

PEDAGOGY

for Online Learning

Theory and Practice

Rodrigo M. Velasco
Ruel F. Ancheta
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editors



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Preface

During this unprecedented time, almost all educational institutions have shifted from traditional learning to online learning. When the COVID-19 hit the world, online teaching was no longer an option but a necessity. Due to government restrictions and other related protocols, schools, colleges, and universities opted to deliver academic instructions into online to ensure that students still receive quality learning they deserve. Online learning is a tool in which teaching and learning process still become student-centered, innovative and flexible. However, online learning can also become a disadvantage as there are many challenges associated with online teaching and learning. This e-book offers the different perspectives on online learning: framework, learning experiences both on students and teachers and its associated future management.

The introductory part of this book gives an overview and framework of online learning. It provides technical discussions of learning management systems and teaching and learning modalities used in online learning. It serves as guide in the development of the appropriate learning management system and modality relevant to the capacity and necessity of the academic institutions. The authors shared their actual experiences in the development and management of the systems and programs in online learning.

Part 2 of the book contains the efficacy of online learning experience as per the students' perspective. It highlights the attitude of students towards distance learning at the peak of

the pandemic termed as ‘behavioral Coronaphobia.’ This part also highlights the expectations of high school and higher education students on online learning and teacher-created videos as a tool in the online learning. The authors shared the results of their studies on the actual experience of their students which unveiled the various positive and negative facets of online learning.

In part 3, the efficacy of online learning as per teachers’ perspective is presented. This part highlights the experience of the rural science teachers and the school administrator during the new normal in education. Recommendations outlined on this part serve as bases for further analysis in terms of online teaching-learning implementation. Meanwhile, the future of online learning is outlined in part 4, which can be a basis for further review. The model contained in the paper can be particularly applied in higher education where online platform may be adapted for long in the post-pandemic new normal.

This e-book offers major research results on the conduct and implementation of online teaching and learning in the context of COVID-19 pandemic. It provides a unique perspective on the research issues regarding the effects of online learning from many experts in this field.

Let us learn from the various personal experiences and perspectives of the researchers from various fields of specialization!

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Part 3

The Efficacy of Online Learning Experience – Educators' Perspectives



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

Juliet C. San Luis

Introduction

Teaching science in the 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 hands-on activities. However, the sudden shift of learning modality opened to 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 wants to recognize the struggles, challenges, and coping strategies of rural science teachers in response to the circumstances in their locality. This research paper 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.

Literature Review

The Face of Rural Schools under the New Normal Education

The pandemic caused a significant impact on the basic education system, around 87% of the student population across the globe was affected by the school closures (UNESCO, 2020). Since the

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primary concern is the health and safety of the citizens, especially youths, schools were forced to close. According to a news article of Malipot (2020) the Department of Education Secretary Leonor Briones stated that even though the country is facing the impacts of the Covid-19 virus, education must continue. This put forward to the DepEd to adopt the Basic Education Learning Continuity Plan under the DepEd Order No. 12 series of 2020. The DepEd provided learning modalities applicable during the pandemic; distance learning is one of the top choices of the schools. Distance learning is the learning modality wherein teachers and learners are of different locations during the instruction. Under this modality are modular-based learning, online-based learning, and television or radio-based instructions (DepEd, 2020).

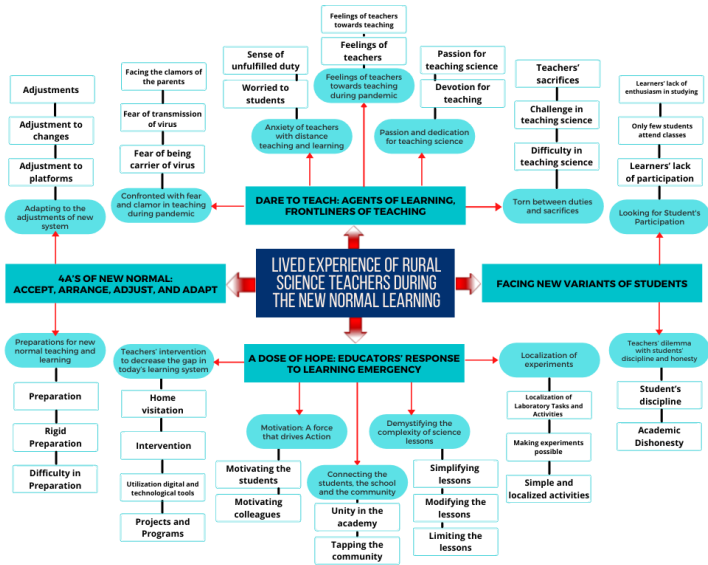
Another article by Malipot (2020), secretary of the Alliance of Concerned Teachers General Raymond Basilio said that one concern of new normal learning is the schools in rural communities. Students in rural communities have little to no access to the internet and electronic learning modalities. Thus, this would lead to greater possibilities that rural schools will be academically left behind in this opening of classes, because of the limitations on learning resources, internet access, and facilities. To answer that shortfall, as cited in an article by Jadhav and Patankar (2013) on the Roles of Teachers in Curriculum Development for Teacher Education, the primary role of the teacher in school is to serve as the bridge between the curriculum and the students. Thus, despite the closure of schools, they are responsible for providing quality education to all learners. However, there are changes in the curriculum because of the emergence of the Covid-19 that gave challenges to rural teachers, especially on those teachers instructing subjects whose nature includes content knowledge and practical skills such as 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, testing, experiments, and other hands-on activities. Through the help of these dedicated rural teachers, even though profoundly challenged due to the sudden shift of the education system, and the threat of the coronavirus,

science educators still translate the understanding of knowledge on science to meaningful classroom experiences.

Theoretical Framework

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. Thus, the researcher should avoid theoretical framework, presumptions, and knowledge prior to the study to limit the biases on the data analysis (Khankeh, 2014). 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.

Figure 1
Thematic Scheme of the Lived Experience of Rural Science Teachers during the New Normal Setting



It shows the four major themes that emerged from the study. The first theme, entitled 4A's of New Normal: Accept, Arrange,

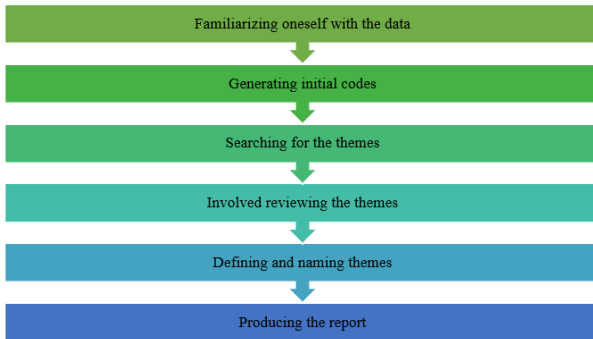
Adjust, and Adapt, represents the four-word phases of how teachers embrace the new system of teaching and learning processes. It reveals that acceptance of the situation is the first step to efficiently arrange and prepare the needed plans for the school year. As they apply the formulated strategies for the new normal learning, they eventually adjust and continuously adapt to the changes. The second theme, Dare to Teach: Agents of Learning, Frontliners of Teaching, shows that, 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. 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, coined as Facing New Variants of Students, represents teachers' insights towards the students learning away from them. The theme discloses the teachers' dilemma on the discipline, honesty towards outputs, and students' attention on their tasks. Then lastly, the fourth theme the teachers' intervention with the underlying problems posed by today's educational setup. Their story gave rise to its title, A Dose of Hope: Educators' Response to Learning Emergency, which pertains to how the science teachers created projects and interventions to give light to the deficiencies posed by the new normal.

Methodology

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).

Ethical standards on trustworthiness and rigor were followed. Informed consent was provided by the researcher that provided the participants with detailed information on the study. It was sent then was signed, and the day and time of interviews were scheduled based on the participant's availability. 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. Interviews were taken about 20 to 45 minutes to ensure that the data gathered were sufficient. Phone and online interviews were conducted via video conferencing applications. The researcher used the unstructured interview format with an opening question: "What are your experiences as a rural science teacher during the new normal setting of education?" 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.

Figure 2
Braun and Clarke (2006) Methods of Thematic Analysis



Data were analyzed using Braun and Clarke (2006) thematic analysis, which 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.

Findings and Discussion

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 came 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. *Leoncio* shared his experience on how they prepare for the new normal learning.

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

Science teachers also discussed how they adapt to the adjustments brought by the new system. Ma'am *Josette* stated that:

“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 was quite detailed, then next one was how to present word file from the PowerPoint on the zoom...so we were taught about those, that is 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 stated:

“Yes, we must adjust, we need to adjust on the capacity of today’s children and with the situation as well.”

To further strengthen the themes, reflective resonance was done that presents available works of literature parallel to the generated theme. 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 amid the pandemic. After having that mindset, preparation is essential to equip teachers with the necessary knowledge and skills needed in new normal education (De Villa & Manalo, 2020). In addition to that, according to Tanhueco-Tumapon (2020), the global crisis posed an immediate adaptation of teachers to the new normal learning. Teachers showed flexibility and fortitude in dealing with the abrupt changes in teaching and learning processes.

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

The second theme, entitled *Dare to Teach: Agents of Learning, Frontliners of Teaching*, came from five sub-concepts: (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. They also shared how their passion and dedication to teaching acts upon them to face all the hurdles of an agent of learning.

Leoncio shared:

“Regarding the health risk, since our modality is through a module, how can we face the children? How can we face the parents since there is a fast transmission of the virus? Especially

here in Pagbilao, Pagbilao belonged to the top four areas with many Covid cases at that time. So, the challenge there is on how we would face [the people]?”

Clara added that:

“Their 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 to the extent that they prohibit the teachers from entering there because they were afraid of Covid.”

Leoncio narrated his experience as he encountered this problem:

“...there were parents who were bucking there ... 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.”

Luz shared:

“In case of public [schools], there were a lot of students who have 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, however, of course, I’m uncertain of whether they really accomplish it or not, hence at least they comply. That is why the system right now is too difficult, especially in our science subject.”

As *Fe* said that:

“Of course, it is different, challenging but manageable. Yes, our love for teaching science is still there, that even 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.”

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, as cited from the study of Cahapay (2020), according to Romano, Papa, and Saulle (2012), 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. Another challenge that a science teacher can encounter is facilitating laboratory tasks since it requires technical assistance and supervision from the facilitator (Arrieta, Dancel, & Agbisit, 2020). This has been crucial to the teachers, especially in this subject that entails hands-on engagement among the learners to meet the objectives of the subject. As Lansangan and Gonzalez (2020) stated, public school science teachers continue to empower learners even struggling in the new normal learning using their dedication and perseverance in teaching science.

Theme 3: Facing New Variants of Students

Another theme comes to the fore from the experiences of science teachers, 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. It contains teachers' descriptions of 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. *Luz* shared her experience:

“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.”

Leoncio also experienced academic dishonesty among students:

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

As Dhawan (2020) indicated, given that DepEd imposes protocols regarding the students’ participation, students were not forced to submit modules early on time because of the limitations brought by the learning situation. These became a huge concern among the science teachers in monitoring the students in distance modality. The Department of Education admits they already expected that issues on academic dishonesty are inevitable in the system of blended learning. As cited from the news article of Adonis (2020), the DepEd Undersecretary for curriculum and instruction, Mr. Diosdado San Antonio, asked the help of the guardians or any significant adults that they play a huge role in reinforcing the value of academic honesty within their child. In addition to that, the article pointed out that a teacher is knowledgeable enough to identify whether the outputs of the learner were indeed done by them or accomplished by someone else.

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. *Leoncio* shared his experience in conducting projects for distance learning:

“I even climb the mountain of... and under the heat of Atimonan, yes you’re right, we go there since we have a vehicle. We visit the learners from the lists of names of the students in a barangay or a

sitio, we conduct mobile learning that we called project SMILE-Student Mobilization Intervention for Learning and Enhancement.”

Fe talked about the science experiments during new normal learning:

“Yes, it’s still possible, they have activities and experiments, but then it will be done at their homes. For example, before, I had a topic in grade 8 about the earthquake, so they used stones, water for them to see what waves looked like if they used big pale with water, stone or ruler, like all the possible materials that they could use are available at their home thus localization of activities are done.”

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 some children who cannot cope up, we create; actually interventions for that.”

According to De Vera's (2020) study about teachers’ resiliency in new normal classrooms, 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. The science teachers in the study embrace the use of technology through the utilization of new applications, media, and learning platforms that pave the way to meaningful learning. The unforeseen learning emergency that shifted all systems paved the way for teachers to go out of the box in finding solutions to the challenges posed by the pandemic (Arietta et al., 2020). Since science experiments are difficult to conduct in distance learning, localized laboratory experiments were conducted, modifications of lessons that still correspond to content standards, and discovery

of online platforms proved that learning must continue through these committed science teachers.

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. Teachers have prepare methods and strategies that will continue meaningful learning in 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 the new normal learning. All these seminars and several 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. It is challenging for rural science teachers to grasp students' attention in the new normal setting. The findings imply that the reduced amount of face-to-face guidance also 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. 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.

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