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Research Article

Modular Distance Learning: Perceived Challenges and Strategies of Secondary Science Teachers in Mandaon District, Masbate, Philippines

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ABSTRACT

This study aimed to examine the challenges encountered by science teachers in implementing modular distance learning and the coping strategies they employed to address these challenges. Using a mixed-method research approach, data were collected through a survey of thirty-eight Junior High School science teachers in Mandaon District in Masbate, Philippines. Findings revealed that the implementation of modular distance learning presented various challenges, including technical problems, distribution and retrieval difficulties, student utilization issues, and unreliable assessment results. To cope with these challenges, teachers employed various strategies, including attending ICT training, asking for technical assistance, developing income-generating projects, and utilizing differentiated instruction and targeted assessments. The study also highlights the need for more parental involvement, adequate funding for schools, clear instructions and guidance to students, and proper monitoring of student performance. Overall, the study suggests that with effective implementation and support, modular distance learning can be an effective mode of instruction, particularly during times of crisis.

Keywords: *Challenges, Coping strategies, COVID-19 pandemic, Modular distance learning, Self-learning modules*

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Introduction

The role of teachers in shaping the lives of students through quality education is crucial. However, due to the COVID-19 pandemic, the educational landscape has undergone significant changes, and the Department of Education (DepEd) in the Philippines has implemented a new mode of instruction called Modular Distance Learning (DepEd, 2020). This mode of learning utilizes self-learning modules (SLMs) in print or electronic format, containing various tasks and learning activities anchored to the most essential learning competencies set forth by DepEd (Anzaldo, 2021). The COVID-19 crisis has forced most education systems to adopt alternatives to face-to-face teaching and learning, with many moving activities online to enable instruction to continue despite school closures (OECD, 2020). The shift to modular distance learning has presented numerous challenges for school personnel in delivering basic quality education (Bagood, 2020). In response, the DepEd leadership has been seeking solutions and capacitating teachers and school heads to become more effective in this new mode of learning.

Bagood (2020) stated that teaching personnel and Education Program Supervisors in the Philippines have been preparing modules since May 2020 for all subjects and grade/year levels following the Most Essential Learning Competencies. These self-learning modules include pre-tests, discussions, and evaluation/assessment and are distributed to all learners along with the modular learning class schedule (Anzaldo, 2021). Public school teachers in the Philippines have been following this instructional modality. Teachers play a vital role in the continuous delivery of quality education amid the pandemic.

According to Lapada et al. (2020), teachers are highly aware of the presence and consequences of the COVID-19 pandemic. Despite the threats, they continue to serve by formulating modules as a learning guide for students (Treceñe, 2022). Teachers have become facilitators in the development of their students, both as members of their community and society (Martineau et al., 2020). However, teachers have also been confronted with numerous problems in discharging their duties and responsibilities in delivering instruction amidst the COVID-19 pandemic (Agayon et al., 2022; Castroverde & Acala, 2021; Treceñe, 2022). Malipot (2020) stressed that teachers have experienced a myriad of problems with modular distance learning. As front liners in the educational system, they have undergone various training and seminars to be better equipped in delivering education amid the COVID-19 pandemic (Bagood, 2020).

This situation is unlikely to ease soon, and teachers must adapt and strategize to cope with the various challenges associated with the new mode of learning (Agayon et al., 2022). Although several studies have examined the challenges and coping strategies of teachers in implementing modular distance learning (Agayon et al., 2022; Butial et al.; 2022; Castroverde & Acala, 2021; Dangle & Sumaoang, 2020; Malipot, 2020; Talimodao & Madrigal, 2021), none have explored the plight of junior high school science teachers in coping with the imminent challenges and problems in the successful implementation of the new normal mode of learning. Consequently, this study investigates the challenges and approaches experienced by Junior High School Science teachers in Mandaon District in Masbate, Philippines, to be aware of their challenges encountered, strategies, and recommendations in the successful implementation of modular distance learning. These findings can be used in designing appropriate policy and program interventions for teachers, parents, and students.

Research Questions

Generally, this study attempts to investigate the challenges encountered and strategies employed by Junior High School science teachers in the Mandaon District in the implementation of Modular Distance Learning (MDL). Specifically, it seeks answers to the following questions:

1. What are the challenges and how serious are they as perceived by secondary science teachers in the implementation of modular distance learning in terms of:
    a. Preparation of SLMs
    b. Distribution of SLMs
    c. Retrieval of SLMs
    d. Students' utilization of SLMs

e. Results of Assessment.

2. What strategies are employed and how effective are they as perceived by the secondary science teachers in implementing a modular distance learning in terms of:
   a. Preparation of SLMs
   b. Distribution of SLMs
   c. Retrieval of SLMs
   d. Students' utilization of SLMs
   e. Results of Assessment.
3. What suggestions can the junior high school science teachers offer to overcome the challenges encountered in the implementation of modular distance learning?

Methods

Research Design

The study employed a mixed-method research design, which is a combination of descriptive-survey and phenomenological approaches, in gathering and analyzing nuanced data. This research design combines qualitative and quantitative research methods to gain a better understanding of a research problem (Creswell, 2014), which in this case, are the challenges and strategies employed by science teachers, as well as their suggestions relevant to the successful implementation of modular distance learning.

Sampling Method

The selection of participants was facilitated through the purposive sampling method. Purposive sampling is the deliberate selection of a participant based on the qualities the participant possesses. This entails identifying and selecting individuals or groups of individuals who are proficient and knowledgeable about a phenomenon of interest (Etikan, Musa, & Alkassim, 2016). Since the study aimed to explore the plight of junior high school science teachers, they were intentionally selected to participate in the present study.

Respondents

The respondents of the study were the Junior High School Science Teachers in Mandaon District who are teaching Grades 7 to Grade 10 in public secondary schools during the School Year 2020 - 2021. The table below presents the distribution of the respondents. As shown in the table, 23 (34.2%) are from Federico A. Estipona Memorial High School, 9 (23.7%) are from Cabitan National High School, 5 (13.2%) are from San Pablo National High School, 3 (7.89%) are from Tumalaytay National High School, 2 (5.26%) are from Tagpu National High School, Cleofe A. Arce Memorial High School, Bugtong National High School, and Lantangan National High School, with a total of thirty-eight (38) respondents. Of the total respondents, 26 (68.4%) are female, and 12 (31.6%) are male. The median age is 32, with age ranges from 24 to 61.

School/Institution	Number of respondents	Percentage (%)
Federico A. Estipona Memorial High School	13	34.2%
Cabitan National High School	9	23.7%
San Pablo National High School	5	13.2%
Tumalaytay National High School	3	7.89%
Tagpu National High School	2	5.26%
Cleofe A. Arce Memorial High School	2	5.26%
Bugtong National High School	2	5.26%
Lantangan National High School	2	5.26%
Total	**38**	**100%**

Instrumentation

The researchers developed and utilized a self-reported survey questionnaire to obtain the necessary data to answer the above-stated research objectives. Typically, the questionnaire is divided into three parts. The first part consists of 5 criteria with 6 sub-criteria using a 4-point Likert scale (1=Very Unlikely to 4=Very Likely), which asked the respondents about the problems and challenges

encountered in the implementation of modular distance learning. Similarly, the second part is composed of 5 criteria and 6 sub-criteria using a 4-point Likert Scale (1=Not Effective to 4=Very Effective), which was designed to determine the strategies employed to mitigate the experienced problems and challenges. Lastly, the third part was an open-ended question to ask the suggestions of the respondents on the effective delivery of modular distance learning. To ensure the reliability of the instrument, it was pilot-tested before actual use in the study, and the resulting reliability coefficient (Cronbach alpha=0.78) is within the acceptable limit.

Data Gathering Procedure

Before the distribution of the questionnaire, the researchers secured a permit from the school heads of each target school to distribute the questionnaire to all Junior High School science teachers in the Mandaon District during the School Year 2020-2021. To ensure voluntary participation, the participants were asked to sign an informed consent form. The questionnaires were personally distributed and collected from the participants afterward. The gathered data were tabulated and analyzed in MS Excel.

Statistical Analysis

Descriptive statistics, such as the weighted mean, were used to measure the level of seriousness of the perceived challenges encountered and the effectiveness of the employed strategies by the science teachers in the implementation of modular distance learning. Weighted means were interpreted using the scale and intervals as shown in the tables below:

a. For the level of seriousness of the perceived challenges in the implementation of modular distance learning:

Scale	Range	Verbal Interpretation
4	3.50-4.00	Very Serious (VS)
3	2.50-3.49	Serious (MS)
2	1.50-2.49	Moderately Serious (S)
1	1.00-1.49	Not Serious at all (NS)

b. For the effectiveness of the employed strategies:

Scale	Range	Verbal Interpretation
4	3.50-4.00	Very Effective (VE)
3	2.50-3.49	Effective (E)
2	1.50-2.49	Less Effective (LE)
1	1.00-1.49	Not Effective at all (NE)

The teachers' responses to the open-ended question were thematically analyzed and coded using the standard procedure for thematic analysis. Following the six stages in conducting thematic analysis outlined by Braun and Clark (2006), the researchers looked for similarities and differences in participants' experiences and categorized their responses into thematic domains. The researcher manually coded similar words and phrases observed in the participants' responses.

Results and Discussion

Perceived Challenges in Modular Distance Learning Implementation

Preparation of Self-learning Modules (SLMs). Science teachers faced serious problems in the preparation of self-learning modules. As indicated in Table 1, recurring technical problems in the consistent use of printers (3.09), time constraints in the printing of SLMs burdened by other activities that require the same level of attention (2.98), and an unreliable internet connection to conduct research in preparing instructional materials such as the Learning Activity Sheets (LAS) (2.74). Teachers likewise experienced the same level of seriousness in inadequate supplies of printing materials such as inks, bond paper (2.66), and printers (2.51). Studies showed that the lack of school funding for the production and delivery of modules (Castroverde & Acala, 2021; Dangle & Sumaoang, 2020) and the availability of printing supplies and materials (Talimodao & Madrigal, 2021) extremely affect the production of adequate modules in time for distribution.

Table 1. Challenges encountered along the Preparation of Self-Learning Modules (SLMs)and the level of its severity as perceived by junior high school science teachers (n=38).

Challenges in the Preparation of SLMs	Weighted Mean	Verbal Interpretation
Very low internet connections for research and making Learning Activity Sheets.	2.74	Serious
Limited reference resources in making LAS	2.06	Moderately Serious
Insufficient time in printing SLMs due to some intervening school forms and activities to be accomplished.	2.98	Serious
Inadequate supplies of ink and bond paper	2.66	Serious
Inadequate supplies of printers	2.51	Serious
Frequently used printers arise to some technical problems	3.09	Serious
Overall Weighted Mean	**2.67**	**Serious**

Distribution of SLMs. Science teachers experienced moderately serious problems in the distribution of SLMs. As presented in Table 2, most parents and guardians do not adhere to the given schedule to get SLMs (2.94), which makes it hard for teachers to check all the submitted SLMs since some have not arrived yet. At some point, teachers had to distribute SLMs personally to those who were unable to get them in school, adding additional work to their already burdened tasks. Several factors could have contributed to this problem. As reported by Castroverde and Acala (2021), this may include parents who are unresponsive to the queries of the teachers and parents who provide inactive or incomplete contact details, which hinder open communication between parents and teachers relating to the scheduled time in the distribution and retrieval of the modules.

Table 2. Challenges encountered along the Distribution of SLMs and the level of its severity as perceived by junior high school science teachers (n=38).

Challenges to the Distribution of SLMs	Weighted Mean	Verbal Interpretation
Parents and guardians come to school on due time from the given schedule to get SLMs	2.94	Serious
Unobservant of proper health protocol standards during distribution.	1.97	Moderately Serious
Unable to follow simple instructions in getting SLMs.	2.11	Moderately Serious
Unawareness of parents and students in getting their SLMs in school.	2.17	Moderately Serious
Tedious on the part of teachers who need to distribute SLMs personally to those who are unable to get them in school.	2.02	Moderately Serious
Overall Weighted Mean	**2.24**	**Moderately Serious**

Retrieval of SLMs. Agayon et al. (2022) reveal that module distribution and retrieval are among the most recurring problems encountered by teachers in modular instruction. Similarly, as shown in Table 3, among the most common problems encountered in the retrieval of modules as perceived by science teachers in Mandaon District include incomplete submission of answered SLMs (2.83), late submission of answered SLMs (2.77), and submission of unanswered modules (2.62). This is consistent with the reports of Talimodao and Madrigal (2021) and Butial et al. (2022) that students tend to submit unanswered or partially completed modules. Alvarez (2021) stressed that several factors could have

contributed to these problems, including confusion among students on the modules, limited teacher guidance, and not understanding the module at all.

Table 3. Challenges encountered along the Retrieval of SLMs and the level of its severity as perceived by junior high school science teachers (n=38).

Challenges in the Retrieval of SLMs	Weighted Mean	Verbal Interpretation
Unanswered SLMs	2.62	Serious
Late submissions of answered SLMs	2.77	Serious
Incomplete submissions of answered SLMs	2.83	Serious
The poor condition of submitted SLMs (ex. Wet, lack of pages, others.)	2.46	Moderately Serious
Need to get it personally from the teacher in the house of students.	1.89	Moderately Serious
Overall Weighted Mean	**2.49**	**Moderately Serious**

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Table 4. Challenges encountered along the Students' Utilization of SLMs and the level of its severity as perceived by junior high school science teachers (n=38).

Challenges to Students' Utilization of SLMs	Weighted Mean	Verbal Interpretation
Students were unable to comprehend SLMs alone.	2.63	Serious
Students did not take it seriously in answering their SLMs.	2.97	Serious
Students have a hard time focusing to answer their SLMs due to some intervening factors such as household chores, working while studying, and attending to siblings and other family members.	3.03	Serious
Students lack learning references and materials to answer their modules	3.03	Serious
Students are not updated on the information given by the teachers regarding SLMs.	2.51	Serious
Overall Weighted Mean	**2.83**	**Serious**

Students' Utilization of SLMs. Science teachers have experienced serious problems with the students' utilization of SLMs as shown in Table 4. As mentioned earlier, students tend to submit unanswered and incomplete modules. As gleaned from Table 4, students are having a hard time answering the modules due to intervening factors such as doing routine household chores, working part-time, and attending to younger siblings (3.03). Students

also lack references and other materials necessary to answer problems provided in the modules (3.03). Moreover, students are not taking it seriously when answering the summative assessments and other activities given in the modules (2.97). Some students submitted SLMs unanswered because they find it hard to comprehend the instructions in the modules (2.63). The same problems were also observed in the studies of Agayon et al. (2022) and Alvarez (2021), where students had trouble understanding and comprehending the instructions provided in the modules, thus submitting unanswered assessments. These problems not only pose a challenge to teachers' responsibility in monitoring students' performance but also a struggle for teachers seeing a student not learning anything from school amidst the pandemic (Castroverde & Acala, 2021).

As revealed by Lau and Lee (2021), these problems persist because students tend to show no interest in completing tasks given in modular instruction, and they also juggle with home environment-related constraints. Bacomo et al. (2022) revealed that students' positive attitudes toward modular distance learning strongly influence their academic performance. Additionally, parents cited a lack of time and sufficient technical knowledge to help their children with distance learning, and this is worsened by the economic and financial constraints caused by the COVID-19 pandemic (Dong et al., 2020; Kintanar et al., 2021). Conversely, students have been shown to perform better in modular distance learning when their parents teach and motivate them accordingly (Idulog, 2022).

Table 5. Challenges encountered along the Results of Assessment from SLMs and the level of its severity as perceived by junior high school science teachers (n=38).

Challenges to Results of Assessment from SLMs	Weighted Mean	Verbal Interpretation
A very low score in the given assessment	2.91	Serious
Unanswered assessment	2.51	Serious
Similar answers with their classmates	2.54	Serious
Difficulty in submitting the performance-based assessment	2.74	Serious
Unreliable score in the given assessment	3.09	Serious
Overall Weighted Mean	2.76	**Serious**

Results of Assessment from SLMs. As revealed in Table 5, Junior High School Science Teachers encountered serious problems relating to the results of students' assessments in modular distance learning. Particularly, students tend to provide unreliable scores on the given assessments (3.09), several students also obtained very low scores on the given assessment (2.91), and some had trouble submitting performance-based assessments (2.74). Interestingly, several students submitted unanswered tests (2.51). Teachers suspect unreliable scores on the given assessments simply because they would never know if the students themselves are answering the assessment part or the more knowledgeable others, such as parents, guardians, older siblings, or tutors.

Castroverde and Acala (2021) revealed that teachers find it difficult to check outputs with no answers as it indicates that they have nothing to record regarding the students' performance. On top of that, the fact that students have no answers means that they are not interested in the lessons presented (Lau & Lee, 2021). Hence, it is challenging for teachers to evaluate students' performance without sufficient evidence of learning.

Strategies Employed in the Implementation of Modular Distance Learning

While it is true that teachers may experience challenges and hardships in performing their duties and responsibilities (Treceñe, 2022) in the modular distance learning modality, they tend to employ various coping strategies to mitigate those problems and adapt to the changes posed by the COVID-19 pandemic (Agayon et al., 2022). Teachers were very

resourceful in providing solutions to cater to the shortcomings of the Department of Education (DepEd), especially in the implementation of modular distance learning. In this study, science teachers' coping strategies and how effectively they perceive them were also investigated, along with the challenges mentioned previously.

Table 6. Strategies employed along the Preparation of SLMs and the level of its effectiveness as perceived by junior high school science teachers (n=38).

Approaches and Practices on the Preparation of SLMs	Weighted Mean	Verbal Interpretation
Attended online ICT training and webinars in making LAS and other SLMs.	3.02	Effective
Asked for technical assistance in repairing tools and materials used in reproducing SLMs such as printers	2.97	Effective
Utilized own fund in purchasing school supplies needed in printing SLMs	2.69	Effective
Sought financial support from stakeholders.	2.63	Effective
Recycled some school supplies such as bond paper	2.91	Effective
Developed an income-generating project to provide school funds	2.54	Effective
Overall Weighted Mean	**2.82**	**Effective**

Preparation of SLMs. As indicated in Table 6, junior high school science teachers employed several strategies along with the perceived challenges in the preparation of SLMs. In their desire to continue serving their learners with quality education despite the experienced difficulties, teachers attended online information, communication, and technology (ICT) training and webinars relevant to making LAS and other SLMs (3.02), asked for technical assistance in repairing tools and materials used in reproducing SLMs such as printers (2.97), recycled used bond papers (2.91), and even made extra efforts by utilizing their funds in purchasing school supplies needed in printing SLMs (2.69) and developing income-generating projects (IGPs) to pool funds for that matter (2.54). All these strategies are perceived as effective, with an overall weighted mean of 2.82 by the science teachers in Mandaon District. Equipping oneself with the necessary technical skills is crucial in the effective delivery of modular instruction (Alvarez, 2021; Castroverde & Acala, 2021).

Table 7. Strategies employed along the Distribution of SLMs and the level of its effectiveness as perceived by junior high school science teachers (n=38).

Approaches and Practices on the Distribution of SLMs	Weighted Mean	Verbal Interpretation
Consistently reminded both parents and students about the schedule of distribution.	3.11	Effective
Posted signage about proper health protocol standards during distribution.	3.03	Effective
Strictly implemented the proper health protocol standards during distribution.	3.17	Effective
Gave instructions in *Minasbate* or Filipino language.	3.03	Effective
Consistently reminded both parents and students about the importance and continuation of education amidst this COVID-19 pandemic.	3.09	Effective

Conducted home visitation to the learners who were unable to get their modules	3.11	Effective
Overall Weighted Mean	**3.11**	**Effective**

Table 8. Strategies employed along the Retrieval of SLMs and the level of its effectiveness as perceived by junior high school science teachers (n=38).

Approaches and Practices on the Retrieval of SLMs	Weighted Mean	Verbal Interpretation
Scheduled the retrieval and distribution of modules at the same time and day	3.17	Effective
Consistently reminded both parents and students about the schedule of retrieval of modules	3.20	Effective
Sent back the unanswered SLMs to the students	2.91	Effective
Gave additional points to those students who submitted their SLMs on time and in good condition.	3.14	Effective
Sent modules to those who were unable to come to school, and their classmate with the same barangay.	3.09	Effective
Overall Weighted Mean	**3.10**	**Effective**

Distribution of SLMs. Results shown in Table 7 indicated that the strategies employed along with the distribution of SLMs are all effective, as perceived by junior high school science teachers. These results only show that this pandemic is not a hindrance to continuing education as long as the implementation of health protocols is strictly followed, particularly in the distribution of SLMs (3.17). Teachers even conducted home visits for those students who cannot retrieve their modules on time (3.11) and consistently reminded both parents and students about the schedule of module distribution (3.11). Notably, science teachers even provide instructions in the language that is known to parents and learners such as *Minasbate* and Filipino to make them easily understandable, especially for those who cannot follow the given instructions in the collection of modules. Communicating with parents consistently and conducting home visitations were also deemed effective strategies by special education teachers in addressing problems associated with the module distance learning, as reported by Butial et al. (2022).

Table 9. Strategies employed along the Students' Utilization of SLMs and the level of its effectiveness as perceived by junior high school science teachers (n=38).

Approaches and Practices on Students' Utilization of SLMs	Weighted Mean	Verbal Interpretation
Created Group Chat with the students to entertain and answer their inquiries regarding their SLMs.	3.11	Effective
Provided students with Weekly Home Learning Plan to guide them on how to utilize their time.	3.03	Effective
Reminded both parents and students of the importance of answering the SLMs seriously.	3.17	Effective
Provided video clips, books, and other learning materials to help them in answering their SLMs	3.03	Effective
Scheduled specific times to update their school performance through GC.	3.09	Effective
Overall Weighted Mean	**3.09**	**Effective**

Retrieval of SLMs. Similarly, science teachers implemented several effective strategies to address challenges experienced in the retrieval of modules. As revealed in Table 8, these include consistent reminders and follow-ups for both parents and students about the retrieval of modules (3.20), implementing the same day and time for the distribution and retrieval of modules (3.17) to avoid confusion, and providing additional points for those who submit their SLMs on time (3.14). Being on time in the distribution and retrieval of modules is very challenging for teachers and students. But constant communication between parents and teachers regarding the schedule of the retrieval of SLM enables teachers to retrieve students' outputs on time, thus giving enough time for checking outputs and providing necessary feedback regarding their performance through their parents (Agayon et al., 2022; Butial et al., 2022; Castroverde & Acala, 2021).

Students' Utilization of SLMs. As revealed in Table 9, it can be observed that junior high school science teachers applied a myriad of strategies along with the challenges experienced in students' utilization of SLMs, which they perceived effective. As previously noted, constant communication between teachers and parents resulted in the effective utilization of SLMs (3.17). Teachers even created Group Chats (GCs) to immediately attend to student queries and other academic-related concerns (3.11). GCs were also helpful in giving immediate feedback to students regarding their performance in class weekly (3.09). To ensure that the necessary materials are available to students, teachers even supplied their recorded video clips, electronic copies of textbook references, and other important reading materials (3.03) to help them understand better the contents of their SLMs. Utilizing group chats and teacher-made videos has been found to help students cope with the academic challenges in modular distance learning (Insorio & Olivarez, 2021; Insorio & Macandog, 2022).

Table 10. Strategies employed along the Result of Assessment of SLMs and the level of its effectiveness as perceived by junior high school science teachers (n=38).

Approaches and Practices on the Result of Assessment	Weighted Mean	Verbal Interpretation
Made the assessment easier without compromising the learning competency	2.97	Effective
Developed assessments for different kinds of learners such as those who are in geographical isolation and child labor, urban resettlement or disaster, and others.	3.06	Effective
Utilized group work or activity.	2.86	Effective
Gave different kinds of activities to choose from according to their capabilities.	3.06	Effective
Overall Weighted Mean	**2.99**	**Effective**

Result of Assessment of SLMs. In addressing problems associated with the results of the assessment provided in the SLMs, science teachers utilized various strategies that they perceived as effective. As depicted in Table 10, teachers adopted differentiated instructions and individualized learning opportunities by providing students with different kinds of activities to choose from according to their capabilities (3.06) and utilized targeted assessment methodologies to cater to the individual needs of the students (3.06). Science teachers even made the assessment a lot easier without sacrificing the quality of learning and the required learning competencies (2.97). These strategies are employed to resolve issues surrounding the quality and authenticity of assessment results in modular distance learning. The utilization of differentiated instruction and assessment increases students' participation, motivation, as well as academic achievement in modular instruction (Caratiquit & Caratiquit, 2022; Fortades & Habla, 2022).

Suggestions to Overcome Challenges Associated with the Implementation of Modular Distance Learning

Participants were asked to provide further suggestions to effectively overcome the challenges encountered in the implementation of modular distance learning. Their responses were thematically analyzed and coded, resulting in five (5) common themes: 1) Time Management and Workload, 2) Resources and Support, 3) Distribution of Learning Activity Sheets (LAS), 4) Simplification and Communication, and 5) Cooperation and Spirit of Bayanihan.

Time Management and Workload. This theme emphasizes the need to manage time more efficiently and reduce the workload to allow more time for teachers to provide feedback to students. The suggestion is to eliminate tasks that are not directly related to teaching, such as printing, to focus on their core responsibilities, such as attending to the needs and concerns of students related to the SLMs, as one participant stated (the names presented here are all pseudonyms to maintain participant anonymity):

> *"Remove the task of printing. Lessen admin work or work not directly related to teaching to have more time in giving feedback to student's assessment." (Teacher Jacel, female, aged 28)*

Resources and Support. This theme highlights the importance of providing adequate resources and support to teachers and students. Suggestions include providing online training, sufficient printing materials, school supplies, and printers, as shared by one participant:

> *"Provide online training for the teachers and give adequate amount/number of printing materials, school supplies, and printers."(Teacher Dan, male, aged 32)*

Another participant reiterates considering the needs of students and families experiencing financial constraints:

> *"Consider the needs of students and parents who are experiencing financial constraints when it comes to retrieval and distribution of LAS." (Teacher Gerald, male, aged 38)*

Distribution of Learning Activity Sheets (LAS). This theme focuses on the distribution of learning activity sheets (LAS) and the need to improve the process to ensure a smooth flow of distribution and retrieval. Suggestions include preparing LAS in advance, as one participant stated:

> *"I suggest that the SLMS/ LAS must be ready from 1-4 quarter and must better the SLMs are already printed like a textbook from the DepEd so that it can be used for how many years." (Teacher Benedict, male, aged 37)*

Another participant stated that proper coordination with Barangay officials must be carried out to determine the best way to distribute them, especially in far-flung areas:

> *"It is one of the factors that hinder the smooth flow of LAS distribution and retrieval. I would suggest that the school must coordinate with the officials of every barangay, most especially those places in far-flung areas, and plan for the best way to solve the problem itself. Distribution might be done every barangay with the help of the officials and teachers." (Teacher Irene, female, 24)*

Simplification and Communication. This theme emphasizes the importance of simplifying learning materials and ensuring good communication between teachers and students to avoid misunderstandings or misconceptions, as stated by one participant:

> *"Simplification of SLM, and good communication of students and teachers should be given priority to avoid misconceptions." (Teacher Rich, male, aged 33)*

Cooperation and Spirit of Bayanihan. This theme pertains to suggestions that highlight the importance of cooperation and the

spirit of *Bayanihan* in successfully implementing modular distance learning. One informant emphasized that the success of the MDL modality is due to the determination and passion of everyone involved:

> *"Modular Distance Learning (MDL) Modality has been very tough for all teachers, students, parents, and other persons involved. But the determination and passion of everyone implemented such modality a success." (Teacher Anabel, female, aged 30)*

One participant also suggest that everyone should do their part in helping one another and uplifting everyone's spirits amidst the challenges brought on by the pandemic:

> *"If there is something that I can suggest, that is to help one another. Everyone must do their part toward the success of the implementation of MDL. There's nothing more effective than cooperating, helping, and uplifting everyone's spirit amidst the pandemic. We are indeed one on this type of education delivery modality." (Teacher Merideth, female, aged 35)*

While the modular distance learning modality has been a necessary response to the challenges posed by the pandemic, it is clear that there are significant challenges in its implementation. However, the themes identified above suggest that with the right support, resources, and collaboration, it is possible to overcome these challenges and make modular distance learning more effective. Ultimately, cooperation, simplification, and effective communication will be key components in achieving a successful modular distance mode of instruction.

Conclusion and Recommendations

The implementation of modular distance learning has presented various challenges to science teachers in Mandaon District. The preparation of Self-learning Modules (SLMs) has been a significant challenge due to recurring technical problems with printers, time constraints, and unreliable internet connections. The distribution of SLMs has also been problematic as most parents do not adhere to the given schedule to get SLMs. Retrieval of SLMs has been another significant challenge, with incomplete submission of answered SLMs, late submission, and submission of unanswered modules being common problems. Students' utilization of SLMs has been problematic as students tend to submit unanswered and incomplete modules due to intervening factors such as doing routine household chores, working part-time, and attending to younger siblings. Results of assessments from SLMs have also been problematic as students tend to provide unreliable scores, obtain low scores, have trouble submitting performance-based assessments, and submit unanswered tests. Parents' lack of time and technical knowledge to help their children with distance learning and the economic and financial constraints caused by the COVID-19 pandemic have worsened these challenges.

As a result, science teachers employed several coping strategies to address the challenges they encountered in the implementation of modular distance learning. These strategies included attending online ICT training, asking for technical assistance, recycling used bond papers, and developing income-generating projects to purchase school supplies. Teachers also conducted home visits, provided instructions in local languages, and reminded both parents and students about the schedule of module distribution and retrieval. Moreover, they utilized group chats, and teacher-made videos, and provided electronic copies of reading materials to help students understand better the contents of their SLMs. Finally, science teachers adopted differentiated instructions and individualized learning opportunities and utilized targeted assessment methodologies to cater to the individual needs of the students. These coping strategies were perceived to be effective in ensuring the quality and authenticity of learning and assessment results in modular distance learning.

Overall, this study suggests that parents should be more involved in their children's learning, and adequate funding should be pro-

vided to schools to produce and deliver adequate modules on time. Teachers should also provide clear instructions and guidance to students to ensure better utilization of SLMs, and proper monitoring of students' performance should be conducted to ensure better results in assessments. Additionally, the teachers' suggestions highlight the need to manage time more efficiently, provide adequate resources and support, improve the distribution process of learning materials, simplify learning materials, ensure good communication between teachers and students, and foster cooperation and the spirit of Bayanihan in successfully implementing modular distance learning.

Study Limitations

There are a few limitations to the study that should be noted. First, the study only focused on science teachers in one district, limiting the generalizability of the findings to other districts or subject areas. Second, the study relied on self-reported data from the participants, which may be subject to bias and may not accurately reflect their actual experiences. Finally, the study was conducted during a specific school year and under the conditions of distance learning, which may not be applicable in non-pandemic times or face-to-face learning environments.

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