sectional design to evaluate how teachers and students adapted to ERE following school closures. It involved 78 teachers (37 male and 41 female) and 94 students (56 male and 38 female) from one higher education institution in the Philippines ( $n = 172$ ). These participants were from technology-related degrees whose ages ranged from 17 to 23 ( $\bar{x} = 18.85$ ;  $SD = 1.94$ ) for students and 27 to 52 ( $\bar{x} = 35.41$ ;  $SD = 9.47$ ) for teachers. All participants have been engaged in ERE for at least three terms in either two modes of learning delivery: fully online and blended online. Participation in the study was voluntary, which may explain the small sample size. Both the invitation to participate and the self-reported questionnaire were posted as announcements in the online learning management system.

Before filling out the questionnaire, informed consent was obtained. Every participant who was willing to participate had to check the option “*I agree to take part in the study*” below the project description, its objectives, and other necessary information (e.g., risks and benefits, disclosure, and confidentiality) that must be disclosed. The questionnaire has three sections: (1) personal information, (2) challenges faced during ERE mode, and (3) coping strategies. The personal information section includes questions, such as age, gender, availability of devices, and type and speed of internet connection. Meanwhile, the typology of challenges was grouped into five clusters: self-regulation, digital competency, home environment, technological sufficiency, and instructional resources. Finally, coping strategies were based on the multidimensional COPE

inventory (Endler & Parker, 1990), which identifies three types of coping styles: emotion-oriented, task-oriented, and avoidance-oriented coping. Nevertheless, some items were revised (e.g., from “*visit a friend*” to “*seeking emotional support*”) to properly match the context of the pandemic situation. Three experienced researchers were recruited to review the questionnaire for content and face validity, and a pilot survey showed good internal consistency ( $\alpha = 0.89$ ).

The collected data were split into two groups (i.e., teachers and students) and were analyzed anonymously using IBM SPSS Statistics. Personal information was reported, and data distribution was tested using descriptive statistics. Mann-Whitney U test, the nonparametric alternative to the independent t-test, was used to determine the significant difference in ratings between teachers and students. This test was utilized because the data were ordinal and non-normally distributed, which are requirements for the parametric test. Finally, this paper serves as part of a larger research project that investigates the lived experiences of teachers and students while under the ERE mode is being implemented in the middle of the pandemic. In the long run, the main goal of the project is to provide policymakers with the necessary information in planning the school reopening.

## 4. RESULTS AND DISCUSSION

The goal of this study was to identify and compare the common challenges faced by teachers and students, and their coping strategies to handle pandemic-induced stress while undergoing ERE. Towards this goal, a comparative cross-sectional study was conducted with 78 teachers and 94 students from a university in Manila, Philippines. For this set of participants, the availability of devices is not a problem as most teachers have access to a laptop ( $n = 71, 91.02\%$ ) while students have access to a desktop computer ( $n = 84, 89.36\%$ ). Both teachers and students have a smartphone ( $n = 172, 100\%$ ), and the majority possess at least two devices ( $n = 168, 97.67\%$ ). This may be explained by the fact that the participants are from technology-related degrees where access to a device is needed. In terms of internet speed, both teachers ( $n = 65, 83.33\%$ ) and students ( $n = 74, 78.72\%$ ) reported an intermittent connection (i.e., sometimes fast, sometimes slow). As a national problem, this finding is consistent with the behavioral factors affecting users' acceptance of online learning in the country (Garcia, 2017).

In terms of challenges faced by teachers and students, a mixed finding was obtained. Our results show that while self-regulation ( $\bar{x} = 3.63, SD = 1.62$ ) is the greatest challenge among students, it is the conduciveness of home environment ( $\bar{x} = 3.59, SD = 1.48$ ) for teachers. First, this finding suggests that students cannot exercise control over their actions, emotions, and thoughts to achieve their educational goals. This is unsurprising since students are experiencing severe psychological distress due to the pandemic – an unprecedented situation that has a serious impact not only on their mental health but also on their daily life in general (Khawar et al., 2021). It may also explain why students are not satisfied in ERE since self-regulation is one of the predictors of students' satisfaction with online education (Hamdan et al., 2021). Meanwhile, the conduciveness of the home environment being a challenge for teachers may have something to do

**Table 1: Challenges Faced by Teachers and Students**

<b>Challenges</b>	<b>Teachers</b>	<b>Students</b>	<b>p-value</b>
<i>Self-Regulation</i>	<b>1.45 ± 2.31</b>	<b>3.63 ± 1.62</b>	<b>0.041</b>
1. I have a hard time setting educational goals for myself.	1.76 ± 2.18	3.45 ± 1.02	
2. I have limited preparation before an online class.	1.28 ± 1.79	2.77 ± 0.94	
3. I have trouble making up my mind about things.	1.12 ± 2.36	3.98 ± 1.69	
4. I lack the ability to control my own actions and emotions.	1.64 ± 2.78	4.31 ± 1.53	
<i>Digital Competency</i>	<b>1.83 ± 1.44</b>	<b>1.14 ± 1.21</b>	<b>0.126</b>
5. I lack proficiency and competency in using various systems.	2.07 ± 1.44	1.12 ± 0.75	
6. I am not familiar with various aspects related to computer.	1.72 ± 1.79	1.35 ± 0.89	
7. I have no confidence in using computer and the Internet.	1.64 ± 1.29	1.06 ± 0.76	
8. I would not know how to operate a learning management system.	1.88 ± 1.51	1.01 ± 0.51	
<i>Home Environment</i>	<b>3.59 ± 1.48</b>	<b>2.16 ± 1.51</b>	<b>0.039</b>
9. I am distracted by family members at home.	4.38 ± 1.66	1.28 ± 1.53	
10. I am distracted by social media during online classes.	2.17 ± 1.91	4.26 ± 1.12	
11. I cannot be productive due to my household chores.	4.21 ± 1.27	1.72 ± 0.89	
12. I cannot find the best time to participate in my online classes.	3.25 ± 1.92	1.69 ± 1.46	
13. I do not own a personal educational space at home.	3.92 ± 1.15	1.87 ± 1.65	
<i>Technological Sufficiency</i>	<b>1.79 ± 0.94</b>	<b>1.57 ± 1.25</b>	<b>0.114</b>
14. I have an insufficient access to learning technology.	1.35 ± 0.76	1.15 ± 0.43	
15. I have an insufficient Internet access at home.	2.53 ± 0.91	2.24 ± 1.23	
16. I have an outdated device for online classes.	1.36 ± 0.89	1.12 ± 1.41	
17. I experience technical difficulties during online classes.	1.92 ± 1.23	1.78 ± 1.32	
<i>Instructional Resources</i>	<b>1.81 ± 1.71</b>	<b>2.27 ± 1.62</b>	<b>0.612</b>
18. I feel like teaching aids will not make any impact.	1.57 ± 1.64	2.12 ± 1.43	
19. I have an insufficient access to our online library resources.	1.23 ± 1.47	2.11 ± 1.92	
20. I feel like the instructional materials are not enough.	2.64 ± 2.06	2.59 ± 1.67	

with their primary role at home: as a parent. Aside from their household chores, it is also possible that they are performing the role of teachers to their children (aside from their students in school), which is a common setup during the pandemic (Rohita, 2021). Interestingly, among the challenges listed on Table 1, only self-regulation ( $U = 154$ ,  $p = .041$ ) and home environment ( $U = 128$ ,  $p = .039$ ) were significantly different. This finding means that the other challenges (i.e., digital competency, technological sufficiency, and instructional resources) are being experienced by both stakeholders to the same extent. For this set of participants who are used to the online

education mode even before the pandemic, these challenges are not as relevant from them as in other people. As such, both teachers and students need personal rather than educational or technological support.

**Table 2: Coping Strategies of Teachers and Students**

Coping Strategies	Teachers			Students		
	Mean	Median	SD	Mean	Median	SD
Acceptance	4.39	4.00	1.56	4.32	4.00	1.53
Acting Coping	4.16	4.00	1.29	4.19	4.00	1.30
Denial	2.04	2.00	1.43	2.17	2.00	1.92
Humor	4.21	4.00	1.27	4.23	4.00	1.43
Managing Priorities	3.92	4.00	1.64	3.76	4.00	1.89
Planning	3.93	4.00	1.46	3.35	3.00	1.53
Positive Reframing	4.26	4.00	1.12	4.25	4.00	1.24
Religious Coping	3.96	4.00	1.17	3.53	3.00	1.64
Seeking Emotional Support	4.19	4.00	1.34	4.21	4.00	1.64
Self-Blame	2.32	2.00	1.22	2.43	2.00	1.68
Self-Distraction	1.05	1.00	0.32	1.23	1.00	1.47
Substance Abuse	1.00	1.00	0.00	1.00	1.00	0.00
Venting Emotions	2.44	2.00	1.81	2.48	2.00	1.46

During the stressful and traumatic situation of the pandemic, Table 2 shows that the most employed coping mechanisms of teachers and students were acceptance ( $\bar{x} = 4.36$ ,  $SD = 1.54$ ), humor ( $\bar{x} = 4.22$ ,  $SD = 1.39$ ), and positive reframing ( $\bar{x} = 4.26$ ,  $SD = 1.22$ ). On the other hand, coping strategies such as substance abuse ( $\bar{x} = 1.00$ ,  $SD = 0.00$ ), self-distraction ( $\bar{x} = 1.14$ ,  $SD = 1.08$ ), and denial ( $\bar{x} = 2.11$ ,  $SD = 1.63$ ) were used the least frequently by teachers and students to cope with stress during the pandemic. It is also interesting to see the pattern where both groups have similar ratings to their coping strategies in terms of score order except for managing priorities, planning, and religious coping. Meanwhile, all coping strategies were not significantly different between the two groups ( $p > 0.05$ ). With consideration to acceptance as the most employed coping strategy of both groups, this indicates that the participants are more likely to employ an emotion-oriented coping style, which is consistent with the studies from Poland (Babicka-Wirkus et al., 2021), Spain (Morales-Rodríguez, 2021), Ecuador (Hidalgo-Andrade et al., 2021), and Pakistan (Baloch et al., 2021), to name a few.

The results from this study may serve as a basis for designing practical interventions that could support both teachers and students not only during ERE but also in preparation for when they return to school. With emotion-oriented coping strategies being the most employed to adapt

to ERE, there is an opportunity to tap this mechanism by developing intervention programs purposely for emotional regulation leading to the acquisition of socioemotional competencies. Universities are now called upon to fulfill a crucial role in offering social support that minimizes risk factors and maximizes protective factors. Meanwhile, intervention programs that promote other coping styles (e.g., task-oriented) could be implemented as well to strengthen how teachers and students adapt to ERE. In this regard, helping stakeholders to acquire greater self-knowledge in addressing stress-related problems can be a valuable personal quality. As the education sector gradually returns to the old and original mode of teaching and learning, it is also important to put programs in place to ensure that everyone receives whatever support they may need. For instance, the Guidance Unit may create training actions to guide students on how to self-regulate their education in the new normal to ensure that the greatest challenge they faced during ERE will not remain a problem when they return to the physical mode of education. Finally, as the challenges faced by teachers and students were different, it is important to emphasize that education institutions should design programs that offer support to both groups rather than the welfare of just one. This is the reason why both teachers and students were recruited in the study instead of focusing on either group.

Our cross-sectional study is not intended to test any causal relationships between teachers' and students' challenges and coping strategies. Thus, we recommend future studies to test for these effects. There is also a need for longitudinal studies to see how teachers and students adapt to ERE over time. In terms of technological innovation, future researchers should investigate the effectiveness of deploying a learning analytics dashboard [27] in online education platforms to monitor student academic performance automatically and consistently. In a recent study, it was found that stress predicts a lower grade point average [28]. By having real-time data, proper interventions could be implemented to avoid long-term serious negative repercussions. It is also significant that the lived experiences, sentiments, and voices of stakeholders are transmitted to and received by the educational leaders in order to substantially create new and revise existing academic policies. Lastly, the limitations of the study may also be addressed in future works. Due to the present lockdowns, the lack of random selection and limited sample size means that the generalization of the results may be limited.

## **5. CONCLUSION**

The interruptions caused by the COVID-19 pandemic have resulted in challenges that impede the usage and success of ERE. Our results show that while self-regulation is the greatest challenge among students, it is the conduciveness of the home environment for teachers. This finding indicates that both teachers and students need more personal rather than educational or technological support to effectively adapt to the present mode of education. As a means of coping with the stress precipitated by the pandemic-induced education, emotion-oriented strategies such as acceptance, humor, and positive reframing were employed by teachers and students. With these results and realizations, both the government and education policymakers can make more



informed decisions on how to best help their stakeholders continue education in the middle of a pandemic.

For almost the past two years, the education sector has been seriously affected by COVID-19 yet continues fighting to survive this crisis for this and future generations' sake. Despite the challenges and hardships, these experiences will only make the education system stronger than before. We deeply believe that the obstacles we faced during ERE can serve as a route from short-term turmoil to long-term triumph. As we look toward the future, the lessons of the pandemic will fuel the engines of future education systems where everyone can succeed regardless of whether online or physical and pandemic or not.

## ACKNOWLEDGMENTS

The authors would like to thank FEU Institute of Technology for funding the conference presentation as well as the teachers and students for participating willingly in this study.

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