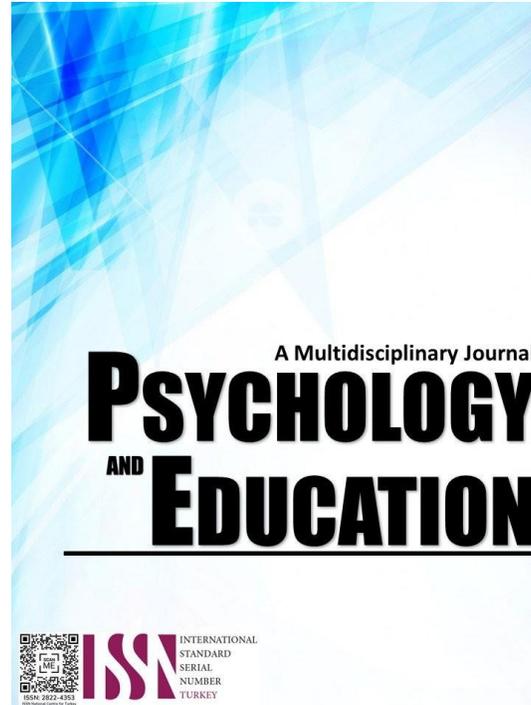


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Experiences of Secondary Science Teachers in the Early Stage of Post-Pandemic Education

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Abstract

After the ravage of the COVID-19 pandemic, the Philippine educational system is now squirming slowly but steadily in welcoming the new days of its aftermath. As education flounders back to face-to-face learning, this qualitative study explored teachers' experiences in the early stage of post-pandemic education utilizing Colaizzi's phenomenological data analysis. The in-depth interviews with the participants revealed three themes with five sub-themes namely; contrasting teaching pedagogy, deteriorating academic achievement, and behavioral challenges. The sub-themes include teaching in MDL is monotonous while face-to-face is boundless, substandard learning transfer and significant learning gap, declining reading skills, academic dishonesty, and apathy among learners. Regardless of the number of years of teaching, all the participants concede that MDL has brought more negative effects than positive ones in students' academic performance. Recommendations are highlighted which include enhancement activities to bridge the learning gap, especially on the alarming number of non-readers; redefining assessment to eliminate academic dishonesty; harnessing new acquired skills in using educational apps and learning management systems; and support from the government in solving longstanding educational inequities that are unearthed during the pandemic.

Keywords: *qualitative study, colaizzi's phenomenological data analysis, post-pandemic education, modular distance learning, face-to-face learning*

Introduction

Within no time, COVID-19 has changed the world's educational landscape to distance learning. Scholarly articles highlight the fact that DL has become essential for instructional practice as a response to the global public health crisis. Distance learning provides a way to maintain contact between students and teachers during the national lockdowns. Amidst havoc, the Philippine educational system remains steadfast and unshattered as it continues to deliver life-long education to the Filipino learners during this most trying time.

In its desire to provide quality education in the "new normal" context, the Department of Education emerges its flagship response, the Basic Educational-learning Continuity Plan (BE-LCP) which is collaboratively developed in response to the need to continue education despite the restrictions imposed by the Covid-19. Stipulated in the BE-LCP the alternative learning modalities such as dissemination of self-learning modules alongside other modalities such as online, blended, television-based, and radio-based instruction which will serve as a driving wheel to carry on learning. In this manner, not only students, but also teachers and staff, have been protected from contacting Covid-19 as a result of this initiative (Department of Education [DepEd], 2020).

In light with this, the Schools Division of Valencia City adapts the Printed Modular Distance Learning (PMDL) as the learning delivery modality for learners for school year 2020-2021 to S.Y. 2021-2022.

With this unprecedented shift in the educational arena, various problems and challenges have been enumerated as learners and teachers alike face similar and varying issues and concerns. Despite groping in the dark due to the many uncertainties associated with this abrupt change, everyone had been hopeful in this endeavor. However, it cannot be denied that as teachers confront this new learning delivery, problems and opportunities are on their way to astonish or annoy them.

Alongside educational disruptions, the department of health exhausted all possible means to make enormous success in its vaccination campaign. As the downward trend in the number of Covid positive cases is evident, the Philippine government and educational institutions are eager to grapple with opportunities for the reopening of schools as governments across the world are slowly and steadily easing restrictions. This move has made the education departments hopeful of a safe return of face-to-face classes despite the long school closure. It seems increasingly clear that every student who wants to will be able to return to school in the school year 2022-2023.

True enough, in July 2023, Deped has released the guidelines on the school calendar and activities for S.Y. 2022-2023 in accordance with its commitment to the resumption of 5 days of in-person classes. Deped Order no. 034, series of 2023, sets the start of classes on August 22 and will end on July 7, 2023. Deped only prescribed the options of 5 days in-person classes, blended learning modality, and full distance learning until October 31, 2023.

It is to be noted that the demand for a complete and immediate conversion to distance learning for all levels of education across the country is an uninvited guest. This had never occurred before the 2019 pandemic. Research related to an educational disruption of this magnitude and impact is extremely limited. While related research is scarce, the opportunities to learn from this event are numerous. Understanding the experiences of educators as they modified curriculum in content, delivery, and assessment, along with their perceptions of the challenges and benefits of distance learning, can assist educational professionals, leaders, and researchers to reflect on teaching and learning in every realm. In addition, it can also equip them with a better grasp of the complexities involved in an

immediate and total disruption of the educational platform. A better understanding of these experiences can inform and guide how teachers are trained and better prepared to manage future disruptions effectively.

As we transition to new normal, both challenges and opportunities were hurdled by the teachers and the students just to continue education. At the moment of writing, the world is now slowly leaving the dark night of this tumultuous times and steadily welcoming the new dawn of the face-to-face classes. Another shift is expected which entails another brand-new experiences and challenges to face.

In the international literature, there are many studies on the widespread use of distance learning in the first period of the pandemic (Almaghaslah & Alsayari, 2020; Altuntaş Yılmaz, 2020; Arslan, 2020; Balcı, 2020; Başaran et al., 2020; Bhamani et al., 2020; Bozkurt, 2020; Can, 2020; Genç & Gümrükçüoğlu, 2020; İmamoğlu & Siyimer İmamoğlu, 2020; Mahdy, 2020; Ramos-Morcillo et al., 2020; Sen & Kızılcalıoğlu, 2020; Sever & Özdemir, 2020; Ünal & Bulunuz, 2020). The same is true with our very own Filipino researchers (Boholano, et al., 2020; Jamon, et al., 2020); Malipot, 2020; Anzaldo, 2021; Ayagon, 2021; Agarin, 2021). In these studies, the views of teachers on distance learning experiences in the first period of the pandemic were determined. However, in this study, it is more on the teachers' experiences after going back to face-to-face classes, and their recommendations for the post-pandemic education. The author has a keen interest in the current and future trends in the new normal education.

Research Questions

Teachers thinking and analyzing their experiences with an intent to improve their practice make them better teachers. With this, this study sought to investigate the experiences of science teachers in the early stage of Covid-19 post-pandemic education and their recommendations. Specifically, it sought to answer the following questions:

1. What are the experiences of secondary science teachers in the early stage of Covid-19 post-pandemic education?
2. What are the recommendations of secondary science teachers in teaching science after the pandemic?

Methodology

Research Design

This paper is a qualitative descriptive phenomenological research. Specifically, it adapts Colaizzi's Phenomenological data analysis. This means that the study is less concentrated on testing hypotheses, but on the description, analysis, and interpretation of a given phenomenon. This design is suited to this study as it attempts to describe the experiences met by the secondary Science teachers in face-to-face classes after 2 years in modular distance learning.

The phenomenology claims that to understand human experiences, it requires immersive penetration of individual's thoughts and insights through employing interviews or extensive discussions (Creswell, 2009; Giorgi, 2009; Moustakas, 1994). Since these were the actual lived thoughts of the participants who have all experienced the phenomenon of teaching remotely, it facilitates a culmination of interpretation of their experiences (Campbell, 2011; Creswell, 2009; Willis, 2007). For instance, it involves the actual establishment of meanings from the views of their lenses which is essential for the researchers to know deeply where the participants are coming from.

The experiences of the teachers were gathered through an online or in-person interview. The researcher conducted the study in four (4) schools in the Division of Valencia City. Five (5) teachers were chosen as key informants through purposive and quota sampling. The questions used in the interview are researcher-made, which was validated by an expert from Bukidnon State University. Deductive Thematic Analysis was employed in the interpretation and coding of data.

Participants

The participants of the study were the five (5) secondary Science teachers handling Science 8 from the 4 schools in the Division of Valencia City namely; Valencia National High School, Lurugan National High School, Tongan-Tongan National High School, and San Isidro Integrated School. Two (2) participants came from the big school, another two (2) participants from the medium school, and one (1) participant from the small school. Complete enumeration was utilized in this research.

Instruments

A semi-structured interview schedule was developed. The first section asked for demographic information relating to the participant's age, gender, educational attainment, and years in service. The second section contain questions about their experiences as teachers in face-to-face classes after 2 years in modular distance learning.

This strategy will allow the interviewees broad parameters for responding in their own words while guided toward addressing the topics as outlined in the research questions. The interview questions invited the participants to tell their stories (Roulston, 2010). Additionally, probes were used to solicit richer and more detailed descriptions of phenomena. Sorrell, Dinkins, and Hansen (2016) adopt the notion of the interview as a dialogue eliciting a shared construction of meaning.

Procedure

Data for this research came from interviews with each of the 5 participants approximately two entire school year into modular distance learning and less than a year in face-to-face classes. Follow-up interviews were conducted three weeks later. The interviews were conducted via video conferencing or in-person, depending on the convenience of the participants.

The initial interviews were guided by a series of open-ended questions developed to solicit thick and rich descriptions from participants of their experiences transitioning to and implementing distance learning for students (see Appendix X). The duration of each of the initial interviews ranges from 30 to 60 minutes. The second interviews were between 30 and 40 minutes in length and included some of the same open questions and guiding statements as in the original interviews (see Appendix Y), along with probing questions unique to each interviewee, to elicit more details and elaboration on statements from their first interviews. Conducting the second interviews with every participant allow for clarifications, examples, or simply confirm the information acquired in the first round.

Every interview was audio and video recorded and transcribed. The researcher also took notes during each interview and immediately afterward, record personal reactions, insights, connections, questions, and perceptions regarding gaps in response to the interviewees' comments.

A constructivist approach to interviews indicates a co-construction of meaning (Roulston, 2010; Sorrell Dinkins & Hansen, 2016). Although the interviewees provided the bulk of the data, the researcher's comments prompt notes, reflections, and reactions as the interviewer must be considered in reviewing the data. These interview notes and research memos aided in the generation of meaning and, although not coded as data, did assist in the process of data analysis.

Results and Discussion

This part of the study comprises the presentation, analysis and interpretation of the findings of the research.

Table 1 shows the Demographic Profiles of the five (5) junior high school science teachers.

Table 1. *Junior High School Science Teachers Profile*

<i>Teacher Respondent</i>	<i>Rank</i>	<i>Years in Teaching</i>	<i>Specialization</i>	<i>Type of School</i>	<i>Highest Ed. Attainment</i>
A	SST-1	9	Biology	Big	MA Units
B	SST-1	14	Biology	Small	MA Units
C	SST-1	5	General Science	Big	MA Units
D	SST-III	15	General Science	Medium	Master's Degree
E	SST-II	11	Biology	Medium	PhD Units

The table shows that most of the science teacher-respondents have been into teaching in DepEd for several years already. This means that they have encounter varied experiences into the usual face-to-face classes all their teaching careers. Also, all of them have extended their professional growth by earning units in masters, four (4) of them, and one (1) in doctorate degree. Among the five (5) teacher-respondents, two (2) of whom came from the big school, another two (2) from a medium-sized school, and only one (1) from a small school.

It is noted from the data that all the respondents are science teachers with specialization either in Biology or General Science. Philippines uses spiral progression which is a concept of learning approach where students revisit the same topics throughout their school career that increases complexity and reinforcement of previous learning. Science teaching entails teaching the four (4) subjects; Biology, Chemistry, Earth Science, and Physics in every grade level. With the data given, it denotes that regardless of the teacher's specialization, they have to teach all of the aforementioned subjects.

Since this study is a phenomenological research design because it lodges on the experiences of secondary science teachers in the early stage of post-pandemic education. After gathering the data, the researcher clustered, described, and structured the narratives of the teachers and came up with the following themes.

Theme 1: Contrasting teaching Pedagogy

Teaching science in MDL is monotonous while face-to-face is boundless

Based on the participants' responses, teachers found modular learning as monotonous. Teaching and learning lacks variety and interest. It is dull and tedious which is revealed from their responses.

"I have to download the modules given by the Division office, print it, staple, and then give to the learners." (P2)

"During pandemic I can say that there was no teaching process that happened. I just gave the modules and then let them answer it. The

following week, I have to print again for the next retrieval and distribution.” (P5)

“Printing is life. If I cannot print the modules, there’s nothing I can give during retrieval so I have to print during free time. Sometimes I set aside checking the output and answered answer sheets because I have to print.” (P4)

“Boring and laborious, honestly. Everything is done through modules, no student-teacher interaction. At the same time, the preparation and sometimes distribution eat my time especially when the students cannot go to school, we have to bring the modules to their home”. (P1)

This theme is in consonance with the result of Malipot (2020) who stretched that one of teacher’s problems is the reproduction costs and being forced to attend school as late as 11:00 pm to complete printing on time. This extra hour spent by the teachers can be attributed to the late posting of modules from the regional or division offices (Tagupa, 2018). In addition, when uploads are delayed, teachers must construct their own instructional activities for their learners (Anzaldo, 2021). This adds up to the workload of the teachers making these new tasks laborious. This repetitive routine of printing and distributing is just one of the reasons for the monotony in the teaching and learning process. This modality may cause the teachers to lose passion for teaching due to their clerical tasks, which are routinely done. These tasks can lead to teachers’ burnout. Chang (2009) found out that teachers’ burn out may lead to anger, frustration, or worst anxiety, stress, or quitting the profession. According to P3,

“My usual tasks are to print, distribute, retrieve the modules, check their outputs, and record them.”

“I am also worried that my teaching skills might degenerate because I cannot use it during MDL” (P5)

Boholano et al. (2022) concludes that the new tasks for teachers in Modular-distance learning in the Philippine public schools are making, printing, distributing, retrieving modules, and marking answer sheets. Before the pandemic, teachers were already used to marking learner’s papers. Meanwhile, teachers were not used to making, printing, distributing, and retrieving modules. These were on top of other paper works that teachers in the public schools have to accomplish.

Other than the laborious module preparation, Ayagon (2021) mentioned that teachers showed displeasure that the sole source of information is only the module. Since physical contact is strictly prohibited during this time, there’s no way that teachers can explain to the learners the content of the modules. One of the respondents said,

“I conducted online tutorial once or twice a week, catering the most difficult lesson or topics of the learners in answering the activities in the module. However, many of my students cannot attend the tutorial due to lack of internet connection and sometimes gadget.” (P1)

This inevitable truth of disparity among the public schools in the country in terms of access to internet, and availability of gadgets such as cellphones and laptop hinder the earnest desire of the teachers to reach out for the learners through learning management systems applications. In effect, the learners are left with no choice but to learn through modules.

The data imply that teachers’ roles in MDL are limited. This modality eliminates the most critical role of the teachers as the facilitator of the teaching-learning process. Discussing, processing, explaining, and awakening the curiosity of the learners, including the use of multiple pedagogies to enhance participation and learning are few of the premium functions of teachers and in their absence, meaningful and exciting learning is obstructed.

Alternately, teachers found face-to-face teaching in a different light after the 2-year MDL. Teachers can now use different teaching strategies to engage students in the lesson which are evident in their responses.

“Teaching is more on hands-on activities to engage and motivate learners in science lessons, and activities. I usually do group activities, like experiment, sometimes oral recitation and then reporting”. (P1)

“In face-to-face, I can elaborate science concepts through discussion and then use supplementary activities to improve learning. Here, I am assured that before leaving a topic, the competencies that should be mastered are met” (P3)

“Now, I and my students can communicate and exchange discussions. They have the chance to ask me questions every time they are confused with the topic. I can easily answer them back.” (P4)

Even before the pandemic, teachers are already using various teaching strategies and styles in their science teaching. These pedagogies are not new, however, it is taken and valued in a different perspective now that we experienced the havoc of the pandemic. Those strategies that seem to be obsolete and routinary have been renewed as to its usage and importance in science teaching and facilitating learning. These teaching strategies play an important role in classroom instruction. Without the use of a strategy, teachers would be aimlessly projecting information that doesn’t connect with learners or engage them. Strategies help learners participate, connect, and add excitement to the content being delivered.

This result is in consonance with Agarin (2021) revealing that the teacher’s physical relationship with the students has an impact on the students’ academic performance. Similarly, Secuya and Abadiano (2022) mentioned that teachers that use modular remote learning realize the significance of their role in the educational transformation. All the participants showed enthusiasm for the learning of their students leading them to appreciate the education transition from modular to face-to-face classes.

“We can have field trips or laboratory works in Science class now.” (P5)

“They can do their performance tasks in school or in the classroom with my supervision so I can expect better outputs and original work”. (P2)

“I can finally stimulate their appetite in learning Science because science activities are more on hands-on and experiential learning.” P4

In the study conducted by Salamuddin (2021), it revealed the students’ perceptions in face-to-face learning approach (FTFLA) versus modular distance learning approach (MDLA) at Mindanao State University –Sulu, students agreed that in face-to-face, they feel motivated while they practice collaborative learning. Thus, it boosts one’s self-esteem and simultaneously develops higher-order thinking skills (HOTS) that results in maximizing their academic performance. The availability and accessibility of learning resources in face-to-face makes it easy to comprehend the topic and text, vocabulary and other knowledge on the specific learning areas and becomes comfortable in analyzing data to meet the objectives of the lesson. Teachers always give guidance during face-to-face to the students with an immediate feedback when it comes to activities and any other related school matters. It is also shown that face-to-face is conducive to learning while it is seen as affordable means of education since it involve both teachers and students’ physically in the learning process.

This goes to show that teachers are not the only person who felt the monotony of MDL but also the students. The absence of fun and exciting learning experiences diminish the motivational attitude of the learners towards the subject.

Theme 2: Deteriorating Academic Achievement

Substandard Learning Transfer and Learning Gap

Steiner (2001) mentioned that transfer of learning means the use of previously acquired knowledge and skills in new learning or problem-solving situations. Another researcher, Rapport M. (2020) said in practice, it reflects the ability to transfer what is learned in one context or situation to another. Sometimes it occurs at a subconscious level and requires minimal conscious effort if the learning to be transferred has achieved automaticity and is sufficiently similar to the learning in the new situation.

During the pandemic, teachers were forced by circumstances to use unfamiliar learning modality, the modules. While teachers have gained invaluable lessons from utilizing technology and using digital tools to supervise their pupils’ learning, the same cannot be said for their students.

Most students, on all levels of learning, found the pandemic-tailored teaching challenging if not difficult to adapt to. The ability to learn was mostly dependent on family income levels, where the poorest saw significant numbers of dropouts and loss of learning (Reich, 2021).

With the more affluent families, learning became a markedly shared responsibility of parents and teachers, the former would render more supervisory hours for their children not only because they were also cooped up at home, but recognizing the shortfalls of the new normal learning.

Since most of these students where teacher-respondents are teaching fall on the lower class of the society, whose financial status cannot even afford to buy load to connect to the internet, or own a state-of-the art cellphones, we expect that their sole source of knowledge are the modules being distributed.

The teacher-participants in this study ascertained that students’ learning transfer in MDL did not happen effectively or the learning competencies were never mastered. In effect, a huge learning gap takes place. This claim is based on the assertion of the respondents of their experiences.

“I am dismayed that grade 9 students do not know about cell which is a topic in grade 7”. (P2)

“There are students who cannot read or have difficulty reading. There are some who can read but cannot comprehend and it greatly affects their performance in answering science activities”. (P3)

“It took me time to introduce a lesson because I have to discuss first a certain topic in their lower year level so they can connect the lesson we are having now.” (P5)

“When you ask them if they know anything about a certain topic, Matter for example, they will just shake their head”. (P4)

“Very poor in reading, spelling, and grammar. They also lack basic scientific skills such as measurement, critical thinking, and problem solving.” (P1)

Since K-12 is anchored on spiral curriculum which topics increase complexity as the learners’ progress to a higher year level, the inability of the learners to master the competencies in the prior academic year will impede the competitive advancement in each subject.

Competencies are combinations of knowledge, skills and attitudes that students develop and apply for successful learning, living and

working. They emphasize aspects of learning that apply within and across all subject areas. Students are the artists, scientists, thinkers, innovators and leaders of the future. They will be tasked with solving the problems of today, while imagining and creating a new tomorrow. How can we then expect them to perform such tasks if they cannot even comprehend simple instructions due to poor reading ability and mediocre scientific skills? Competencies are critical for equipping students with the knowledge, skills and attitudes that they will need to successfully navigate their personal journeys in learning, living and working. Here are some of teachers' responses pertaining to unmastered competencies.

"Students cannot answer their work in complete sentences. They find it hard to do." P2

"I am already anticipating the learning gap because many of my learners during MDL cannot answer their activity sheets which means they did not bother to read or study their modules. However, I am saddened that a simple multiplication is hard for them which affect their skill in solving problem especially in Physics." P1

"I need to use vernacular in the discussion because some of them cannot understand me speaking in English." P5

Competencies help students draw and build upon what they know, how they think and what they can do. However, the return of the learners after 2-year MDL has brought distress among the teachers about the lack of mastery of these competencies that are essential in performing life skills.

Boholano et. al (2022) remark that teachers' experiences in MDL provide doubts among the participants that there is no assurance that students are learning. This conclusion is now affirmed by the current experiences of teachers face-to-face where a significant learning gap is evident.

Test scores and assessment data revealed that students from the last two years have made less progress in standards-aligned content coverage than in prior school years (Reich, L. & Mehta J., 2021). This result is taken from a study conducted in the United States and this has no difference in the result of Dargo, J and Dimas, M. (2021), who posits that there is 2.25% decrease in the GWA of learners after the implementation of MDL, research conducted in the Philippines. These results coincide with the narratives of the respondents about the significant learning gap they encounter in the return of face-to-face classes.

According to the World Bank, even before the pandemic, the Philippines had among the world's largest education gaps, with more than 90% of students unable to read and comprehend simple texts by age 10. The long-standing problem in the Philippines such as shortage of buildings and classrooms, uncomfortable classroom environments, overstuffed curriculum, and scarcity of teachers are just few of the factors contributing to the learning gap prior to the pandemic. And, when the pandemic came, that gap has tremendously created a vacuum in learning.

In a study entitled, *Addressing the Learning Gaps in the Distance Learning Modalities* authored by Torres, R (2021), she made mentioned the definition of learning gaps. Accordingly, this refers to the difference between what learners are expected to have learned by a certain grade level versus what they have learned up to that point. These learning gaps are often compounding, which means that if they are not addressed promptly, learners are likely to fall further and further behind because of the skills and knowledge they have missed. This compounding phenomenon poses a major challenge for both educators and learners alike as learners progress to a higher level of the education ladder. Learning gaps happened when learners missed a skill and proceeded to a new lesson without any remediation on it. Since the lessons are arranged from simple to complex competencies, any unmastered simple skills will hinder the learners to master, too, the higher level of competencies, thus leaving a gap from the standard mastery level to what is expected of them on their succeeding lessons.

Any gaps should be addressed at the soonest possible time for the successful mastery of competencies as prescribed in the curriculum. In this return of face-to-face classes, we are facing a big challenge for teachers and learners alike on how to effectively bridge the identified learning gaps.

Definitely, one of the biggest and deepest scars left behind by the pandemic, and which the teachers must give more attention to, is the significant deterioration of learning by our Filipino youth during the two and a half years that face-to-face classes were suspended.

Declining Reading Skills

Overwhelmingly, all the teachers interviewed expressed concern about the alarming number of non-readers in their classes. They said it was challenging since they needed to make

adjustments just to be on the students' level. Hence, they cannot continue with their supposed lessons as stated in the curriculum. Some have resorted to sectioning their classes into readers and non-readers. Here are their responses.

"I have students who are non-readers. Only few are independent, some are instructional". (P3)

"I cannot expect them to make clear and correct sentences because they cannot even read and understand simple instructions." (P4)

"During CNR, we provide time for reading classes because if we do not intervene in this matter, science teaching will be greatly affected." (P5)

“I have to discuss in vernacular most of the time because many learners cannot understand the lesson using English.” (P2)

“Reading intervention is included in our class schedule. This adds up to our task as teacher” (P1)

While the study is based on the limited number of respondents, the alarming number of non-readers in school is corroborated by other credible reports such as the World Bank (2021) and UNICEF (2021). According to these reports, around 90% of Filipino children by the age of 10 are non-readers.

The acquisition of reading literacy is key for further learning in other school subjects and students’ subsequent educational and life paths (Savolainen et al., 2008). Reading achievement is a core component of reading literacy, along reading motivation and behavior. Reading achievement represents students’ ability to extract relevant information from narrative and informational texts and to understand, use, and reflect on written texts in areas of life that are relevant to the individual and required by society (Mullis et al., 2015). Reading achievement involves multiple levels of text comprehension: surface structure, text base, situation model, rhetorical structure, and pragmatic communication (Kintsch, 1988; Graesser & McNamara, 2011). Mastering text comprehension requires sufficient word recognition (e.g., decoding skills; Wang et al., 2019), language comprehension (e.g., verbal reasoning), and bridging processes (e.g., vocabulary knowledge; see Kim, 2020), as well as active self-regulation, motivation, and engagement (Duke & Cartwright, 2021).

According to Ludewig et al. (2022), various factors must be considered in ascertaining whether and to what extent reading achievement has been affected by the restrictions related to the pandemic. Students learn to read via formal school-based instruction, including homework, and in their leisure time through informal reading activities. The transition from face-to-face instruction in school to modular distance learning because of the COVID-19 restrictions led to less time for formal school-based instruction (Reimers and Schleicher, 2020). In addition, there was less instructional time available in modules, so that overall students spent less time on learning than they would have in school (Woessmann et al., 2020)

Results of these researches announcing the decline of reading achievement, transpire with that of the lived experiences of the teacher-respondents who are now faced with the inevitable truth that they will be the ones to deal this enormous problem the educational system is facing now. Teachers are expected to provide these services in addition to their teaching duties as mentioned by P5. Aside from teacher preparation prior to conduct of the lesson and other tasks in between, they have to double their effort in reading remediation program aiming to develop instructional or better yet independent readers at the end of the school year.

In relation to the aforementioned problem, the Department of Education has reiterated the “No Read, No Pass” policy in all public and private schools in the country. As stated in Deped Order No. 45, s 2002, it is expected that no pupil shall be promoted to the next higher level unless he or she manifests mastery of the basic literacy skills in a particular grade level. All possible means of assistance and encouragement shall be extended to enable the child to read. This is a move of the Deped intended to stop the practice of promoting failing students commonly referred to as “mass promotion” as well as deal with the reading crisis.

With this, despite the lack of training in beginning readers, teacher-respondents accepted the challenge of teaching reading in their classes.

Theme 3: Behavioral Challenges

Behavioral challenges are not new to schools, but with the pandemic introducing additional trauma and stressors, educators fear they’ve become more prevalent. Even as some schools have strengthened support systems, teachers say it hasn’t always been enough to meet student needs — and experts warn the long-lasting effects on students are not yet fully understood.

Academic Dishonesty

Merriam Dictionary defines Behavior as the way in which someone conducts oneself or behave. The result of the study revealed that due to teacher’s absence in learning in MDL, students behave differently.

During the Modular-Distance Learning, teachers are in-doubt about the authenticity of the learners’ output. Teachers argue that the scores and grades that students get are unreliable, considering they are not present and no proper lesson instructions are given to them (Boholano et. al, 2022). Additionally, teachers also pause distrust about the integrity of learners’ answers in their modules because they know the capabilities of their learners. Here are some of the statements of the teacher-participants.

“I cannot really tell whether they are the ones answering their modules or somebody else”. (P4)

“I rely solely on the submitted LAS and other outputs in giving their grades. As to who provided the answer in those, I cannot really tell.” (P3)

“There are students whom I know during face-to-face classes who can barely provide correct sentences during recitation and essays but are able to answer their modules correctly including the essays.” (P5)

“There are answers which are clearly taken from the internet. But I cannot question the student as long as they submitted the answer sheets on time.” (P1)

“One parent told me that the elder sister is the one answering the modules of her sibling because he is working in the nearby city.” (P2)

Historically, students could attempt to use their own handwriting as false proof of originality, but now the digital age has changed that. Academic misconduct has become more diversified and difficult to identify than ever. With new digital tools at their disposal, teachers were holding the fort, but the coronavirus pandemic quickly shaped a new reality in 2020.

For the public-school teachers, one of the weaknesses of the new normal in Philippine education is the difficulty to monitor, feedback, and assess learning. These difficulties are tried to address by the Department of Education by continuously issuing orders and memoranda to guide teachers. In fact, the Department of Education issued DepEd Order No. 31 s. 2020 as a guide in assessing and grading learners in light of the Covid 19 pandemic. Though the order provides clear and specific guidelines on how to assess and grade learners, teachers are still experiencing problems with monitoring, feedbacking, and assessing student learning due to several gaps, such as communication, technology, and students’ socioeconomic status (Jamon, 2021).

One of the biggest challenges of teachers in modular distance learning is academic dishonesty. It is a unified statement of the respondents that they find assessment difficult during Covid-19. Not only because of the introduction of a new normal way of assessing but because of the many inadequacies associated with these changes. One of which is cheating. Since assessments are thru printed modules, the usual setup wherein teachers can facilitate and observe the class during periodical tests is limited. As a result, students cannot be monitored, especially if the assessment is delivered asynchronously. Students can access the particular assessment at their own pace anytime, anywhere. Equivalent to a take-home or open-book test, the reliability of a non-proctored assessment is unclear. The method poses a problem since students can check their answers using textbooks or other resource materials.

Whitley and Keith-Spigel (2002) defined academic dishonesty as committing or contributing to dishonest acts by those engaged in teaching, learning, research, and related academic activities, and it applies not just to students, but to everyone in the academic environment. These can take many forms like cheating, plagiarism, fabrication or falsification, and sabotage.

The Department of Education (DepEd) admits that distance cheating was already anticipated even before the COVID-19 pandemic forced schools to transition to blended learning. In a TV interview of Education Undersecretary Diosdado San Antonio last September 20, 2021, he affirmed the existence of “Online-Kopyahan”, a Facebook group where learners share notes and test answers with over 600,000 members. Most of the information shared were students’ answers to their modules and notes on different topics while others offered answer keys, which were also provided in the learning materials given to them. San Antonio appealed to the parents, grandparents, and other significant adults to help the DepEd reinforce the value of honesty.

But, the DepEd emphasizes that “experienced” teachers would know if a requirement for class was done by the students themselves. Contrary to this statement, since the closure of schools started in the later part of the school year 2019-2020, there are those students which the teacher only knows by name. So, the statement of being an “experienced” teacher to solve the problem of identifying whether it’s someone’s work or not, is an understatement.

Teacher-respondents have a unified statement about the function of the attached answer key in the modules. These answer keys provide both positive and negative effects to the learners.

“When I gave them a LAS that has no answers found in the answer sheet, they will just leave it blank.” (P2)

“They only answer those activities that have answers reflected in the answer sheet.” (P4)

“I have a way of covering specific items in the answer keys to test how far the students have learned, but, only very few would attempt to answer those.” (P3)

“Through the answer key, parents at home can check the answers of their children whether it’s correct or not.” (P1)

In light of the Department of Education’s directive on attaching answer keys in the self-learning modules (SLMs), it clarified that the correction keys in the modules are not meant to be used for cheating.

Since education is no longer held in school, parents serve as partners of teachers in education. Attaching the answer keys in the modules paves way for the parent-facilitator to have a reference on the accuracy of their children’s answers. In a study by Guiamalon (2021), an indicator of parents having the capacity to facilitate the modular learning sessions for their children, yields less evident results. This implies that including the answer keys and ensuring its error-free helps the parents to at least counter-check the work of their child since a study by Anzaldo (2021) stretched that learners have difficulty in answering the modules without teacher supervision.

The Education Undersecretary Diosdado San Antonio said in a virtual press briefing that they received a total of 56 reports of SLM mishaps through the agency’s DepEd Error Watch. After verification, San Antonio said that 30 erroneous modules were from DepEd. Of the total, 27 are from DepEd’s school’s division offices (SDOs), while 3 are from the DepEd central office (CO). He added that while there were Quality Assurance (QA) protocols in place for every level of the SLM, whether locally-produced or emanating from the central office, errors still got through. Just weeks into the new school year, issues continue to hound DepEd’s implementation of the distance learning system. Mishaps such as “painful” grammar errors, wrong math equations, and modules depicting gender stereotypes alarmed the public as they expressed concerns over the quality of education of over 24 million students during the pandemic

(Magsambol, 2020).

Alongside distant cheating is plagiarism. Whitley & Keith-Spigel (2002) defined this as a type of cheating in which someone adopts another person's ideas, words, design, art, music, etc., as his or her own without acknowledging the source, or, when necessary, obtaining permission from the author. For example, copying and pasting material from a website into your own document without proper citation is considered plagiarism. The statement of P1 confirmed that this is happening in modular distance learning. Letting a sibling, or someone knowledgeable does the learning activity which is supposedly intended for the learner and claimed by the learner as his own has committed plagiarism. This situation is rampant among all learners, especially for the slow-paced ones. In order for the modules and learning activity sheet to be submitted on time, an elder brother or sister would finish all the tasks without even explaining to the learner the what, why, or how of the answers.

The experience of P2 in which the sibling is the one claiming and submitting the module including answering and doing other learning tasks such as written works and performance tasks on behalf of his brother is a living manifestation that the educational system has yet to find a better strategy to measure the academic competence of the learners.

This behavioral change of our learners is due to the unforeseen circumstances brought by the pandemic. Now that face-to-face classes have begun, the effect of academic dishonesty is in sight. Learners search for answers in the internet, not in the books and materials they have. They want a fast, instant, and specific answers than the delay of reading through the entire module before locating the answer.

“When we conduct laboratory activity, someone would ask if they can use their cellphones in searching for answers.” (P3)

“When I gave them essays, they will give you very good sentences or answers and it always fascinate me until I found out that it was all taken from the internet.” (P1)

“Students look for the answers of the activities in the internet. They do not think critically, they want instant correct answers.” (P5)

“They like it when the assessment is in multiple choice than other types of test because they can just make a guess.” (P2)

The academic dishonesty of the learners has always been there prior to Covid-19, but, this has brought to a new level because of the advent of new technologies in learning, where in students do not have to think anymore but just type, search, and copy the answers. This poses a great challenge to teachers as to how they can make use of technology as a partner in creating critical learners than sulky ones. With this said, teachers indicate the need for retooling and upskilling of teachers' skills for them to equal the demand of the changing educational landscape of the post-pandemic education. This has the same result with the study of Darling-Hammond and Hyler (2022) and Jackaria & Caballes (2022).

Apathy Among Learners

Teacher-respondents have remarked that upon return to face-to-face classes, they sense a loss of student engagement in learning.

“Students are very dependent on gadgets. They spend their free time in cellphones and not in reviewing notes.” (P5)

“Some students are less interested in the discussion. They seem tired all the time.” (P2)

“I guess we were not able to develop higher order thinking skills in our learners in MDL that's why they seem detached when we let them answer why and how questions”. (P1)

These statements of the teacher-respondents are parallel with the result of the study entitled, Depression, Anxiety, Stress in Students and Teachers: Analysis from Covid, stating that the prolonged confinement due to the pandemic has caused significant changes in people's daily behavior as well as socio-emotional affectation, generating stress, depression and anxiety, especially among teachers and students, who were used to socializing associated with classes in the classroom. As a result, a shift has been felt in student behavior – from being diligent to procrastinating and lazy, a decrease in learning interest, and a lack of motivation to learn.

Since learners during the pandemic have to stay at home for safety purposes, they spent greater time in their smart phones for several reasons. Despite the problematic smartphone use, some research has examined the educational benefits of using smartphones for mobile learning (Traxler, 2009), personalized instruction (Steel, 2012), self-regulated learning (Sha, Looi, Chen, & Zhang, 2012), classroom engagement (Wang, Shen, Novak, & Pan, 2009), and second language learning (Thornton & Houser, 2005). Findings from these studies highlighted educational benefits of smartphone use, such as reducing the digital gap, completing homework, collaboration among peers, quick accessibility of information, and vocabulary enhancement. These benefits culminated into reliance on smartphone use to solve educational-related tasks. These affordances have encouraged continuous dependence on smartphones among adolescents. In effect, even in the return of face-to-face classes, students' high dependency on their gadgets are evident.

Sunday, J (2021) made a study on The Effects of Smartphone Addiction on Learning. The results of the meta-analysis showed that smartphone addiction has negative effects on students' academic performance. When students spend time on their phones to the extent of neglecting their practices of daily life, engaging in excessive smartphone use, or excessively texting on their phones, there is a tendency to develop behavioral addiction to smartphone use, thereby experiencing a decline in academic performance.

As Buctot, D. (2020) eloquently wrote, the prevalence of nomophobia and smartphone addiction among Filipino adolescents was substantially higher than the average. Only 0.5% of the participants did not have nomophobia. This finding clearly indicates that 99.5% (mild: 12.4%, moderate: 63.2%, severe: 23.8%) of the participating Filipino adolescents were nomophobic. This figure is substantially higher than the figures that have been reported in past studies (Lookout Inc., 2012; Mail Online, 2008; SecurEnvoy, 2012; Thomée, Härenstam, & Hagberg, 2011). Similarly, the prevalence of smartphone addiction (62.6%) was also higher than the figure that has been reported in past studies (Cha & Seo, 2018; Davey & Davey, 2014; Lopez-Fernandez, Honrubia-Serrano, Freixa-Blanxart, & Gibson, 2014; Sánchez-Martínez & Otero, 2009) and is similar to Buctot et al. (2020)'s finding. The present findings are not surprising because recent surveys have found that adolescents constitute the “the largest chunk” of smartphone owners in the Philippines, which is the “fastest-growing smartphone market in Southeast Asia” (Abadilla, 2016) and “the social media capital in the world” (Mateo, 2018).

The use of mobile phones more than four hours every day defines a potential mobile phone addict. Although mobile phones are convenient to people, their negative impact is becoming more obvious. College students with mobile phone addiction have poor control ability (Wang et al., 2015). They may spend much time on “interaction” with the mobile phone, limiting the time to bear the responsibilities of their daily life. The higher the degree of mobile phone addiction, the greater the likelihood that students' academic performance will decline (Çağan et al., 2014). Excessive use of mobile phones is prone to problems such as ear pain, headache, sleep disorders, irritability, auditory hallucinations and other physical and mental health problems (Sahin et al., 2013; Subba et al., 2013).

When the respondents were asked about their suggestions to better implement Modular Distance Learning in teaching science after the pandemic, here are their answers:

a. Don't Let Go of the Tech We Used

“Though the pandemic forced us to use technologies we never really used in the educational setting, I realized that these technologies can greatly help improve the teaching and learning process even in face-to-face classes especially that we are dealing with the Gen-Z, the tech-native generation.” (P1)

“During the pandemic, I learned to navigate new apps that are essential in meetings and conferences also in creating better slides, and perhaps lessons. These I think new learned skills will make me a better teacher.” (P2)

b. Provide Enhancement Activities

“It's not enough that we just let them answer the modules, there should be enhancement activities or interventions to be conducted to follow-up and facilitate learning.” (P5)

“If students cannot read, we cannot expect them to understand science and answer the activities correctly, so that should be given premium.” (P3)

c. Redefining Assessments

“Over the pandemic, I see how traditional assessment which used multiple choice could easily fall prey to academic dishonesty. So, as teacher, I transitioned to essays, and portfolio assessment which I think better gauge student's learning.” (P4)

“We should not create assessments that are lower-order-thinking because it is very prone to cheating.” (P2)

“Our assessment must be authentic if we really want to know the real progress of the students.” (P1)

d. Accessibility and Equivalency

“We see the disparity of the well-off and the poor learners during the pandemic. Due to lack of resources such as internet connection and gadgets, our learners in the poverty-line fall behind due to inaccessibility. The government should address this to better implement MDL”. (P3)

“Those students who have access to the internet have more advantages over those who didn't. We can expect those learners who can surf the net to have better answers in the activities over those who rely on self-studies.” (P4)

“We should infuse technology in implementing MDL for better implementation. On this note, every learner has to be given the gadget and facilities they need.” (P2)

In a study entitled, *Healing, Community, and Humanity: How Students and Teachers Want to Reinvent Schools Post-COVID*, the pandemic scenario has brought a new vision for the education system stating that the tumultuous changes in schooling gives an opportunity for ongoing reflection and reinvention.

This revamp is not solely for the teachers to equip themselves with technical skills in operating gadgets and using learning management applications so they can meet the demand of the Z-generation and think of better strategies on how to make learning possible amidst distance, but also for the educational system as a whole to come up with concrete and effective plans for all.

Conclusion

The following are the conclusions of the study: (1) Modular distance learning has caught off guard Science teachers in the division of Valencia City both the novice and the seasoned ones. Despite years in service, they find this 360° shift in the educational landscape stressful. In the return of face-to-face classes, another set of adjustments and experiences are insight. (2) The result shows that three themes emerged in the experiences of secondary science teachers in the early stage of post-pandemic education with 5 sub-themes namely; contrasting teaching pedagogy, deteriorating academic achievement, and behavioral challenges. The sub-themes include; teaching science in MDL is monotonous while face-to-face is boundless, substandard learning transfer and learning gap, declining reading skills, academic dishonesty, and apathy among learners. Teachers are in unison of expressing dismay on the negative effect of MDL in student's learning, however, they are not surprised about it. (3) According to these teachers, post-pandemic education should provide enhancement activities for the learners to address the huge learning gap especially on the alarming numbers of non-readers, redefine assessment to eliminate academic dishonesty, utilize the new acquired skills in navigating educational apps and learning management systems to maximize its use in teaching and learning, and for the government to take action on solving longstanding educational inequities.

While the nature of the qualitative study is limited and cannot be generalized, the findings offer insights into the experiences of the secondary science teachers in the early stage of post-pandemic education. Based on the conclusion, the following recommendations are made: (1) Even non-language teachers such as Science Teachers should be provided with training to enhance their competence with focus on remedial reading, numeracy, and new teaching strategies that are engaging in the new normal setting. (2) The learning recovery strategy should include comprehensive reading interventions including the development of suitable reading materials for different reading levels. (3) Enhancement activities should be established to facilitate learning and reduce the gap. (4) Assessment must not be limited to multiple choice but more on performance-based and authentic assessment. (5) Schools should have equal access to internet for the teachers to continuously harness their skills in integrating technology in their teaching.

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