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Plight of Science Students Learning through Offline Modality

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Abstract— *The study explored the lived experiences of high school students learning Science subject through an offline modality during the post-pandemic period. Specifically, it examined the difficulties encountered and the coping strategies in handling the subject. It also presented the students' aspirations on their predicaments as well as their perceptions of the use of offline modality in learning Science. A qualitative research design using phenomenology was adopted. Twenty participants from junior high school of Badas National High School were selected. Data was collected through in-depth interviews and focus group discussion and analyzed using thematic analysis. Results indicated that students experienced challenges, including difficulty with independent modular learning, lack of instructional clarity and support, and reduced engagement and depth of understanding. To manage these challenges, students adopted coping mechanisms such as employing effective self-management and resource utilization, reliance on social support systems, and seeking contextualized and accessible learning materials. Despite these constraints, students expressed aspirations to develop real-world thinking skills, acquire greater learning autonomy, and improved access to learning resources. Students also perceived the use of offline modality in learning science subjects as recognition to offline learning benefits and catalyst of blended learning. The findings of this study underscore that offline learning modality in science education remains a critical concern within the educational process and requires targeted interventions to enhance student outcomes.*

Keywords— *Lived Experiences; Offline Modality Learning; Science.*

I. Introduction

Learning Science requires competencies that encompass attitudes, values, and beliefs that enable learners to develop their efficiency, flexibility, and self-organization in learning. This learning is the outcome of a rigorous educational process that involves acquiring, applying, and assessing knowledge under the teacher's guidance. Nevertheless, what happens if the students are learning without the actual facilitation of a teacher?

In the Philippines, Science is one of the major academic subjects taught in elementary and secondary education. However, some students are not interested in learning Science. Based on the findings of the research of Bernardo et al. (2008) the following are the students' perceptions of science classes in the Philippines: inadequate Science curriculum; poor preparation of teachers in terms of science content and pedagogy; the inefficient administration of the delivery of Science education, and even the lack of a Science culture in the country.

Since the spread of the Coronavirus Disease 2019 (COVID-19), Department of Education (DepEd) ordered the development of a Basic Education Learning Continuity Plan (BE-LCP) as an intervention to respond to the basic education challenges brought about by the health crisis (DepEd Order No. 12, 2020). And despite its amendment, DepEd still implements distance learning in case an emergency or disaster occurs (Amendment to DepEd Order No. 34, Series of 2022, 2022). These orders introduced various learning delivery modalities aside from traditional face-to-face learning, wherein enrolled students will rely more on their own pace of learning. And acknowledging that students struggle to understand the context taught even in traditional face-to-face learn (Lodge et al., 2018); how much more if there is no actual facilitation of the teacher? This scenario is true, especially for those students whose parents are not capable of providing them supervision in learning (Đurišić & Bunijevac, 2017).

In Badas National High School (BNHS), some students unfortunately do not have a family member who can assist them in learning or even owning devices such as mobile phones that could aid them in searching for lessons through the internet. This situation is an additional problem for the students to learn the competencies easily. Consequently, since they are learning outside the traditional learning modality, they later develop into uncertain learning. In this case, the acquisition of the required learning competencies is at risk.

Considering that the challenges of delivering quality education impact the student's learning outcomes, it becomes vital to discover and contribute information concerning the offline modality learning phenomenon since studies related to this topic are still limited.

II. Research Questions

The purpose of this phenomenological study is to identify the difficulties of students learning the Science subject. The specific study's research questions were as follows:

1. What are the difficulties experienced by the students in learning the Science subject through offline modality?
2. What are the coping strategies of these students in learning the Science subject through offline modality?
3. What are the aspirations of these students in learning Science subject through offline modality?
4. How do students perceive the use of offline modality in learning Science during the post-pandemic period?

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III. Methods

Research Design

This study employed the phenomenological qualitative research method, a design of inquiry, in which the researcher defines the lived experiences of the individuals about a phenomenon as defined by participants (Wertz, 2010 citing Giorgi, 2009). The qualitative approach was suitable for this study since this investigation focuses on the problems faced by the students learning Science subjects through offline modality. This study also includes the aspirations of these students.

In addition, the researcher was engrossed in providing a thorough understanding ascribed to the circumstances and looking at the individual practices in learning Science through offline modality, which a quantitative study could not meet (Mcleod, 2019). Thus, this study utilized a phenomenological approach that is idyllic at carrying to fore sensitive issues since it attempts to set aside predispositions and is predetermined with the expectations about human experiences, feelings, and responses to a particular situation. Therefore, phenomenology is the direct examination and account of phenomena as deliberately experienced by people living those experiences.

Research Participants

The participants in this investigation all came from the Badas National High School. The researcher intentionally hid the names of the participants as well as those of the grade level to avoid dubious matters being faced by them. In addition, the researcher gave each participant a code name so as not to disclose their identities. All of them are Junior High School students: ten with honors and ten non-academic performers. For purposes of this investigation, the age and sex of the participants did not matter in the selection provided he or she is a student who experienced learning Science subject through offline modality, willing to participate, and can communicate. It means that participants were selected because they meet the preselected criteria relevant to the research question (Mack et al., 2005). Thus, the researcher believed that they could provide comprehensive data and answer the research questions.

Data Gathering Procedure

To ensure the smooth execution of this study, the researcher followed a series of important steps: asking consent for the conduct of the investigation and conducting the interview/discussion. Initially, approval was obtained from the University Research Ethics Board of Davao Oriental State University, followed by endorsement from the Dean of the Faculty of Advance and International Studies. Formal requests were then sent to Schools Division of the City of Mati and the School Principal of Badas National High School for permission to conduct the study. Parents' consent and students' assent was sought in accordance with ethical principles, ensuring they understood their voluntary participation rights, with minors requiring parental consent. The researcher utilized an in-depth interview to gather comprehensive information about the thoughts and behavior of the students and focus group discussion to come up with rich interaction and sharing of ideas. This was employed to allow the participants to remember their experiences that they would not have probably recalled and were not revealed by others. The interviews took place in different places, while the focus group discussion was in a place where all the participants were convened. The researcher recorded along with a notebook to record notes from the interview and recorded the meeting during the focus group discussion. The researcher also asked the participants to sign the consent and secured their approval to record the interview.

Data Analysis

The researcher analyzed the data gathered using descriptive and thematic approaches and interpret patterns through the themes that occurred after collecting the data through interviews. The researcher transcribed the notes of the focused group discussion and key informant interviews to create a common logic of the material in analyzing the data. In addition, the researcher also employed Miles and Huberman's (1994 cited in Suri, 2011) guide steps of analyzing data for a qualitative inquiry. First, data reduction was carried out to make it more readily accessible and understandable (Berg, 2004). The data reduction enabled simple and efficient communication findings. This paring and filtering of information often is termed as thematic analysis. Second, data display was employed to enable the drawing of conclusions. Data display helped identify why a system is or is not working well and what might be done to change it. It also allowed the researcher to assume from the data enough to begin to extricate systematic patterns and interrelationships. Lastly, drawing of conclusion and verifying it in the data analysis process. This allowed the researcher to consider what the analyzed data meant and to gauge their implications for the questions at hand. With this, the researcher verified which is inherently linked to drawing of conclusion. This entails revisiting the data as many times as necessary to validate these emergent conclusions.

Ethical Consideration

The researcher employed (Mack et al., 2005) guidelines of ethical research: respect for persons, beneficence, justice, and respect for the community. The researcher guaranteed to have their expressed permission and consent before the in-depth interview and the focus group discussion audio recorded. When the participants fully understood the research and his/her rights as participants, they were asked to sign and provided a copy of the written consent form which contains the list of contact information for study officials to whom questions about the research may be directed. The researcher also made sure that the participants' privacy and confidentiality are safe by pledging to the participants that the experiences revealed are for research purposes only and the use of the participants' real names was avoided. In addition, the researcher ensured minimizing the risks to the participants through emphasizing great confidentiality and informing them in writing that they have the right to leave the study at such a

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time that they feel any sense of insecurity or uncertainty about its purpose.

Also, the study involved participants from various grade levels. Recognizing that students have unique learning styles and may be hesitant to share their experiences, the researcher made every effort to create a safe and welcoming environment. This reassured the participants that their responses were treated with understanding and non-judgment, and that the information was used to gain insights into the research context.

Furthermore, the researcher guaranteed the research appropriateness and assured it through data satiety in which the point of data collection will no longer bring other insights to the research questions. After the conduct of the investigation, the researcher went back to the participants to share the outcomes and the insinuations of the study. In this case, the researcher discoursed accordingly the challenges that the students' learning the Science subject through offline modality.

IV. Results and Discussion

Contained in this chapter are the experiences gathered from the participants collected through the in-depth interviews and the focus group discussion which are presented through detailed presentation. Presented also the discussion or the results given in this chapter.

Difficulties Experienced by the Students in Learning the Science Subject through Offline Modality

To produce a complete and inclusive discussion of the difficulties experienced by students, the following sub-questions were asked to them during the in-depth interviews and the focus group discussions: *What is your idea regarding Offline Modality Learning (e.g. modular and online class (synchronous/asynchronous)? What are the strengths you have encountered in learning Science through offline modality? What are the lessons in science that you consider to be the most difficult to learn? Why did you consider this to be?*

Based on the answers of the participants from the in-depth interviews and the focus group discussion, the participants' answers revealed three major themes which surfaced out of the in-depth interviews and the focus group discussions. These are the difficulties identified by the students learning Science through offline modality: first is the struggles with independent modular learning; next is lack of instructional clarity and support; and lastly is the decline in engagement and learning depth.

In the first major theme, it was evident that students learning science through offline modality have difficulties because they find it hard to learn independently. Evidently, learning a subject independently comes next with self-discipline. Unfortunately, the other participant explained that he is not disciplined enough in learning on his own. While some participants clearly expressed their indifference in learning the subject. They displayed their lack of interest in the subject or even trying to walk extra miles to learn on their own.

If students have struggles with independent modular learning, this must be an alarming situation for all school stakeholders. If students themselves could not care less about the subject they must learn, how can they acquire knowledge about the subject? This only means that this could be a possible failure of offline modality learning. If students find it hard to learn on their own, this only means that they could just disregard the importance of learning science.

This result is in line with the finding of Betlen (2021), which presented difficulties with Modular Distance Learning (MDL) such as offline modality caused by absence of teachers and their classmates who remind them of their tasks. This supports the idea that students find independent learning difficult because they prefer learning with someone, they could seek help. He also added that in MDL, the chances of getting distracted and losing track of deadlines are high. In other words, self-discipline is indeed important to keep learning on track and meet the subject requirements on time.

Thus, decreased focus, poor time management, and reduced academic performance of the students due to the absence of teachers and classmates who typically provide guidance, reminders, and accountability are some of the factors that affect students in learning independently through offline modality.

The next major theme that surfaced out from the participants' responses both in the interview and the focus group discussion is the lack of instructional clarity and support. This is another identified difficulty of the participants as they learn science through offline modality. A participant presented her struggle in looking for support and resources in learning the subject. Other participants also revealed that other instructional resources are essential needs of the students, and they expect their teachers to provide more resources to make the lesson more comprehensive and meaningful. While the participants said they try their best to look for other resources about their lesson on the internet, not all the time that they have access to the internet and some of them reside in places without internet connection or even cellphone signals. Some also revealed that they do not have someone to ask at home whenever they need guidance.

The second theme is lack of instructional clarity and support. While this is not new from the DepEd scenario, it is an immense problem for these students in learning science through offline modality. Imagine learning a subject without enough resources and support. This entails multiplied effort on the part of the students since they need to seek additional resources and support that will provide them with comprehensive information about the topic. This must be looked at carefully and help must be extended to students, especially those who do not have enough support systems at home.

Similarly, Pe Dangle et al. (2020) stipulated that the major concerns in the implementation of the MDL were insufficient budget in the making and delivery of modules.

The third major theme which came out of the question on students' difficulties in learning science through offline modality is the decline in engagement and learning depth. Participants faced a dilemma because they said that in learning

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science, they need to understand the lesson without further discussion. Yet, some of them cannot comprehend it.

It was only with deep sighs that one of the participants expressed his frustrations in learning science on his own. He was true in accepting his limitations as a slow-paced learner. It is at the same disposition that the participants expressed their difficulty in learning science through offline modality.

It is understandable that distance learning implementation is DepEd is challenging. While DepEd considered it as a learning continuity action, the real setting seeks to be noticed. Some of the products of this distance learning have resulted in an issue of illiteracy.

In the same way, Rotas and Cahapay (2020) stressed in their study that the sudden migration from traditional on-campus learning to distance learning has put students at a great disadvantage. Hence, this may influence the students' academic performance.

Coping Strategies of Students in Learning the Science Subject through Offline Modality

The following sub-questions were asked to provide an in-depth understanding of this research question regarding the coping strategies used by the students in learning science through offline modality: *What are your coping techniques in dealing with the difficulties you have encountered? What do you think can be done to help students overcome these difficulties?*

Response revealed three major themes on coping strategies used in overcoming the difficulties encountered by the student in learning science through offline modality. These are effective self-management and resource utilization; seeking and utilizing support systems; and seeking contextualized and accessible learning materials.

The first coping strategy, which emerged during the interview and the focus group discussion, used by the participants is effective self-management and resource utilization. It is a good thing for the students to know how to handle their time and resources when facing challenges in learning. This is best especially for students who are learning independently or learning without any guidance from anyone. Similar practice holds true for one of the participants as well.

It is good to know that participants did not limit themselves in using one resource and managing their time in learning the subject through offline modality. They have devised ways and strategies which they effectively used to cope without harm physically and psychologically. The participants sought the aid of utilizing other learning resources to broaden their knowledge and understanding about a certain topic. Also, managing their time in doing their tasks is a sign that they become more independent and disciplined in handling their studies without constant supervision.

The coping strategy used by the participants is clearly aligned to the study of Kazmer (2000) in which he discussed that students call for some solutions through relying on available tools for support and changing their own living and learning patterns. As supported by Nyatsanza & Mtezo (2013 citing Folkman & Lazaruz, 1988), the concept of coping is defined as the changes in a cognitive and behavioral effort to manage specific demands as the exceeding resources of an individual. Thus, adapting both mentally and behaviorally to handle challenges that feel overwhelming or beyond one's current resources is a way to cope with difficulties at hand.

The second major theme generated by the participants' responses is seeking and utilizing support systems as coping strategy in their difficulties encountered in learning science through offline modality. Seeking and utilizing support systems has been a common strategy for students in overcoming almost all difficulties experienced in the learning process. Due to the availability of support systems from school and at home, it is an immediate source of solutions for some of the students' learning difficulties. Thus, seeking and utilizing support systems has a lot of advantages, especially when they are available at home.

The second strategy used by the participants is common to most of the students. However, not all students have someone they can rely on at home. Some students are facing challenges because despite having the presence of their parents or relatives at home, they are also illiterate or lacks knowledge about the lesson. Therefore, additional effort is required for the students to seek help outside their home.

This strategy conforms to the study of Nyatsanza and Mtezo (2013), stipulating that one of the coping strategies used by the students in response to stressful experience in learning is seeking social support. In addition, students experience less stress in their studies when they connect with friends and family to talk and get motivated (Rotas & Cahapay, 2021).

Moreover, Kazmer (2000) stipulated that students also rely on available people to overcome stress in learning. He also added (citing Chidrambaram & Bostrom in 1996) that support is needed to help the students adapt to the environment and begin to engage. Thus, students are more likely to adapt and participate actively when they receive the support that they need in a new learning environment.

The third major theme which came out from the participants' responses from the questions on coping strategies in learning science through offline modality was seeking contextualized and accessible learning materials. It is best to find out the students do not just settle for the provided modules but also seek additional references to use. In fact, one participant was sure in her answers when asked about her coping strategies to overcome her difficulties in learning through offline modality. Participants also put themselves responsible for acquiring resources related to their lesson.

Seeking contextualized and accessible learning materials provides the participants with the satisfaction of the learning process. They feel responsible for their own learning. A lot of students struggle with understanding a lesson on their own but seeking contextualized and accessible learning materials could help them overcome their difficulties in learning through offline modality.

The investigation of Kazmer (2000) supports the findings of this study since he mentioned that students call for some solutions through relying on available tools. Thus, participants actively seek solutions by making the most of the tools and resources available to them.

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Aspirations of Students Learning the Science Subject through Offline Modality

To give a comprehensive picture of the research question regarding the aspirations of students learning science subject through offline modality, the following sub-questions were asked to the participants during the interview and focus group discussion: *As a student, what are your goals in learning the Science subject aside from the lessons being taught? Based on your experience, what can you suggest or advise on to overcome the difficulties you have encountered? Do you have any wishes as you deal with the difficulties you have encountered? What are those? And how do you think you can achieve this?*

From the participants' responses, insights and concepts were generated and these were formed into three major themes: first is acquiring real-world thinking skills; second is acquiring learning autonomy; and lastly, accessible learning resources.

The first major theme generated was to acquire real-world thinking skills. While students have identified several difficulties in learning the subject through offline modality, they have shown their eagerness to learn. Aiming to develop critical thinking and real-world skills had been their goal in learning despite the situation at hand. In other words, practical learning had been the goal of the participants. Also, they had expressed that their future interests also affect their way of learning the subject in the present.

It was with honesty and clarity that the participants expressed that their foremost aspiration was to develop critical thinking and real-world skills. Despite the challenges at hand, the participants are leaning forward to becoming rational thinkers not just as students but also in real-life situations.

In the study of Kaptan and Timurlenk (2012), it was emphasized that Science is considered the most unique subject because it aims to create future scientists rather than future citizens. Thus, it promotes performance learning, which is extrinsically motivated rather than mastery learning that also affects students' engagement. In other words, students are really committed not just to their academic performance, but also to their personal preferences which will help them in their future endeavors.

According to Rull (2014), Science is valued by society because the application of scientific knowledge helps satisfy many basic human needs and improve living standards. Hence, students aim for the development of their critical thinking and real-world skills.

The second major theme which emerged from the participants' responses is their aspiration in acquiring learning autonomy. They expressed that this is truly a need since they are made to learn on their own without the physical guidance of their teacher. One participant said that this would be a great help for them as they are learning outside the classroom. Participants had identified that utilizing effective study habits is a necessity in learning science through offline modality.

Students were adamant in learning the subject. Since they are learning without the supervision of a teacher, they were very specific in their desire to learn the lessons in science subject through offline modality independently utilizing effective learning strategies. This is a very good note since we can see that learners are willing to adapt to the learning environment they are experiencing. This only needs a positive response also from their respective homes. Appropriate guidance at home should be provided not only by these students but for all learners even through a face-to-face learning environment.

Similarly, the study of Pe Dangle et al. (2020) DepEd believes that parents and guardians can perform various roles in MDL such as being home innovators. Hence, in MDL, learners are encouraged to learn independently, wherein the acquisition of better self-study or learning skills among students is achievable. Moreover, Nardo (2017) supported the claim, since students are learning how to learn on their own and that helps them become empowered. In other words, students develop a sense of responsibility in accomplishing the tasks provided in the module.

The last aspiration of the participants is that they will be provided with the necessary learning resources that would undeniably aid them in learning the science subject through offline modality. Lacking learning materials in understanding a concept is truly a challenge.

Learning resources are necessities in any educational setting. The participants in this study are not exempted from this reality. In fact, they feel the need for more learning materials. To lessen the burden they are experiencing, they hope to be provided with more learning materials aside from just a module that they could access immediately. This is understandable since they are having difficulty in learning the subject and they do not have easy access to the learning resources they need in learning outside the classroom, especially for those who do not have internet access.

Consequently, Kazmer (2000 citing Chidrambaram & Bostrom in 1996) highlighted that as a student entering a new learning environment support is needed to help them adapt and available tools for support are reliable for them. In other words, it is important to provide sufficient and comprehensive learning resources to boost students' academic engagement.

Students' Perception in the Use of Offline Modality in Learning Science during Post-Pandemic Period

The following probing questions were used to stimulate participants' thoughts about their perception in the use of offline modality in learning science during the post-pandemic period: *How do you feel about learning science offline even after the pandemic? Do you think it is still efficient and effective? Why? How does learning science offline now compare to how you learned science before the pandemic? What changes have you noticed in your learning experience? Do you think that learning offline post-pandemic offers advantages compared to how you learned science before the pandemic? If yes, what are those? Does offline modality learning during the post-pandemic have disadvantages in learning science compared to before the pandemic? If yes, what are those?*

Based on the answers of the participants from the in-depth interview and focus group discussion, the participants revealed

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two major themes, namely: recognition of offline learning benefits and catalyst of blended learning.

The first major theme is the recognition of offline learning benefits. It was evident that students learning science through offline modality learning even after the pandemic appreciates the accessibility, authenticity, and practicality of their learning. One participant confidently shared that she found doing her tasks and learning the lessons outside the classroom effective for her.

Evidently, learning does not just evolve inside the four corners or walls of the classroom. According to Llego (2020), offline modality is a modified instruction used for self-learning applicable to the learners. In the Philippines, offline modality learning is commonly used by all public schools because parents also prefer it, and it aid those students living in rural areas where internet is not accessible for online learning (Bernardo et al., 2008). Hence, offline modality learning addresses not only class suspensions brought by any sort of crisis but also the issues related to internet accessibility.

However, some of the participants are not in favor of utilizing offline modality learning after the pandemic. This result affirms to the study of Pe Dangle et al. (2020) who firmly disagree with the effectiveness of the offline modality. According to him, since learners are learning independently, some still cannot easily follow instructions in the module. Some of the learners cannot finish their modules on time because they mostly spend their study time teaching their siblings or helping their parents in the field. Also, in the worst case, parents lack the knowledge to assist their children. Thus, submission of modules was often late and most of the answer sheets were blank. In other words, students experience problems in their studies due to work and family demands.

Nevertheless, despite the negative connotations about offline modality learning, Nardo (2017) believes that offline modality learning encourages learners to study independently, wherein the acquisition of better self-study or learning skills among students is achievable.

The next major theme that surfaced out from the participants' responses both in the interviews and the focus group discussion is that the use of offline modality is one of the catalysts of blended learning. This is another identified perception of the students in learning science through offline modality after the pandemic.

As the participants revealed, the use of offline modality in learning from pandemic until post-pandemic period is advantageous. It opens the door for the possibility of continuing learning despite critical periods and even outside the classroom environment. This result proves the efficacy of DepEd Order No. 18 series of 2020, that schools must implement learning continuity plans which introduce various learning delivery modalities aside from traditional face-to-face learning. Thus, it is not just the offline modality learning is applicable in addressing class suspensions, but to also consider all forms of modality learning such as online classes.

V. Conclusion and Recommendation

Learning science through offline modality revealed multi-faceted difficulties faced by the students, especially during COViD-19 pandemic. The data gathered from interviews and focus group discussions identified three main challenges experienced by the students, namely: struggles with independent modular learning; lack of instructional clarity and support; and decline in engagement and learning depth. Participants openly shared that studying on their own led to feelings of isolation, reduced motivation, and a greater risk of academic failure. This supports the study of Rotas and Cahapay (2020) that states, sudden migration from traditional on-campus learning to distance learning has put students at a great disadvantage. Therefore, this shows that distance learning truly underscores the importance of human interaction and support in the educational process, which was starkly limited in the offline modular learning setup.

However, students employed various strategies to cope with these difficulties, which also highlights their resilience and adaptability to the situation. Key coping mechanisms include effective self-management and resource utilization; seeking and utilizing support systems; and seeking contextualized and accessible learning materials. These strategies showcased students' way of navigating available resources to help them overcome the difficulties at hand. This supports the study of Kazmer (2020) that states, students adjust to a learning environment where they tend to rely on available people and tools for support. These strategies not only reflect their desire to learn but also their determination to succeed despite systemic and logistical limitations. Also, this supports Moore's Transactional Distance Theory (1997) that it is important to consider the quality and the extent of interaction to which it is effective in enabling the resolution of the learning problems the distance learner may experience, be it through learner-content interaction, learner-learner interaction, or learner-instructor interaction.

Furthermore, the aspirations of the students in learning science through offline modality illustrated a commendable desire to acquire real-world thinking skills; acquire learning autonomy; and have accessible learning resources. Many viewed the challenges they encountered as opportunities to grow intellectually and independently. They associated learning science with future academic and professional goals and even expressed a strong wish for more accessible and comprehensive learning resources. This affirms the study of Rull (2014) stating that science is valued by society because the application of scientific knowledge helps to satisfy many basic human needs and improve living standards. This highlights the students' potential and their willingness to transcend the limitations by offline learning.

Additionally, students expressed nuanced perceptions of learning science through offline modality during the post-pandemic period. Despite the difficulties encountered, the participants recognized offline learning benefits and considered it as a catalyst of blended learning. While some appreciated its practicality and accessibility, especially in rural and under-sourced areas, others emphasized the disadvantage of limited support and increased domestic responsibilities. This affirms the concept of Llego (2020) emphasizing that MDL does not differ from traditional face-to-face learning. Instead, it could serve a valuable component in a blended

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learning approach, promoting educational continuity during crisis as the goal of DepEd Order No. 18, series of 2020, stipulating the implementation of a learning continuity plan in basic education.

Ultimately, this study emphasizes the need for an inclusive, flexible, and resource-supported learning environment that responds to students' diverse needs. While offline modality has its merits, it should be complemented with strategies that promote interaction, provide adequate instructional support, and offer rich learning materials. The insights from this endeavor serve as a call for educators and policymakers to design learning systems that not only address educational gaps but also empower students to take charge of their learning journey.

Anchored on the results and findings of this research endeavor, the following practices in various areas and future research endeavors are posited:

First, in view of the results of investigations, DepEd may revisit the Basic Education Learning Continuity Plan, especially in its development and implementation in all schools of the country and provide appropriate actions for the needs of the direct players of the teaching-learning processes. This may include the conduct of assessments that would identify the issues that should be addressed with regard to the shifting of delivery mode of education in case of emergency that requires cancellation and/or suspension of classes to ensure the no disruption of classes policy of DepEd.

Second, in view of the students' need for resources, providing sufficient and comprehensive learning materials can aid in creating a more meaningful learning process. Provision of resources readily available both online and printed will create a more inclusive learning environment for the students since not all can easily access online resources.

Third, since this endeavor is only generalized to the study's participants which are students learning the science subject through offline modality of Badas National High School, it is best to widen the perspective of results by looking at the research problem in different contexts and scenarios. A study can be done for other schools of all grade levels in the whole division of the City of Mati, not only for learning science but in all subjects, to find out if they are also experiencing the same difficulties in learning. The same study could be conducted with other schools' divisions in region XI or other regions in the country to find out if this is indeed a national phenomenon and gain a wider perspective on the difficulties students experience in learning the subject. This could also be done after some time with the same participants to find out if there are changes in their perspectives and dispositions in learning the subject. And future studies could be conducted to find out the views and perceptions of the teachers in the same research problem since this study is focused on seeing the students' eyes and perceptions.

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