

Looking Through the Lens of Rural Science Teachers in the New Normal Setting

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Abstract

Teaching science in distance learning has severely challenged the educators in maintaining a quality learning experience during the pandemic. This also opened to new experiences for science teachers to facilitate learning in a new normal setting, especially in rural schools. This qualitative phenomenological study aimed to describe the lived experiences of rural science teachers during the new normal learning. Ethical standards on trustworthiness and rigor were followed. Five (5) participants were purposively chosen through criterion sampling with the following criteria: 1) should be a junior/senior high school rural teacher 30-55 years old. 2) Should be teaching science in the school year 2020-2021. 3) Should be willing to express and share their experiences. Data were collected from unstructured interviews. Narratives were transcribed word for word and reflectively analyzed using Braun and Clarke's (2006) thematic analysis. Analyzed data revealed four (4) dominant themes: (1) 4A's of New Normal: Accept, Arrange, Adjust, and Adapt. (2) Dare to Teach: Agents of Learning, Frontliners of Teaching. (3) Facing New Variants of Students. (4) A Dose of Hope: Educators' Response to Learning Emergency. The findings of the study contributed to a deeper understanding of the experiences of rural science teachers as they facilitate learning amidst the pandemic. Implications were derived based on the findings. It is challenging for science teachers to grasp students' attention in learning through a modality away from the instructors. Meaningful learning in science has been facilitated using the teachers' interventions through localized experiments, modified activities, and demystified lessons.

Keywords: *education, science teachers, rural schools, lived experience, new normal setting, descriptive-phenomenology*

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1. Introduction

The pandemic caused a huge impact on the basic education system, around 87% of the student population across the globe were affected by the school closures (UNESCO, 2020). Since the primary concern is the health and safety of the citizens, especially youths, schools were forced to close. All classes were cancelled, and school activities were suspended. According to Malipot (2020), the Department of Education (DepEd) Secretary in the Philippines declared that even though the country is facing the impacts of the COVID-19 virus, education must continue. There are approximately 27 million students in basic education that require unconquerable commitment in the middle of this pandemic.

There were no face-to-face classes in the Philippines until the country is safe from the virus, put forward to the DepEd to adopt the Basic Education Learning Continuity Plan (BE-LCP) under the DepEd Order No. 12 series of 2020. The BE-LCP is anchored with the primary principles such as protecting all learners, teachers, school heads, and other personnel from the threat of transmission of Covid-19 disease. It also ensures the alignment of the K-12 curriculum to the learning standards applicable in the country's current state (DepEd, 2020).

The DepEd provided learning modalities applicable during the pandemic, distance learning and blended learning is on top of the choices of the schools. Distance learning is described as the learning modality wherein teachers and learners are of different locations during the instruction. Under this modality are the modular-based learning, online-based learning, and television or radio-based instructions. On the other hand, blended learning refers to the learning modality wherein distance learning and face-to-face instruction is combined. Learning instructions were refined, aligning to the K-12 curriculum to the Most Essential Learning Competencies. This MELC answers the standards and competencies that the students should achieve amid the challenges in education brought by the Covid-19 (DepEd, 2020). However, certain subjects, such as science, require teachers' intervention for students' better comprehension.

Teaching science in new normal learning has severely challenged the teachers in maintaining a quality learning experience during the pandemic (Porter, 2020). Science teachers are expected to expose learners not just to laws and theories that build the pillars of science education; students should also be engaged with observations, experiments, and other first-hand experiences. However, the sudden shift of learning modality opened new experiences for science

educators to facilitate learning in a new normal setting, especially in rural schools. Since students' locations are far apart within these rural communities, teachers strive to reach their students during the new normal learning.

This study aims to have a deep understanding of the lived experiences of rural science teachers during the new normal learning setting of education. The study recognizes the struggles, challenges, and coping strategies of rural science teachers in response to the circumstances in their locality. It intends to determine insights from the experiences of rural science teachers from which themes will emerge as the findings of the study. The outcomes of this study could be used to address issues and concerns of science teachers in the rural context and can enhance teaching and learning processes in new normal learning.

2. Literature Review

2.1. Rural Schools under the New Normal Education

Teaching in rural schools is quite challenging as it comprises different students who have individual curriculum programs. In addition to that, the lack of learning resources, internet access and facilities (Figueroa, Lim & Lee, 2016). According to Malipot (2020), students in rural communities have little to no access at all to internet and electronic learning modalities. Thus this would lead to greater possibilities that rural schools will be academically left behind in the new normal of education. On the contrary, DepEd argued that the learning modes in rural schools would be done without using the internet and instead television and radio-based or modular learning instructions. However, the teacher's intervention and monitoring process still require technological applications. The shortfalls of rural schools require government response to still provide quality education to remote communities (Malipot, 2020).

Regardless of any distinction, the primary role of the teacher in school is to serve as the bridge between the curriculum and the students (Jadhav & Patankar, 2013). Thus, despite the closure of schools, teachers are responsible for providing quality education to all learners. However, the changes in the curriculum because of the emergence of the Covid-19 gave challenges to rural teachers, especially on those teachers instructing subjects whose nature includes content knowledge and practical skills.

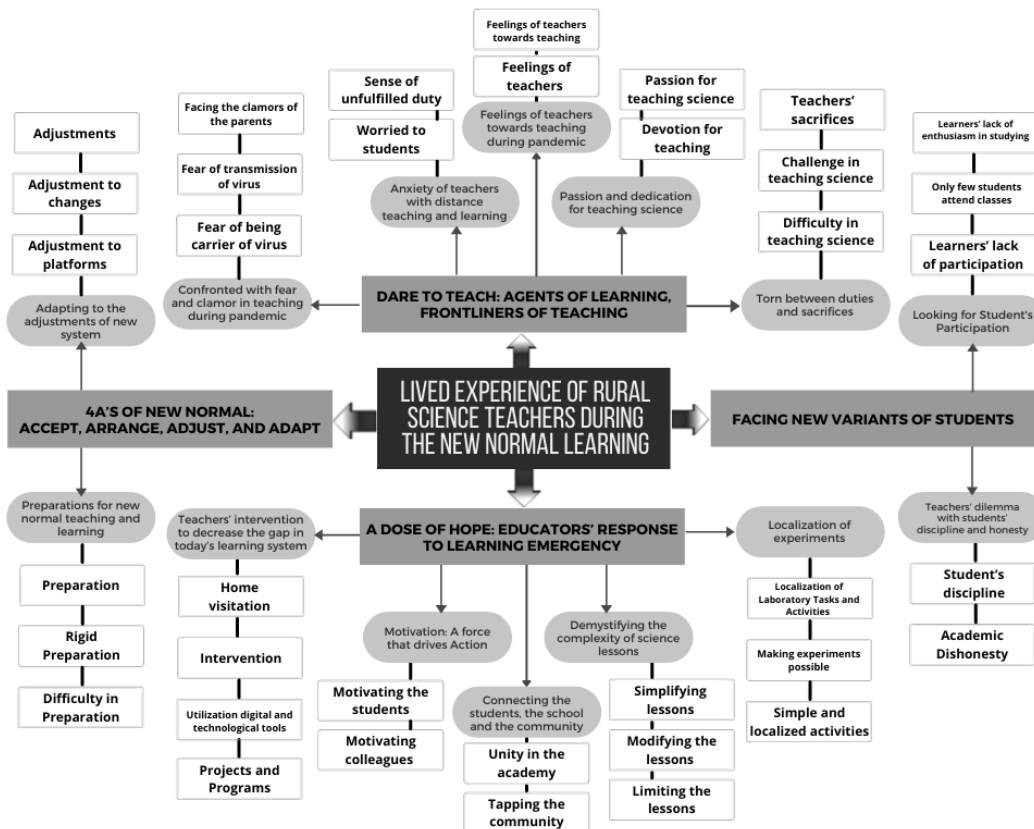
Science education encompasses understanding, applying and demonstrating scientific skills that would develop scientific literacy among the learners. The science framework for

Philippine basic education sees science as a subject that would enable students to "learn how to learn". This can be achieved by developing students' scientific inquiry, promoting core knowledge on science and enhancing students' practical scientific skills (SEI-DOST & UP NISMED, 2011). Teachers are expected to expose learners, not just to laws and theories that build the pillars of science education, and students should also be engaged with observations, testing, experiments and other first-hand experiences. Science educators are in charge of translating the understanding of knowledge on science to meaningful classroom experiences. They will help the learners be scientifically literate and make an informed judgment in addressing social, health and environmental issues using scientific knowledge and skills. Through the help of these dedicated rural teachers, even though profoundly challenged due to the sudden shift of education, and the threat of the coronavirus, quality education of the youths is sustained.

2.2. Conceptual Framework

Figure 1

Thematic Scheme of the Lived Experience of Rural Science Teachers during the New Normal Setting



According to Grant and Osanloo (2014), in a qualitative research design, the researcher may begin the study with a less structured theoretical framework to avoid preconceptions to intervene in the findings of the study. In addition to that, one primary principle of conducting qualitative research is doing it inductively. Thus, the researcher should avoid theoretical framework, presumptions, and knowledge prior to the study to limit the biases on the data analysis (Khankeh, 2014). Therefore, theoretical frameworks may emerge based on the analyzed data. Subsequent with the deep reflection and analysis on the essence of teachers' experiences, the study made it possible for the researcher to represent the lived experience of rural science teachers in a schema as shown in the figure 1.

There are four (4) major themes that emerged from the narratives of the participants. The first theme, entitled 4A's of New Normal: Accept, Arrange, Adjust, and Adapt, represents the four-word phases of how teachers embrace the new system of teaching and learning processes amidst the pandemic. This theme comes from two subthemes that were formulated using codes from the verbatim of the participants. Based from the narratives of the teachers' codes such as "prepare" and "adjust" were commonly used in describing their planning phase for distance learning during the pandemic. Accepting the situation of schools put into their minds that even faced with a plethora of changes and challenges brought by the implementation of new normal learning, they should continue teaching the youth of the society. That mindset drives into action in preparing and arranging the needed plans for the school year. As they actively apply their strategies with the setting of education, they eventually adjust and continuously adapt to the reforms on learning.

The second theme, Dare to Teach: Agents of Learning, Front liners of Teaching, reveals that parallel to the job of health workers, science teachers also put their lives in the front line as this theme is composed of narratives that discuss the apprehensions and sacrifices of the teachers. The theme came from five subthemes that emerged from similar experiences among the participants of the study. They all highlighted their hardships in teaching amidst the pandemic and their worries in teaching science in the new normal. These teachers were holistically challenged as their personal and work-related concerns were uncovered to be at stake, thus indicating their love and passion for teaching science behind the siege of new normal education.

The third theme, which is coined as Facing New Variants of Students, represents teachers' experiences in connection to the identified new version of students learning away from

their instructors. They shared how difficult to impose discipline and management of students beyond the screens and miles away from their teachers. This shows how teachers deal with the character of learners towards distance learning. The theme was from the combined thoughts of teachers' dilemma on the discipline, honesty towards outputs, and students' attention during this year's classes.

Then lastly, the fourth theme signifies the lived experience of science teachers as they showed their role as the cure for the crisis in education brought by Covid-19. It came from five subthemes that represent that teachers' intervention with the underlying problems posed by today's educational setup. Their story on how they give this theme entitled A Dose of Hope: Educators' Response to Learning Emergency composes the projects and interventions created and conducted by the science teachers to give light to the deficiencies post by modifying the learning curriculum. Indeed, teachers bridge the gap between the school and students to decrease learning gaps amidst the pandemic.

3. Methodology

Research Design

This study used a qualitative phenomenological research approach to explain rural science teachers' lived experiences during the new normal setting of education. According to Creswell (2014), the qualitative research method is used to understand and explore the significance of rendering the complexity of a human or social situation. In addition to that, it is essential to consider that the lived experiences of the person can explain a specific phenomenon thus, a phenomenological research method aims to describe features of any lived experience of a group of individuals who are the primary source of information, situation, or event common to all (Creswell, 2013).

A descriptive phenomenological approach supports the design of the study as it is most helpful in finding out meanings of universal structures of a phenomenon. From the ideas of Edmund Husserl cited by Hall et al. (2016), descriptive phenomenology can give accounts from the participants to provide an essence of the lived experiences. Since new normal education is a recent reform in the country, there are still few researches about the experiences of rural teachers during the Covid-19 pandemic to fill in the gap; therefore, appropriate to utilize a descriptive phenomenological approach.

Population and Sampling

The teachers as the participants of this study were chosen through purposive and snowball sampling. In qualitative research, purposeful sampling is commonly used to identify and select participants that would willingly represent cases of a particular phenomenon (Palinkas et al., 2015). Due to the current situation, the researcher also applied snowball sampling as prior subjects refer to other participants that answered the difficulty of finding samples for the study (Naderifar et al., 2017). In line with the sampling technique, co-researchers were selected using the following inclusion criteria: should be a junior/senior high school rural teacher 30-55 years old; should be teaching science in the school year 2020-2021; and should be willing to express and share their experiences. After careful selection of the co-researchers based on the inclusion criteria set by the researcher, initially, five (5) rural science teachers in selected schools in Quezon, Province were chosen.

Data Gathering Procedure

Informed consent was provided by the researcher that provides the participants with sufficiently detailed information on the study to make an informed, voluntary and rational decision to participate. It was sent to the qualified participants, then was signed, and the day and time of interviews were scheduled based on the participant's availability. Interviews were taken about 20 to 45 minutes to ensure that the data gathered were sufficient. Phone and online interviews were conducted through Zoom, Google Meet, and Video/Audio call on Messenger. The researcher used the unstructured interview format with an opening question of "What are your experiences as a rural science teacher during the new normal setting of education?" An unstructured interview was utilized to ensure that the co-researchers led the conversation and not by the researcher. As Mitchell (2015) noted, this type of interview provides an in-depth personal experience from the participants and elicits greater meaning from their answers. Teachers were encouraged to talk freely and to tell stories using their own words. Follow-up questions were asked to clarify thoughts, feelings, and meanings of what was expressed and gain a deeper understanding of the phenomenon. After the interview, the audio recordings were immediately saved to a laptop before transcription. Significant words, phrases, and sentences or paragraphs were extracted from the interview from the raw transcriptions.

Ethical Consideration

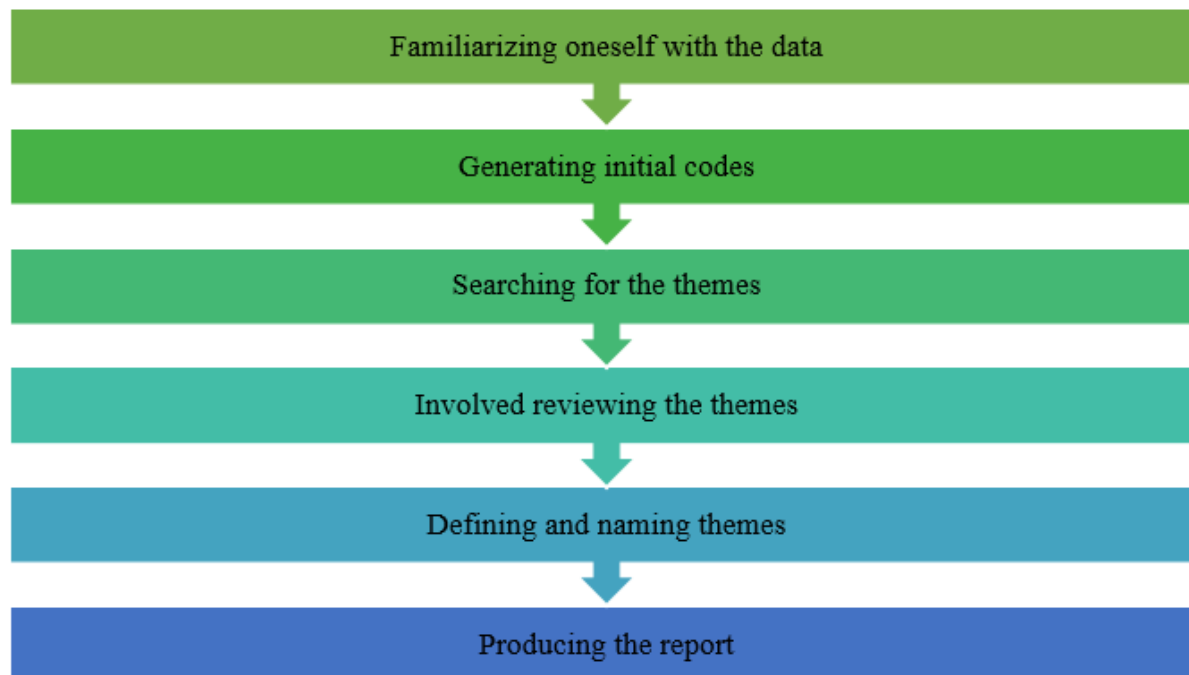
Ethical consideration is significant in conducting research so that the researcher attains the promotion of knowledge and truth, which is the primary goal of research. Therefore, ethical clearance was requested from the researcher's adviser to review all the questions that the researcher asked from the participants. All the participants were of their own free will, and that they were fully informed regarding the procedures of the research project. The researcher ensured the confidentiality of the participants as well as the data given by them. The participants chose and were given a pseudonym by the researchers to guarantee their privacy and anonymity. Additionally, any communication concerning the research was done with honesty and transparency, avoidance of misleading information, and the representation of primary data findings in a biased way.

Trustworthiness and Rigor

In evaluating qualitative studies, trustworthiness is a criterion to ensure that the method is truthful and consistent. To avoid the manipulation of the information and accuracy of the findings, the researcher applied bracketing of insights, assumptions, and interests, which involves subjective endeavors that potentially affect the project (Tufford & Newman, 2012). The process of bracketing was applied throughout the entire procedure of the study. The study established dependability by using an inquiry assessment. The consistency of the step-by-step procedure was reviewed by having external reviewers that will study the gathered data. The study ensured that the interviews and transcriptions of data were encoded and recorded available in the paper's appendices. The participants confirm the essential themes based on the data analysis. This process served as recognizing the universal phenomenon as stated by De Chesnay (2014); acknowledging the description of a phenomenon by the individuals who share the same experiences could successfully achieve phenomenological study.

Data Analysis

Sundler et al. (2019) provide procedures that constitute the actions to undertake in rigorous exploration of the subject participants' lived experience using thematic analysis in descriptive phenomenology defined by Braun and Clarke (2006). The study utilized the methods of the thematic analysis of data collected.

Figure 2*Methods of Thematic Analysis*

Source: Braun and Clarke (2006)

According to Braun and Clarke (2006), the thematic analysis identifies and analyzes patterns within the data collected widely used in a qualitative research design. This procedure can give the researcher the ability to describe complex information in a rich and detailed manner. In addition to that, an inductive approach to thematic analysis is used to help the researcher determine the themes from the data gathered.

4. Findings and Discussion

Themes

Subsequent to the reflection of the interview narratives, four major themes emerged from the participants' verbatim: (1) 4A's of New Normal: Accept, Arrange, Adjust, and Adapt, (2) Dare to Teach: Agents of Learning, Front liners of Teaching, (3) Facing New Variants of Students (4) A Dose of Hope: Educators' Response to Learning Emergency. The themes were constructed from the narratives of the participants and were validated and counter-validated by the participants and with the adviser.

Theme 1: 4A's of New Normal: Accept, Arrange, Adjust, and Adapt

After a precise analysis and reflection of the narratives, *4A's of New Normal: Accept, Arrange, Adjust, and Adapt* was the first theme that comes out. Two sub-concepts were identified under this theme: (1) preparations for new normal teaching and learning and (2) adapting to the adjustments of the new system. This theme highlights how the teachers accepted the challenge of implementing the Basic Education Learning Continuity Plan. They shared their experiences from their preparations for the school year amid the pandemic, arrangements of the working force, planning of teaching processes and how these educators adjust and continuously adapt to the sudden changes in the new normal education system. *Leoncio* shared his experience on how they prepare for the new normal learning.

“So, the survey happened before school year has begun which during May we had that what we call “Balik Eskwela” that we were there [school] having a meeting, we were discussing and we also had, kindly take note as well that the teacher conduct the so-called learning action cell where each department conversed regarding that [learning continuity plan] and also as a whole, there was also a general what we call LDM, or Learning Delivery Modalities where all the teachers had a session within each district about what preparations and what they should do beyond the pandemic.”

Josette also shared how their school arranged for the implementation of a learning continuity plan:

“So, during the peak of vacation in April, the school started to make a plan because it is also a directive of DepEd that time, the so-called Learning Continuity Plan, so one of the suggestions of [our] the principal was synchronous and asynchronous so during those vacation time we undergone a rigid training about the uses of gadgets and then creating [contents on] our main platform.”

After all the preparations and arrangements made by the teachers, they discussed how they adapt to the adjustments brought by the new system. Ma'am *Josette* stated that:

“I'm that fast [on coping with the changes], I easily adjusted it is because we were trained how to used [the new platform], how to create exam before the school year began, because we had few weeks that each day

have different topics, like at first how to launch meeting, what button should be clicked, it [training] was quite detailed, then next one was how to present word file from the PowerPoint on the zoom...so we were taught about those [during the training]... that's why during the start of classes, we were quite not afraid or felt intimidated at all... but I was intimidated at first”

Ma'am *Fe* also accepted that they have to adjust to the changes in education brought by the pandemic.

“Yes, it is necessary for us [teachers] to adjust, we need to adjust on the capacity of today's children and with the situation as well.”

Theme 2: Dare to Teach: Agents of Learning, Frontliners of Teaching

The second theme, entitled *Dare to Teach: Agents of Learning, Front liners of Teaching*, emerged in the process of analysis. Five sub-concepts were identified under this theme: (1) confronted with fear and clamor in teaching during the pandemic, (2) torn between duties and sacrifices, (3) feelings of teachers towards teaching during pandemic, (4) anxiety of teachers with distance teaching and learning, (5) passion and dedication for teaching science. This theme talks about the challenges faced by the teachers in new normal learning. These educators dared to continue teaching behind the threats of the virus and confronted by the clamor of the parents towards distance learning. These teachers caught themselves in the middle of their priorities on their personal lives and the call of their duties as a teacher. They also shared their insights and feelings towards their role on the front line and shared how their passion and dedication to teaching acts upon them to face all the hurdles of being an agent of learning. *Leoncio* shared his concern regarding with teaching during their community was on a high-risk Covid-19 area:

“Regarding the health risk, since our modality is through module [modular modality], how can we face the children? Such... How can we face the parents since there is a fast transmission of the virus? Isn't it? Especially here in Pagbilao, Pagbilao belonged to the top four areas with a lot of Covid cases that time; yes, you're right, in Pagbilao. So, the challenge there is on how we would face [the people].”

Clara added that:

“Their [students’] parents are usually undergrad of elementary such as grade 2, grade 1 parents... it is difficult because there is no one that could teach the children. However, another issue is that it is too strict in Kabulihan; they were strict to the rules up to the extent that they prohibit the teachers to enter there because they were afraid of Covid, that’s why... during the first days [of school], it was difficult [for us] that even you want to go to the kids issues may arise, that’s why we just sneak-out [there] Hehehe. Only those who will allow us”

Due to the dread of transmission of the virus, Ma’am *Clara* also shared her sacrifices to prevent the diffusion of Covid-19:

“...before we were staying at a boarding house. However, since it was strict [in the area] we transferred to the school; thus we were sleeping at school, we stayed there, we were there confined having our own food... which could last for few days for staying there.”

Aside from the fear of being a carrier or being infected by the virus, they also faced complaints from the students’ guardians. *Leoncio* narrated his experience as he encountered this problem:

“...there were parents who... who were bucking there... there was a parent who bucked [to the teachers]. I felt pity towards my co-teacher... my co-teachers who were all kind, I encountered it, and I get angry ... I was angry thus I preceded the parents, “Aren’t you were the one who gave that time? You were the ones who gave that time, then what are you complaining about?” I told that to the parents. Yes, “We have an agreement, you signed into this, and then what else do you want to happen? Do you want it to change again?” See, he could not [talk], this is because I was in the frontline in the distribution of modules.”

Aside from their worries about the virus, they faced more obstacles in the teaching processes especially with facilitating science experiments. As *Clara* shared her difficulties:

“As a science teacher, it is tough to teach in a situation where there is no face-to-face interaction among the learners, because in doing experiments for example the experiment written on the module, I already translated the

instruction into Tagalog, and told them to send [to me] pictures of their outputs, but then they did not send picture.”

Luz shared:

“In case of... we were in public [school] there were a lot of students who have no... no [internet] access. Thus for those [who have no internet connection] what I suggest was they could write their observations and then draw and color [the illustration of the written experiment] however, of course, I’m uncertain of whether they really accomplish it or not, hence at least they comply just like that... that is why the system right now is too hard, especially in our science subject, its fine for the other [subjects]. We are not like just like that [easy as other subjects in terms of activities]”

Luz also told her thoughts about teaching science:

"So for me, teaching [in this system] is not enough, because of... say, for example, we're [teaching] science eh. Right? Hahaha (laughing). Besides, you can just create a PowerPoint or videos of something like this, on chem [chemistry] second quarter is chemistry; there is mole concept [lesson] then, even chemical bonding, they can't grasp it immediately and if they get that, that's very basic or own research. It's as if, for me, it's not enough, as if for me it lacks [on content and knowledge being taught] but then, I cannot do anything about it."

Josette also stated that:

“...the rest, if I would rate myself [in terms of teaching], it seems, it seems I failed in terms of computation part [lessons in science with computations]. I modify it and limit it to my module, which I did not have... I was not able to give the details, especially on the topic ray diagram that is why I felt guilty that I have not able to teach [those parts].”

Behind these hurdles in teaching science during the pandemic, these teachers showed their passion and love for their job. As *Fe* said that:

“Of course, it is different [learning system] challenging but manageable. Yes, our love for teaching science is still there, that even [teaching] through chat, through text, through call, as long as you could still share

what you needed to teach to the students, guiding them, especially those who were struggling in the new normal, like that.”

Theme 3: Facing New Variants of Students

Another theme comes to the fore from the experiences shared by the teachers; this theme was entitled *Facing New Variants of Students*. This theme was divided into two subtopics which are (1) teachers’ dilemma with students’ discipline and honesty (2) disconnected students. This theme contains how teachers describe their distant students. The emergence of learning deficiencies among the students challenged the teachers as they strive to keep students engaged in learning and their value of academic integrity. During distance learning, these educators encounter problems with their students. *Josette* shared her experience:

"That’s one, when checking [the attendance], no one answered, and yet they are active there online. While I'm discussing we're holding class record or list of names, [I would ask] "okay you can read this?" no one will respond, it will just consume the time, then others will instantly chat "choppy choppy po" just like that, it's like "fine, okay choppy, choppy" then you will see them, active in TikTok hahaha (laughing) that's it"

Bearing the same issue *Luz* added:

“During the retrieval [of modules] because the modules provided by the DepEd have the key to correction, that’s why you have to give additional tasks to the students. But they’ll be incompletely returning [it to you] only some of those given to them will be completely answered.”

Aside from the lack of interest shown by the students, *Leoncio* also experienced academic dishonesty among students:

“Okay, so of course one of the problems since... since it is a modular instruction, one of the greatest problems that we encountered is to... the learner’s value of honesty. The learner’s value of honesty. You know... After all, some students were creating their group chat to share their modules with their answers.”

Theme 4: A Dose of Hope: Educators' Response to Learning Emergency

Through an in-depth analysis of the data collected, the theme *A Dose of Hope: Educators' Response to Learning Emergency*, unfolded from the five sub-themes under it, such as (1) Teachers' intervention to decrease the gap in today's learning system, (2) Localization of experiments, (3) Demystifying the complexity of science lessons, (4) Connecting the school, the community and the society and (5) Motivator that drives learning. This theme highlights the teachers' response to all the problems brought by the new normal setup of education. Through teachers' different interventions, they make learning possible amid the health crisis. They bridge the school and the students by simplifying the lessons, creating localized activities, inspiring students by motivating them, and connecting the school, the community, and society hand-in-hand to bring hope in learning during the pandemic. These educators showed their dedication to teaching through their various interventions that answered those problems brought by the pandemic. *Leoncio* shared his experience in conducting projects for distance learning:

"I go... I even climb the mountain of... and under the heat of... of... Atimonan, yes you're right, we go there since we have a vehicle. What we are doing since I am in charge there, we have the lists of names of the students in a barangay or a sitio then they are the ones we will visit, we conduct mobile learning that we called SMILE, that's project SMILE-Student Mobilization Intervention for Learning and Enhancement."

These teachers also maximize the use of technological advances in facilitating distance learning. *Josette* shared her experience:

"I found the same activity on the internet, a free online resource its Phet Colorado which that software was the one who manipulates, for example, a spring, they are moving the spring then I'll ask "Okay, for example, that's how to play the spring," or I showed them in synchronous [class] then they could able to see... They would understand [the topic], and this was one of the challenges for me, and some was partially solved already."

In addition to that, these teachers made science experiments still possible even with a lack of essential laboratory equipment. *Fe* talked about the high school experiments during new normal learning:

"Yes, it's still possible, they have activities and experiments, but then it will be done at their homes, but then, they have for example before I have

a topic in grade 8 about the earthquake, so they used stones, water, for them to see what wave looks like if they will use big pale with water, stone or ruler, however, those activities like that came from the region, it became better since activities were simplified by them, like all the possible materials that they could use [in the experiments] are available at their home thus localization of activities are done"

Leoncio also stated that:

“So when it comes to those laboratory [activities] and experiments, I told them we are going to use the localized, anything available at home, hence we, as the teachers what are we doing since there are worksheets, I am also thinking of laboratory activities where materials are available with them”

These educators also demystify lessons to help students unravel the complexity of the subject. Teacher *Fe* shared how she did this technique:

"Yes because it is necessary to understand children that they really can't... they cannot.. or most of them are not used to independent learning...they will experience difficulties [in learning] especially science since of course, the medium of the instruction is in English, even the construction of sentences is difficult on them, so that's why our job is to simplify the explanation."

To catch the learners' interests, these teachers boost their morale by motivating the students. *Leoncio* shares his role as motivator:

“Yes, in times like that, you need to motivate them. I’m actually good at dealing with the students, not to brag about it, even the lazy ones and those struggling learners there can do [activities]. They may be pushing themselves, yes also when it comes to the delivery of lessons since [there are some] children who cannot cope up [with the lessons], we create; actually interventions for that.”

Reflective Resonance

Theme 1: 4A’s of New Normal: Accept, Arrange, Adjust, and Adapt. To further strengthen the themes, reflective resonance was done that presents available works of literature

parallel to the generated theme. What works typically in face-to-face classes is not necessarily applicable in distance learning. This requires a transformation of most aspects of teaching and learning processes. However, the sudden shift of the educational system was too short for all, especially for the teachers who facilitate learning. Teachers must accept the situation in order for them to build the mindset of continuing education amidst the pandemic. After having that mindset, preparation is essential to equip teachers with the necessary knowledge and skills needed in distance learning and provide them with concrete methodology in delivering the curriculum contents in new normal education (De Villa & Manalo, 2020).

A qualitative study by Arrieta et al. (2020) analyzed that upon the DepEd's decision of learning continuity, science teachers begin with an urgent personal school preparation for the school year 2020-2021 while waiting for direct instructions of DepEd. It has been mentioned in the study that the primary focus of teachers' preparations is on professional development and on improving the technological fluency used in teaching methods and learning management systems. This has been evident with the results of the current study where participants mentioned that they initially facilitated learning using their techniques and materials while waiting for the directives of the higher educational sectors. They attended various meetings for preparations and training to be familiar with the platforms and modalities used in the new normal setting.

According to Tanhueco-Tumapon (2020), the global crisis posed an immediate adaptation of teachers to the new normal learning. Since a circumstance like the pandemic is unpredictable, education must never put into halt, teachers showed flexibility and fortitude in dealing with the abrupt changes in the system of teaching and learning processes. Though no one could adjust easily, as stated by the participants, they gradually get used to the changes in their timeline, routine, and teaching strategies, thus progressively adjusting to the setting and providing rich learning to the students during the pandemic.

Theme 2: Dare to Teach: Agents of Learning, Frontliners of Teaching. In terms of curriculum content, because of the impact of Covid-19 on learning processes, there is a problem on whether the lessons of the subject would be integrated or reduced. In this case, Romano et al. (2012) as cited by Cahapay (2020), the solution is to decrease the number of class hours. However, the duration of discussions should still maximize the lessons' objectives and address the expected learning goal. Through this, learning outcomes could be assimilated into the curriculum; thus, teachers could derive an approach in teaching instructions. Based on the

narratives of the science teachers, they applied modification and simplification of the lessons and activities in science to make the most of the timeframe of teaching the subject given in the school year. Their instructions were anchored as well with the MELCs that is viewed as the necessary scope to cover the subject's objectives in each year level in basic education.

Another challenge that a science teacher encounters during the new normal learning is how distant teacher performs laboratory tasks since it requires technical assistance and supervision from the facilitator (Arietta et al., 2020). This has been crucial to the teachers, especially in this subject that entails hands-on engagement among the learners to meet the objectives. Nevertheless, rural science teachers still face these challenges in the new normal learning. As stated by Lansangan and Gonzalez (2020), public school science teachers continue to empower learners even struggling in the new normal learning using their dedication and perseverance in teaching science.

Themes 3: Facing New Variants of Students. According to the study of Arietta et al. (2020) on understanding the experiences of science teachers in new normal learning, since the modality of new normal learning increases the chance of students to attempt cheating and commit plagiarism since teachers are distant from the learners. This is one of the issues raised regarding distance learning. The participants pointed out the same concern regarding the students' value of academic honesty and discipline in learning. Michael and Williams (2013) gave ways to maintain academic honesty in schools. According to them, students must be supplied with the learning resources to drive students in learning and avoid cheating. Another one was to increase students' awareness of the potential outcome of their choices in terms of any forms of penalty.

The DepEd admits an already expected issues on academic dishonesty, which is inevitable in the system of blended learning. In response to this problem, Adonis (2020) cites the DepEd Undersecretary for curriculum and instruction, Mr. Diosdado San Antonio, who asked the help of the guardians or any significant adults that in this home-based learning that they play a huge role in reinforcing the value of academic honesty within their child. Adonis (2020) also pointed out that an experienced teacher is knowledgeable enough to identify whether the outputs of the learner were indeed done by them or accomplished by someone else.

As indicated by Dhawan (2020), given that there are protocols imposed by DepEd regarding the students' participation, such as not obliging them to put their cameras on during

virtual meetings, not forcing them to submit modules early on time, and not requiring them to master and answer all the prescribed activities accurately because of the limitations brought by the learning situation. These became a huge concern among the science teachers, unlike in face-to-face classes where classroom management could be easily addressed, teachers find it challenging to monitor the students in distance modality.

Theme 4: A Dose of Hope: Educators' Response to Learning Emergency. According to De Vera (2020), one of the integral parts of today's educational situation is to think of what is effective in teaching and how to facilitate it. Teachers must develop ideas that would promote meaningful learning even students are distant from the instructors and build activities that would still keep students engaged with the learning process. Teachers displayed their creativity and innovation in creating solutions that would answer the demands of the new normal learning system. The teachers organize everything and give light to the possibility of bridging the school to the students' locations despite the threats imposed by the COVID-19.

Some studies associate integrating technologies in facilitating science subjects to higher academic achievement among the learners. This helps teachers drive interest and promote productivity to the students compared to the traditional method of teaching (Nawzad et al., 2018). The science teachers embrace the use of the advances of information and communications technology through the utilization of new applications, media, and learning platforms that pave the way to meaningful learning despite the challenges of teaching in new normal learning.

The unforeseen learning emergency that shifted all systems from traditional to new normal setting become a gateway for teachers to go out of the box in finding solutions to the challenges posed by the pandemic (Arrieta et al., 2020). Since science experiments are difficult to conduct in distance learning, especially within the rural areas, laboratory experiments were still conducted through localization of the materials needed for the tasks, modifications of lessons that still corresponds to content standards, and discovery of online platforms that could serve as supplementary to instructional materials proved that learning must continue with these committed science teachers in educating students beyond the pandemic.

5. Conclusion

The findings of the study imply that rural science teachers have to equip themselves with the knowledge and skills needed in teaching in the new normal learning. Since teaching science involves hands-on and mind-on activities, which help in greater learning achievement in the subject, teachers prepared methods and strategies that will continue meaningful learning on science even in distance learning. They attended webinars, online training on using educational technologies and science software applications that would provide them with knowledge and competencies to efficiently teach in new normal learning. All these seminars and plenty of meetings prepared them to face the challenges of distance teaching. Science teachers also emphasized that since the time duration of science subjects was lessened due to the limited and possible hours given to teach in distance learning, it affects the depth of the content that the teacher could cover. This was one of the major dilemmas of science teachers as they are teaching a complex subject; it cannot be taught in a single session, especially in distance learning. It is challenging for rural science teachers to grasp students' attention in learning through a modality away from the instructors. Factor such as overloading of science concepts and students cannot easily absorb scientific ideas makes science subjects less appreciated. Thus, it contributes to the fact that learners tend to give less attention to the subject. In addition to that, the circumstance made it difficult for teachers to keep learners engage with the activities and tasks to accomplish the subject.

The findings imply that the reduced amount of face-to-face guidance that the teachers can provide reduces the drive of students to learn science lessons. The science teachers' intervention to the problem they encountered in facilitating scientific experiments is conducting localized experiments. Localization pertains to the adoption of the curriculum following the local setting of the school; thus, the process of teaching and learning depends on the condition of the environment. It can meet the demands of learning science in a new normal setting by customizing the materials needed in teaching the subject. Using improvised materials in dealing with the experiments prescribed by the DepEd answered the limitations on laboratory tools and equipment amid the pandemic. This paves the way for teachers to become more creative and ingenious in optimizing the availability of the resources found in local communities integrated into learning. Given all these insights and implications, these findings contributed to a deeper understanding of the experiences of rural science teachers as they facilitate learning amidst the pandemic.

References

- Adonis, M. (2020). Distance cheating rears ugly head in remote learning. *Philippine Daily Inquirer.Net*. <https://newsinfo.inquirer.net/1337768/distance-cheating-rears-ugly-head-in-remote-learning>
- Arrieta, G. S., Dancel, J. C., & Agbisit, M. J. P. (2020). *Jurnal Pendidikan MIPA Teaching Science in The New Normal: Understanding The Experiences*. December, 146–162. <https://doi.org/10.23960/jpmipa/v21i2.pp146-162>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101
- Cahapay, M. B. (2020). Rethinking Education in the New Normal Post-COVID-19 Era: A Curriculum Studies Perspective. *Aquademia*, 4(2), ep20018. <https://doi.org/10.29333/aquademia/8315>
- Creswell, J.W. (2013). *Qualitative Inquiry & Research Design: Choosing Among the Five Approaches*. Thousand Oaks, CA: SAGE Publications, Inc. (pp. 77-83)
- Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative and Mixed Methods Approaches* (4th ed.). London: Sage Publications Ltd.
- De Chesnay, M. (2014). *Nursing research using participatory action research: Qualitative designs and methods in nursing*. New York, NY: Springer
- De Vera, J. L. (2020). Challenges and Teacher Resilience: The New Normal Classroom Instruction Using Social Media in the Philippine Context. *Available at SSRN 3760369*, October.
- De Villa, J. A., & Manalo, F. K. B. (2020). Secondary teachers' preparation, challenges, and coping mechanism in the pre-implementation of distance learning in the new normal. *IOER International Multidisciplinary Research Journal*, 2(3), 144-154.
- Department of Education. (2020). Adoption of the Basic Education Learning Continuity Plan for School Year 2020-2021 in the Light of the COVID-19 Public Health Emergency. Retrieved from: <https://www.deped.gov.ph/2020/06/19/june-19-2020-do-012-2020-adoption-of-the-basic-education-learning-continuity-plan-for-school-year-2020-2021-in-the-light-of-the-covid-19-public-health-emergency/>
- Department of Science and Technology, & University of the Philippines - National Institute for Science and Mathematics Education Development. (2011). *Science Framework for Philippine Basic Education*. <http://www.sei.dost.gov.ph>
- Dhawan, S. (2020). Online Learning: A Panacea in the Time of COVID-19 Crisis. *Journal of Educational Technology Systems*, 49(1), 5–22. <https://doi.org/10.1177/0047239520934018>

- Figueroa, L. L., Lim, S., & Lee, J. (2016). Annals of GIS Investigating the relationship between school facilities and academic achievements through geographically weighted regression. *Annals of GIS*, 00(00), 1–13. <https://doi.org/10.1080/19475683.2016.1231717>
- Grant, C., & Osanloo, A. (2014). Understanding, Selecting, and Integrating a Theoretical Framework in Dissertation Research: Creating the Blueprint for Your “House.” *Administrative Issues Journal Education Practice and Research*, 4(2), 12–26. <https://doi.org/10.5929/2014.4.2.9>
- Hall, E., Chai, W., & Albrecht, J. A. (2016). A Qualitative Phenomenological Exploration of Teachers’ Experience With Nutrition Education. *American Journal of Health Education*, 47(3), 136–148. <https://doi.org/10.1080/19325037.2016.1157532>
- Jaghav, M. S., & Patankar, P. S. (2013). *Role Of Teachers’ In Curriculum Development For Teacher Role Of Teachers’ In Curriculum Development For Teacher Education* Presented By Ms . Megha Sahebrao Jadhav 1 Golden Jubilee DRF, Department Of Education, Shivaji University, Kolhapur Department. *October*, 1–9.
- Khankeh, H. R. (2014). Is it possible to perform qualitative analysis without having a "Theoretical framework"? Retrieved from: https://www.researchgate.net/post/Is_it_possible_to_perform_qualitative_analysis_without_having_a_Theoretical_framework/52c3fd75d039b1ee168b469a/citation/download.
- Lansangan, R., & Gonzales, K. (2020). Science Teachers’ Voices in the New Normal Teaching: a Phenomenological Study. *IOER International Multidisciplinary Research Journal*, 2(3), 124–132. <https://doi.org/10.5281/zenodo.4062840>
- Malipot, M.H. (2020). ‘Education must continue’ — DepEd Sec. Briones. *Manila Bulletin*. Retrieved from: <https://mb.com.ph/2020/05/28/education-must-continue-deped-sec-briones/>
- Malipot, M.H. (2020). Learners in rural areas ‘left behind’ during remote enrollment — ACT. *Manila Bulletin*. Retrieved from: <https://mb.com.ph/2020/06/08/learners-in-rural-areas-left-behind-during-remote-enrollment-act/>
- Michael, T., & Williams, M. (2013). Student Equity: Discouraging Cheating in Online Courses. *Administrative Issues Journal Education Practice and Research*. <https://doi.org/10.5929/2013.3.2.8>
- Mitchell, G. (2015). Use of interviews in nursing research. *Nursing Standard (Royal College of Nursing (Great Britain))*: 1987), 29(43), 44–48. <https://doi.org/10.7748/ns.29.43.44.e8905>
- Naderifar, M., Goli, H., & Ghaljaie, F. (2017). Snowball Sampling: A Purposeful Method of Sampling in Qualitative Research. *Strides in Development of Medical Education*, 14(3). <https://doi.org/10.5812/sdme.67670>

- Nawzad, L., Rahim, D., & Said, K. (2018). The effectiveness of technology for improving the teaching of natural science subjects. *Indonesian Journal of Curriculum and Educational Technology Studies*, 6(1), 15-21.
- Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2015). Purposeful Sampling for Qualitative Data Collection and Analysis in Mixed Method Implementation Research. *Administration and Policy in Mental Health and Mental Health Services Research*, 42(5), 533–544. <https://doi.org/10.1007/s10488-013-0528-y>
- Philippine Statistics Authority. (2015). *Urban Population in the Philippines (Criteria for Urban Barangays)*. https://psa.gov.ph/sites/default/files/attachments/hsd/specialrelease/2015POPCEN_Special_Release_of_Urban_Population_of_the_Philippines_Urban_Rural_Explanatory_Text.pdf
- Porter, T. (2020). Reflecting on Teacher Wellbeing During the COVID-19 Pandemic. Regional Educational Laboratory Program. Retrieved from: https://ies.ed.gov/ncee/edlabs/regions/pacific/blogs/blog28_reflecting-on-teacher-wellbeing-during-COVID-19-pandemic.asp
- Romano, L., Papa, L., & Saulle, E. (2012). Awesome lesson ideas to integrate science across the curriculum. Teach Hub. Retrieved from <http://www.teachhub.com/integratescience-across-curriculum>
- Sundler, A. J., Lindberg, E., Nilsson, C., & Palmér, L. (2019). Qualitative thematic analysis based on descriptive phenomenology. *Nursing Open*, 6(3), 733–739. <https://doi.org/10.1002/nop2.275>
- Tufford, L., & Newman, P. (2012). Bracketing in qualitative research. *Qualitative Social Work*, 11(1), 80–96. <https://doi.org/10.1177/1473325010368316>
- Tanhueco-Tumapon, T. (2020). Education and the New Normal. Available online at www.manilatimes.net, Date Accessed, 13 May 2021.
- United Nations Educational, Scientific and Cultural Organization (2020) Framework for reopening schools. Retrieved from: <https://unesdoc.unesco.org/ark:/48223/pf0000373348.locale=en>