Challenges Encountered during Pandemic in Flexible Learning Among College Students Living in Urban, Rural, and Suburban Areas in the Philippines

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Abstract – *The study aims to identify and differentiate the challenges encountered by the college students living in urban, rural and suburban areas in one province in the Philippines. Quantitative descriptive type of research was utilized in the study with 367 college students from different academic institutions served as survey respondents. Result showed that those who are living in rural areas have significantly higher problem encountered in terms of loss of electricity and lack of people at home with adequate technical skills compared to those living in urban and suburban areas. Students from rural areas have encountered significantly higher challenges on resources and communication while students from suburban area expressed significantly higher challenges in terms of environment Meanwhile, moderate challenges on economic, instruction and learning outcomes are being experienced regardless of their location. Students are concerned on how learning outcomes can be fully achieved from flexible learning modality where laboratory extensive classes are not offered during pandemic followed by their challenges in the delivery of instruction and communication with the teachers.*

Keyword: *educational management, flexible learning, learning environment, learning resources, student outcomes*

INTRODUCTION

Location of the students is important to consider in flexible learning approach in delivering either synchronous or asynchronous classes because of their challenging situation in terms of diverse learning environment, economic condition, mode of communication which might affect the availability resources, delivery of instruction, and achievement of the learning outcomes. The accessibility of information, internet connection and other concerns from their location in rural, urban, or suburban areas can influence the teaching and learning process.

Most of the higher education institutions were located in the urban areas. Before pandemic, the students travelled for couple of minutes to more than an hour just to reach their classes every morning and will return to their respective places at night. But when pandemic comes March 2020 in the Philippines, everything has to be changed. To continue the schedule of classes, everything has to be done remotely or online. Flexible learning is a great learning system for HEIs to meet students' diverse needs and preferences where HEIs can benefit from this modality [1], whether students are ready or not to take the challenges of this online learning approach. Instructors, learners, and institutions all play a role in flexible learning [2] but even the family members are important element to be included in this kind of learning process because of their participation and support in the social environment where the learning takes place at home. Flexible learning is often used synonymously with terms such as e-learning, open learning [3]. In this way, teaching and learning can be flexible rather than fixed, to promote easy, engaged and effective learning [4].

However, limited resources for online learning had been considered as some of the major challenges faced by teachers and students. The result of the study of Dela Cruz and Catura [5] in Philippine setting showed that teachers are doubtful on the availability of a reliable internet connection and computer accessories like microphones, headphones, and webcams to be utilized in virtual classroom. Several challenges during the implementation of flexible learning were also identified according to the study of Zhang et al. [6] where the reliability of the infrastructure is hard to guarantee in some rural areas in China.

Several studies considered the significance of geographical location of the schools and/or the learners

in their performance. Like the study of Cakir [7] noted that student achievement gap between urban and suburban regions are a major issue in US schools. Another study investigated when the results of the performance of students from all parts of Australia who participated in the OECD/Programme for International Student Assessment (PISA 2000) were analyzed based on geographical location where large gaps emerge in student achievement between remote, rural and metropolitan schools [8]. The results for Australian schools located in major Cities and Inner Regional areas were above the OECD average in reading literacy while Outer Regional Areas and Remote/Very Remote areas were at below the OECD average. Meanwhile, the study of Belay [9] explored on the educational inequality of rural students of Ethiopia using situational analysis where the findings revealed multiple inequalities of rural students that make them in a disadvantaged position compared to urban students. The available distance learning programs homogenizes students which can create educational inequality.

One of the main characteristics of rural area is its low population density [10]. In Nigeria, a rural area is defined as an area having a population of less than 20,000 persons [11]. In western literature, rural area is regarded as a distinct territorial community with villages and small towns to 30,000 inhabitants. The municipalities are the basic administrative-territorial units so we can consider the territory of municipalities with center villages or small towns as rural areas [12]. The rural area is a single sector economy with little scope for diversification [13]. In 2019, the Philippines has 57,140,712 or 52.85 percent Filipinos living in rural areas which is a little lower than Egypt with 57,492,249 or 57.27 percent; Vietnam with 61,129,966 or 63.37 percent and India with 895,386,226 or 65.53 percent [14]. This signifies that majority of the people from these countries are living in rural areas. Unlike Indonesia with 119,115,844 or 44.02 percent where less people are living in rural than urban, the same in Nigeria with 98,156,651 or 48.84 percent.

Meanwhile, in 2010, nine out of the total 80 provinces registered a level of urbanization higher than the national level in the Philippines. Rizal had the highest level of urbanization of 92.7 percent, followed by Laguna (71.9%) and Bulacan (70.9%). In 2007, except for Bataan, these provinces also had a level of urbanization higher than the level of urbanization for the country with 42.4 percent [15].

Furthermore, the farming class reflects the trend that China's rural area is transforming from traditional agricultural society to modern industrial and commercial society [16]. Meanwhile, most of rural land areas in the Philippines is dedicated for farming or agricultural activities. Filipino families are trying to encourage their children to finish their college degrees so that they would not go into farming like what their forefathers and ancestors did who only completed grade school or majority of them were not even finish elementary level. There is a great support from families to finish the college degrees of their children in the Philippines. Furthermore, in China, social mobility in rural area is one of the most important socio-economic phenomena at the current stage [16]. The ability to provide a solution for solving the social issues faced by each rural area is the key to substantiating the necessity for high-speed networks [17]. In China, people living in rural areas have low education levels, low income, heavy labor and different behaviors and lifestyles, compared with people living in urban areas [18]. In Indonesia, rural poverty mostly happens in the remote area. Inequality of income distribution makes unequal development. Development in some of rural area is very slow. It makes the people in those area hard to get out of vicious cycle [19]. Likewise, landslide vulnerability in the rural area is strongly related with the necessary fragility of socio-economic systems in these areas wherein poverty and lack of resources are very common [20].

The poverty level has been largely distributed in rural areas. In terms of the level of poverty in the Philippines according to the data from Macrotrend.net, it shows a negative five percent (-5%) change from the 2012 data of 60.10 percent of poverty to 55.10 percent in 2015 as the latest report based on the percentage living under US $5.50 per day. This signifies that the economic condition of the country is improving from the year 2000 with 64.30 percent of poverty. Poverty headcount ratio at $5.50 a day is the percentage of the population living on less than $5.50 a day at 2011 international prices [21]. If poverty is said to be associated with the quality of education [22]-[24] people living in rural areas struggle to support their education and made their life more difficult to come together with the technology in addressing their gaps between knowledge and survival.

On one hand, the urban area consists of formal manufacturing jobs, an informal sector, and the possibility to obtain formal government jobs or subsidies [13]. The land use in urban area of China is mostly for construction uses, such as commercial use, public building use, residential use [25]. On the other hand, a suburban area is a residential area within commuting distance of an urban center and connected to it by public

transportation and main roads [26]. It is also intertwined with farms [27]. The suburban area in China based on the study of Shi et al., [28] is mainly for the use of agriculture, and only few industries are distributed. Suburban area is a built-up area located in the immediate vicinity of the city's official boundary [29] while according to Barber [30], it is adjacent to a large industrial metropolis and is fairly densely populated.

Thus, this study explored on the challenges of college students encountered in flexible learning modality with regard to resources, environment. Economic, communication, instruction, and learning outcomes and how their respective locations may possibly influence from the acquisition of knowledge and accessibility to necessary information when they are grouped according to their geographic location in terms of urban, rural and suburban areas. Findings of the study may be beneficial to school administrators and local government officials in providing substantial support to the students who are struggling in the implementation of flexible learning not only for college students but also the learners from basic education.

METHODS

Quantitative descriptive type of research was utilized in the study in exploring the challenges experienced by the college students in flexible learning when considered their location as to rural, urban, or suburban areas. There are 367 students participated in the study who are currently enrolled during the 1st Semester Academic Year 2020-2021 from the 385 expected minimum respondents with a response rate of 95.32 percent from different academic institution in one province in the Philippines which were selected through random sampling from the social media. This study only includes students from higher education and does not include learners from basic education. Only the profile on location was considered in the survey using Facebook through Google Form. The online survey was conducted from October 1 – 31, 2020.

The instrument used in the study was adapted from the study of Fortune et al. [31] but the questionnaire was modified to become suitable to answer the objective of the study. Ideas from other studies were also considered in the revision of the questionnaire [32]-[35]. It is divided into six (6) sub variables with a total of 15 statements. It was content validated by three (3) experts in the field of educational management, educational psychology and measurement and evaluation. The respondents were given three options: high (3), moderate (2) and low (1) to express the level of their challenges with the flexible learning environment. After which, it was also tested for reliability with the result of Cronbach's alpha value of 0.893 which signifies that the instrument has a good internal consistency.

The link was sent to college students of various institutions in the province. The students were informed regarding the purpose of the study. Informed consent was given to the students as the initial page of the online survey which also adhered in the Data Privacy Act of 2012 where no sensitive data and information were collected. It also followed the protocols on ethical consideration where the respondents have the right to withdraw their participation anytime from the study. They were not compelled to answer the questionnaire if they do not want to open the link sent to them. The moment they click "agree" on the informed consent page, they are already giving their consent to the researcher to be part of the study.

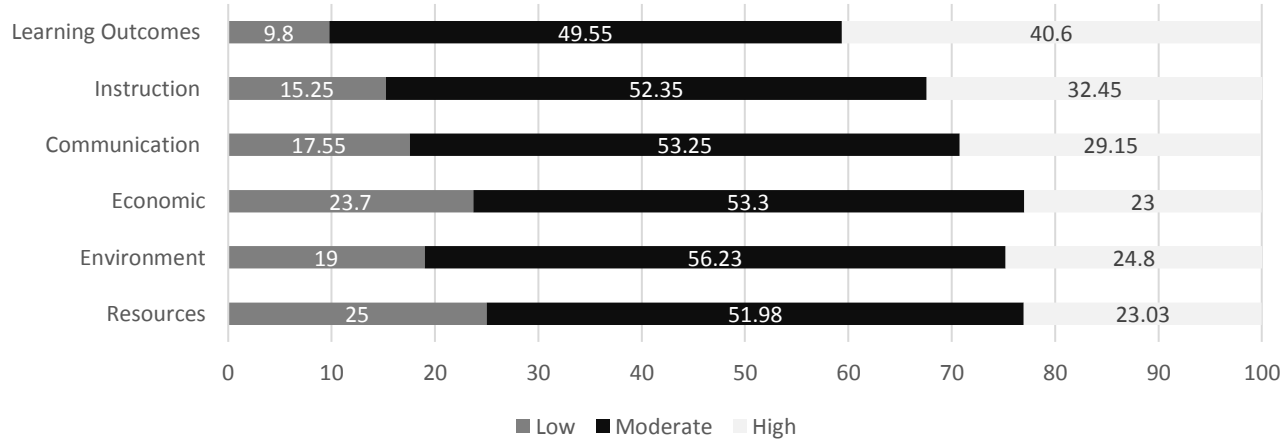

Figure 1. Summary of Percentage on Challenges Encountered by Students

Frequency count, percentage and Analysis of Variance were the statistical tools used to interpret the result of the gathered data from the questionnaire. Meanwhile, the set of data was tested its normality using Shapiro Wilk Test with computed p-value of 0.215 which is greater than 0.05 that signifies that the data set is assumed with normal distribution, therefore, parametric test was used in the study. The given scale was used to interpret the result of gathered data from the survey in terms of the level of challenges encountered of the respondents: 1.00-1.49: Low; 1.50-2.49: Moderate; 2.50-3.00: High.

Table 1. Differences on the Challenges Encountered on Flexible Learning Among Students Across Location

Challenges Resources	Urban		Rural		Suburban		Total		f-value	p-value
	M	SD	M	SD	M	SD	M	SD		
1. Inadequate educational devices	1.90	0.67	2.07	0.70	1.99	0.65	2.01	0.68	1.874	.155
2. Loss of Electricity	1.33	0.50	2.42	0.61	1.62	0.62	1.95	0.76	121.29**	.000
3. Difficulty in finding appropriate online resources	1.90	0.77	1.93	0.69	2.10	0.63	1.97	0.70	2.49	.084
4. Lack of people at home with adequate technical skills	1.93	0.43	2.07	0.72	1.93	0.58	2.00	0.63	2.36	.096
Composite Mean	1.76	0.29	2.12	0.34	1.91	0.32	1.98	0.36	39.78**	.000
Environment										
1. Less support from the family members	1.93	0.65	1.99	0.64	2.15	0.66	2.02	0.65	3.083*	.047
2. Parents/siblings have little technical skills in computer and internet	2.20	0.68	2.12	0.64	2.27	0.62	2.18	0.65	1.959	.142
3. The environment is not conducive for e-learning	2.02	0.69	1.96	0.65	1.98	0.67	1.98	0.66	.298	.743
Composite Mean	2.05	0.37	2.02	0.34	2.13	0.40	2.06	0.37	3.211*	.041
Economic										
1. Budget is not enough to pay electric and internet bills	1.98	0.69	2.08	0.68	2.09	0.70	2.06	0.69	.787	.456
2. Costs of Internet/mobile data	1.97	0.69	1.91	0.69	1.94	0.64	1.93	0.68	.232	.793
Composite Mean	1.97	0.47	1.99	0.50	2.02	0.48	1.99	0.49	.191	.827
Communication										
1. Limited communication with teachers	1.98	0.57	2.16	0.66	2.11	0.70	2.10	0.65	2.309	.101
2. No interaction among students	2.20	0.72	2.19	0.68	1.96	0.68	2.13	0.70	4.052*	.018
Composite Mean	2.09	0.40	2.17	0.42	2.04	0.44	2.12	0.42	3.748*	.024
Instruction										
1. Synchronous learning class is problematic due to poor internet connectivity	2.23	0.66	2.35	0.65	2.18	0.63	2.28	0.65	2.466	.086
2. Limited guidance of teachers on instruction from asynchronous learning	2.06	0.69	2.04	0.68	2.12	0.64	2.07	0.67	.494	.611
Composite Mean	2.15	0.47	2.20	0.44	2.15	0.46	2.17	0.45	.484	.617
Learning Outcomes										
1. Skill-based extensive courses cannot be taught successfully through online	2.40	0.56	2.28	0.67	2.20	0.70	2.29	0.65	2.031	.133
2. Some lessons were not thoroughly discussed to meet all essential learning outcomes	2.31	0.67	2.36	0.60	2.28	0.62	2.33	0.63	.557	.574
Composite Mean	2.35	0.38	2.32	0.41	2.24	0.45	2.31	0.42	1.878	.154

***Significant at p<0.01; * Significant at p<.05*

RESULTS

Figure 1 shows the summary of percentage on challenges encountered by the college students. More than half of the students moderately encountered challenges in instruction (52.35%), communication (53.25%), economic (53.3%), environment (56.23%) with the least percentage for resources (51.98%). Meanwhile, students have higher percentage of challenges in the achievement of learning outcomes (40.06%).

Table 1 reveals the test of differences on the Challenges Encountered on Flexible Learning Among Students Across Location. Loss of electricity (f=121.29; p<.01) is being encountered significantly higher among students from rural areas (M=2.42, SD = 0.61) while no significant difference exists on the challenge encountered by the students in terms of lack of educational devices (f=1.874, p=.155); and difficulty in finding appropriate online resources (f=2.49, p=.084) and lack of people at home with adequate technical skills (f=2.49, p=.084). When taken as a whole, students from rural area (M=2.12, SD=0.34) have significantly higher level of challenges encountered in terms of resources (f=39.78, p<.01) compared to students from urban (M=1.76, SD=0.29) and suburban (M=1.91, SD =0.32).

Students from suburban area (M=2.15, SD=0.66) have expressed significantly higher challenges in terms of less support from the family members (f=3.083, p=.047) while no significant difference exists in terms of Parents/siblings have little technical skills in computer and internet (f=1.959, p=.142) and the environment is not conducive for e-learning (f=.298, p=.743). However, when taken as a whole, students from suburban (M=2.13, SD=0.40) have significantly higher level of challenges encountered in terms of environment (f=3.211, p=.041).

No significant difference exists on the challenges encountered among students in terms of having not enough budget to pay electric and internet bills (f=.787, p=.456) and costs of Internet/mobile data (f=.232, p=.793). In general, the economic challenge of the students is being experienced across locations (f=.191, p=.827).

No significant difference exists in terms of limited communication with teachers (f=2.309, p=.101) while students from suburban areas (M=1.96, SD=.68) showed significantly lower challenge in terms of no interaction among students (f=4.052, p=.018). In general, students from rural area (M=2.17, SD=.42) expressed significantly higher level of challenges encountered in terms of communication (f=3.748, p=.024) compared to students from urban (M=2.09, SD=.40) and suburban (M=2.04, SD=.44) areas.

No significant difference exists on the challenges encountered by the students across location in terms of problem in synchronous learning class due to poor internet connectivity (f=2.466, p=.086), and limited guidance of teachers on instruction from asynchronous learning (f=.494, p=.611). In general, students encountered high challenges in instruction of flexible learning across locations (f=.484, p=.617).

There is no significant difference on the challenges encountered by the students across location in general in terms of the learning outcomes (f=1.878, p=.154). They have expressed high level of challenges encountered in terms of having skill-based extensive courses that cannot be taught successfully through online (f=2.031, p=.133) and some lessons were not thoroughly discussed to meet all essential learning outcomes (f=.557, p=.574).

DISCUSSION

Flexible learning as a learner-centered educational strategy provides choices from the main dimensions of study like the time and location of learning, resources for teaching and learning, instructional approaches, learning activities, supports for teachers and learners [4]. This study explored the challenges encountered by students in different locations, namely: urban, rural and suburban areas which could possibly influence on how they experience the flexible learning according to their location as being given emphasis on this investigation.

Long duration of loss of electricity is being experienced from rural areas especially during typhoon season or experiencing heavy rains from June to November. During this period in 2020, majority of the part of Luzon, Philippines was hit by several typhoons that delays classes due to loss of electricity and internet connection from different locations. The service provider of electrical power gives priority to supply electricity those urban and suburban areas where there are more businesses need to be supported unlike those people living in rural areas where mostly residential. In Myanmar, the power situation in rural area is very severe according to the study of Pode et al. [36]. However, energy consumption in the urban area is more prone to changes in weather conditions [37]. In the Philippine set up, not all places are internet enable, even supply of power in the rural area is lacking [38]. Close to 2.4 million households, the bulk of them in Mindanao, still have no electricity in 2018, according to reports cited by Sen. Gatchalian [39], but remains 2.3 million in 2019

according to National Electrification Administration [40].

Across all locations, they encountered inadequate educational devices in implementing flexible learning. Even though, there is a 75.66 million people who can access the internet through their mobile phones in the Philippines according to Sanchez [41] but there is still almost one-fourth of the populations in the country without this kind of application. Meanwhile, as of 2019, there were approximately 74 million smartphone users in the Philippines, and it has continued to rise since 2015. It is forecasted that by 2025, there would be around 90 million smartphone users in the country [42]. But this number and percentage of smartphone users can also be considered as the number of smart phones in the country but not actual users because there are some individuals who owned two or more cellular phones. There is 40 percent of households in the United Kingdom (UK) have two mobile phones, according to figures from Ofcom [43]. It was observed from study in Tanzania that the average number of phones possessed by individuals is 1.1 ± 0.26 (1 to 2 phones) and household families is 3.5 ± 2.23 or equivalent to 1 to 10 phones [44]. A study from Kenya showed the average number of mobile phones operated at the time of the study was two (2) phones per person [45]. No study had been found to show the average number of cellular phones usually the common Filipinos might have.

Along this line, problems on the number of devices to be used for educational purposes is now considered a problem during pandemic. Because vast majority of the students relied on laptops, computers and cell phones for their classroom instruction and submission of course requirements. Some households used their phone for doing online and offline business which cannot be used dedicatedly for classes of their children. Students belong to poor families in the Philippines have limited number of cellphones and if ever they have one, it cannot be used to access internet to view and download their course requirements. Having laptops or desktop computers is already a necessity for a household to have one for educational purposes but due to limited resources of some Filipino families, they cannot afford to have it which also gave them additional challenges during COVID-19 Pandemic on how their children can continue their studies. If ever they have available laptop or computer at home, the number of siblings who will be using these gadgets might not be enough to serve all children simultaneously especially if the members of the family have three (3) or more siblings. However, the Philippine government ensured that all students should be given utmost consideration in attending synchronous classes, submission of course requirements either through online or modules. But most private schools still adopted online classes through Learning Management System unlike public schools where modular approach of flexible learning is advised and highly encouraged.

Students from rural experienced significantly lack of people at home with adequate technical skills. People at home maybe good in using various applications in cellular phones but not to the extent they can also help them accomplish their course requirements. It cannot be considered that there are more people from urban areas who have technical skills in using computers and other software applications. Some people living in rural areas in the country have chosen to live in a very simple life without much complications like in urban areas. Based on some interviews with the students in the area, most of their fathers are farmers with full-time housewives. Meanwhile, students from suburban have limited support from their family members in realizing the objectives of flexible learning. Zaka [46] emphasized that the parental role was also important in ensuring that students had adequate access to computers and internet from home. They have some thoughts that living in urban areas is more advantageous than in the suburban or rural areas because of the limited access to some educational facilities and internet connection. They are asking the people at home on how to fix their internet connection, but they often failed to get some help due to busy schedule devoted for business and other home activities. Unlike students from urban areas where they can get assistance from people within their neighbors or nearby shops. Students from urban areas have access to computer shops but very limited in rural and suburban areas. Árnason [47] also noted that living in thriving cities can be a more ecological way for modern people to populate the earth than living in small distributed rural communities.

Students from rural areas received less communication from teachers because of their limited access to internet where mostly student guidance and other instructions are given during synchronous classes. Most students had access to only dial-up internet and because they were living in a rural area, it may not have been possible to provide students with high internet speed [46]. There are also online quizzes where some students could not be able to participate due to poor internet connection. Students are worried about their class performance on how they can take an equivalent activity as replacement to the quizzes that they have missed. There are many problems cited by both teachers

and students during online or synchronous classes, but they tried to understand the situation even it is difficult on the part of the teacher to provide the needs of the students based on the students' capacity to meet the course requirements either using online or modular approach.

Students mostly use mobile data to access their course requirements from their school email address or through social media accounts like Messenger. They spent much for the cellphone load to download the soft copy of the instructional materials. These are some of the common challenges encountered by students in flexible learning from higher education experience. If these problems continue to exist, the quality of knowledge and skills acquisition may suffer from deterioration and students could not be able to develop their full potential in preparing themselves for the future jobs.

CONCLUSION AND RECOMMENDATION

Almost half of the students have moderate level of challenges encountered in conducting flexible learning where they expressed higher problems on the achievement of learning outcomes and attendance to synchronous learning class with low internet connectivity and loss of electricity as major concerns from rural areas. Students from urban areas have the luxury of time to ask for technical assistance from people within the city when their internet problems can be easily fixed because of their proximity. Economic aspect on flexible learning is considered an issue among the students regardless of their location. Students from suburban areas feel that they were receiving less support from their family members. Students from rural areas have expressed significantly higher challenges in terms of limited communication with teachers while there are moderate challenges on the delivery of instruction and achievement of learning outcome regardless of location.

The findings of the study may be utilized by teachers and educational managers in planning the delivery of flexible learning to different geographic locations of the students because of various factors that might hinder their participation in online or offline classes. This characteristics of students in terms of geographic location may help the school administrators understand the situation of students in rural areas with very limited internet connection. Teacher may reach the students to communicate in various platforms like social media, short messaging system, and emails.

Having a Learning Management System (LMS) is beneficial in facilitating the teaching and learning process in an online environment, but this can only be useful for students with strong internet connection. Students cannot be deprived of equal access to education given their current situation in rural and slum areas where availability of electricity is not always stable. There are still many areas in the Philippines with no electricity.

Students should also communicate with their teachers during daytime or appropriately during their class schedule but not at nighttime or outside office hours. They have to understand and respect the time devoted only for specific purpose and not all the time of the day can be utilized answering the concerns of the students.

People from rural areas have to be given more attention in giving government support and other intervention measures from private institutions. There is no assurance until when this situation will continue to be the status quo of the country in terms of education. But the teaching and learning processes and educational services being provided by academic institutions are continuously adjusting to the needs of the students and other stakeholders during pandemic. There are challenges being encountered in the middle of implementation, but the people need to understand how everyone in the organization and government institutions are doing their part to address the immediate concerns. There are policies and guidelines formulated specific for online, blended, and flexible learning to sustain the delivery of instruction. Schools also prepared learning continuity plans to better serve their clients. But this should be assessed if the institutions are serving the needs of the students across all locations.

Future studies may consider investigating the average number of cellular phones being used per person to get a better estimate of the populations with cellular phones because some data from statistics considered the number of cellular phones used with the number of populations as the number of users. Status of flexible learning in basic education both for private and public schools may also be investigated using geographic location to explore how these learners and their families are surviving during pandemic. The views of the teachers on how they continuously fight against the battle of pandemic and how they sustain their commitment to education and maintain their health and safety against the corona virus may also be considered for future studies.

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