

Print-based modular distance learning in a public elementary school: an evaluative study

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Abstract

This study evaluated the implementation of Print-based Modular Distance Learning (PMDL) in a public elementary school in the Philippines during the Covid-19 pandemic. The research assessed the quality and extent of using self-learning modules for distance education. Data were collected from 112 teachers at Manuel L. Quezon Elementary School using a researcher-made survey questionnaire. The findings indicated that the self-learning modules utilized in PMDL demonstrated high quality and effectively covered essential learning competencies. However, there were identified areas that require improvement, specifically in aspects of grammar, syntax, spelling, and punctuation. Overall, the implementation of PMDL, following the Four-Step Process recommended by the Department of Education, was generally successful. Nevertheless, the submission of answer sheets by parents or guardians revealed areas that need enhancement. Based on the outcomes of the research, an action plan with key recommendations was proposed to enhance the implementation process and improve the quality of self-learning modules. The aim was to foster more efficient and effective instruction delivery in future distance learning initiatives. The study's insights were of significant value for evaluating changes, enhancing school administrators' preparedness, and addressing challenges related to PMDL implementation in public elementary schools.

Print-based modular distance learning; evaluation; quality; self-learning modules, implementation, action plan, elementary level

1. Introduction

The aim to avert the transmission of Coronavirus Disease 2019 (COVID-19) brought about the deferment of the physical conduct of classes. Several educational sectors worldwide had been adversely affected by this disease (Tria, 2020). This affected about 87% of the world's school children (UNESCO 2020). SEAMEO's Ministerial Policy e-Forum on Southeast Asian Education brought together the education ministers to discuss what needs to be done to address the pressing educational issues.

Learning must continue, despite the difficulties faced by many countries during the pandemic (Dangle & Sumaoang, 2020). In an effort to ensure quality and access to education, the Philippine government introduced the Basic Education - Learning Continuity Plan (BE-LCP) (Labrado et al., 2020). BE-

LCP (2020) provided teachers, school administrators, and learners with a variety of delivery modalities. Modular Distance Learning (MDL) was one of the delivery methods recommended in the Policy Guidelines on Implementing Learning Delivery Modalities for Formal Education. This modality had been popular even before the pandemic in the Asian countries (Sejpal, 2013). In addition, other countries, such as Australia and the United States, also embraced distance learning methods, including modular distance learning (Valencia, 2020).

Modular Distance Learning is a way to deliver instruction that is individualized, in which learners use self-learning modules. Self-learning modules served as the main source of information and the MDL's content foundation, enabling students to use this package of learning activities that focuses on a selected number of clearly defined objectives (Nardo, 2017). SLMs were printed for those schools adopting the Print-based Modular Distance Learning Modality (PMDL). Learners who do not have gadgets necessary for online learning prefer this type of modality.

Despite the Department of Education's strategic solutions, the SLMs' development and production were rushed due to the urgency of the situation, resulting in inaccuracies and flaws in their content. Dangle and Sumaoang (2020) identified MDL's current limitations in a recent study, claiming that the lack of clear instructions and explanations in the modules made them too difficult to complete. Additionally, De Dios et al. (2022) determined that SLMs had loopholes based on their research. Examples included the unpacking of general competencies, outdated data, grammatical errors, unclear presentation of instruction, and improper lesson transitions.

The implementation of the Print-based Modular Distance Learning modality was not without its difficulties. Despite the fact that the Department of Education successfully standardized the implementation of PMDL (Talimodao and Madrigal, 2021) and majority of parents agreed with the strategies for module distribution, retrieval, content, and assessment, they still expressed dissatisfaction with the time allotted for answering the modules and their lack of understanding of some of the module topics (Olivo, 2021). Moreover, a few of the research findings on the implementation of PMDL that were uncovered were the lack of financing for the printing and delivery of modules in schools, students' challenges with independent study, and parents' lack of time to teach children at home (Carbonilla et al., 2022, Dangle and Sumaoang, 2020).

Teachers contributed immensely to the implementation of modules (Valencia, 2020). Rosales, K. et al. (2022) also showed that the new standard of education involved teachers constantly interacting with their students, giving them tasks to do, and promptly offering guidance and feedback (UNICEF, 2020). When modular distance learning was implemented, teachers had a big part to play in the design and adaptation of the educational processes. They changed the way they taught, created resources, and used a range of media (UNECLAC, 2020). All of these demonstrated teachers' exceptional control over the educational process. Making them indispensable in evaluating the quality of self-learning modules and the process of implementing PMDL.

The importance of evaluating the quality of self-learning modules utilized by public elementary schools in 2020-2021 was paramount due to the pressing issues surrounding the learning context, taking into account the necessary variables, in accordance with the Department of Education's guidelines for developing self-learning modules. The areas of content, language, layout, and design were considered quality indicators. The Department of Education's requirements for high-quality educational materials and the needs of the intended users guided the choice of these indicators. Additionally, there were only a few research studies on how the teachers rate locally created self-learning modules. The majority of studies concentrate on the SLMs that the Department of Education developed and disseminated on a national scale. Similarly, from the

perspective of the teachers, it was crucial to understand the degree of PMDL implementation based on the ALS-EST Handbook for Implementers (2019) and the practices carried out in public elementary schools, which were: distribution (pagkuha), application (paggamit), monitoring (pagtutok), and submission (pagbalik).

The study's recommendations and proposed Action Plan will aid in improving the quality of self-learning modules and PMDL implementation. This could assist in the development and endorse a more appropriate and effective mode of instruction in the future. Furthermore, the findings of this study can be used to track progress, keep improving the contingency planning of teachers, school administrators, and other stakeholders; and address issues that have occurred during the implementation of PMDL at the elementary level.

2. Objectives of the study

This study aimed to evaluate the quality of self-learning modules and the extent of implementation of Print-based Modular Distance Learning. Specifically, the objectives were to present the profile of the respondents in terms of the following socio-demographic information: sex, educational attainment, teaching position, grade level assignment, and subject taught; determine the significant difference in the evaluation of the teachers in the quality and implementation of Print-based Modular Distance Learning Delivery when the respondents were grouped by profile and propose an action plan for improving practices in implementing the Print-based Modular Distance Learning (PMDL) at the elementary level.

3. Review of related literature

A. Research locale

Manuel L. Quezon (MLQ) Elementary School is a public school located in Malaria, Caloocan City. It offers classes from Kindergarten to Grade 6 to children in the nearby communities. The school principal oversees the operation of all higher functions in the school and ensures that national regulations and policies are adhered to. As part of the school's supervision of more than one hundred classroom teachers, eight master teachers gave them technical assistance in the delivery of instruction.

The school implemented full print-based modular distance learning at the onset of the pandemic. The majority of children lacked access to the web and technological devices. M.L.Q. Elementary School experienced the same dilemma as other educational institutions throughout the world regarding how to address the situation during that time. The school eventually responded by following the Basic Education Learning Continuity Plan (BE-LCP), as directed by the Philippine government.

Towards ensuring the quality and accessibility of education, the school adopted the blended learning approach. However, print-based modular distance learning (PMDL) remained one of its alternative delivery modes (ADM) for vast majority of the learners, aside from online distance learning (ODL).

The school's self-learning modules were quality-assured and developed locally in the Caloocan Schools Division Office. Following the DepEd's appeal for regional and school division offices to conduct the prompt and essential development, production, and provision of instructional resources (DepEd Order no. 18, series 2020), these modules were planned and developed by a pool of module writers and validators in several subject areas. The division's initiative to create modular learning resources paved the way for print-based learning in all of Caloocan's elementary schools.

MLQ Elementary School served as the printing center for Caloocan North District III, which consisted of seven public elementary schools. The locally developed modules were printed in the printing centers and/or printed by outsourced copiers. The modules supplied by the Central Office were used as supplementary learning materials.

The locale had 4200 enrollees from Kinder to Grade 6 for School Year 2021-2022 (LIS, 2022). Based on the 3rd Quarter monitoring of attendance of the learners on the different modalities implemented, an estimate of 28 percent of the learners were able to join the online classes and about 8 percent of the learners from the intermediate level (Grade 4, 5 and 6) were able to attend the limited face-to-face classes. Majority of the learners had no access to internet and were still anxious in attending onsite classes due to Covid-19. Still, print-based modular distance learning was implemented to majority of the learners in the said school.

Based on the initial data gathered in the Early Registration for School Year 2022-2023, fifty percent of learners who enrolled using the Modified Learning Enrolment Form still preferred print-based modular distance learning. Contrariwise, due to the directive of the Vice President and Secretary of the Department of Education Sara Duterte, all public elementary and high schools nationwide will be opening to all students for face-to-face classes. However, despite the large number of learners and limited classrooms, the locale implemented full onsite classes from Kindergarten to Grade 6 which started August 22, 2022. The students still utilized the print-based modules at home asynchronously after attending classes onsite to complete the required number of learning hours.

B. Print-based modular distance learning

In schools, learning can be imparted using a variety of methods or modalities. These methods include in-person instruction, distance learning, and their combination, blended learning. The other two strategies largely took the place of traditional face-to-face learning. This was brought on by the COVID pandemic, which impacted the majority, if not all, of the nations in the world.

Distance learning is defined as the learning that occurs after instruction between a geographically separated student and teacher. A tutor is required to serve as a bridge between the teacher and student and in most cases, this is a parent's or guardian's role (Trovela, 2021). Distance learning also has three types namely, online distance learning, TV or radio-based instruction, and modular distance learning (MDL) (Quinones, 2020).

Modular Distance Learning is a way to deliver instruction that is individualized, in which learners use self-learning modules in print or digital format, depending on their needs. Any member of the family or other stakeholder in the community trained as a para-teacher or learning facilitator may guide the student during this process as described in the Policy. Similar to other modes of instruction, modular distance learning delivery modality also intends to facilitate learning and improve student performance. Understanding the different approaches learners will use to acquire knowledge and skills is imperative for instructional designers when selecting and developing instructional strategies, learning and teaching materials, and technological tools.

In print-based modular distance learning, the learners acquire knowledge and skills alongside with the learning facilitators at home and the teachers in different learning areas. Teachers design and prepare the activities and assessment of learning in the self-learning modules (SLMs) for distribution and give feedback on the output being submitted during the retrieval of accomplished tasks. Teachers are in charge of providing guidance and overseeing the learning of students using a variety of touchpoints, such as text messaging, audio

and video conferences, emails, and phone calls. They may also conduct home visitation whenever the learners need assistance. Equally, the learning facilitators guide and support children's learning at home by using SLMs with the same goal to facilitate learning.

In the Philippines, distance learning, more specifically, the print-based modular distance learning modality, was largely used during the pandemic. In addition, this was the only feasible modality in rural areas lacking stable internet connection (Pe Dangle and Sumaoang, 2020). However, various studies from across the nation had produced conflicting findings regarding how students, parents, and teachers felt about this learning modality after it was put into use. These studies highlighted the benefits and drawbacks of this type of learning methodology.

In modular distance learning, teachers had to adjust the performance of their roles in their job to teach and facilitate learning with their students. They were also the primary workforce behind its implementation. In a study by Anzaldo (2021), she asked 15 teachers in the elementary and secondary level to answer a survey regarding the reasons why or why not teachers were in favor of MDL. The results revealed that they were in favor primarily due to the convenience, accessibility, appropriateness, and flexibility of modular learning over other modalities. On the other hand, they were also not in favor because of problems arising from parents answering the modules themselves and students having a hard time learning the lesson without supervision by their teachers.

Students also had a share of perceptions in what could be considered the first time they had to experience this learning modality in the Philippine setting. In a study by Trovela (2021) involving 5 parents/guardians and 5 senior high school students from Sta. Catalina Integrated National High School in Majayjay, Laguna, in-depth interviewing and storytelling was used to understand the perceptions, experiences, and challenges they have faced with modular distance learning. The results showed that MDL was still an effective strategy in contemporary teaching in the midst of challenges in learning independence, time management, limited resources, and limited knowledge of parents.

As mentioned, parents or guardians played a vital role in the modular distance learning modality. Their involvement was even considered to best indicate the learner's success in education (Delgado, 2017). With this came the importance to know their perception on this learning modality and this was investigated by a number of studies.

In a descriptive study by Olivo (2021), 50 parent respondents from Canarem Elementary School in Tarlac answered questionnaires regarding their perception and this was analyzed with the help of the weighted mean. Her study revealed that the parents agreed with the current strategies in module distribution, module retrieval, module content, and module assessment. However, they still had complaints on the time allotment on answering the modules and their insufficient knowledge of some of the module topics.

In a similar study by Agaton and Cueto (2021), they also explored the experiences of the Filipino parents in dealing with modular distance learning using the survey method and inductive content analysis. Their study showed that the parents found the implemented educational policies during the pandemic effective but still had to face challenges in instruction delivery, unsatisfactory learning outcomes, the usage and accessibility of technology, personal health issues, and financial concerns.

Pe Dangle and Sumaoang (2020) carried out a study on the perspectives, challenges, and recommendations of students, parents and teachers in the modular distance learning program applied in two schools in La Union and Baguio City. The survey method and deductive thematic analysis were used to

analyze the results. It showed that the main challenges faced by the stakeholders of MDL were limited school funding for the printing and delivery of modules, parents' inadequate knowledge to teach their children, and the struggle of students to study on their own. These results came with recommendations to improve the current programs and policies set for modular distance learning modality.

C. Quality of self-learning module

Education quality is determined by the quality of instruction provided to students (Valencia, 2020). Therefore, it is essential that the learning resources used in modular distance learning adhere to high quality and standards. According to Juran (1992), quality is defined as the ability to meet a specific purpose.

In keeping with continuing education in the Philippines amid the pandemic, self-learning modules (SLM) were used as the primary learning resource for modular distance learning (MDL). Modules were essentially self-contained, self-instructional learning materials that were used within the learning pace of the individual, according to his/her individual needs and ability (Ali, et. al., 2010). As learning resources, modules provided course materials, guiding learners through the content and assessments in a systematic manner. In addition, it was conceptualized as an interactive resource for learning specific topics or lessons.

Self-learning modules were utilized primarily to facilitate instruction outside of the classroom setting and when face-to-face instruction was not possible. Due to its importance as the primary learning resource in PMDL instruction, it must be evaluated for conformity to the quality standards established by the Department of Education. As stated by Hamweete (2012), to maintain and ensure high standards, self-learning modules must be continuously monitored and improved. Furthermore, Leacock and Nesbit (2007) emphasized the importance of evaluating learning resources in order to ensure their quality.

At the onset of the pandemic, the Department of Education promptly made plans to produce self-learning modules at the national, regional, and division levels. Quality assurance was conducted at the Department of Education Central Office for the developed SLMs. The content and language of these materials were reviewed by this office. Those modules produced locally by the divisions and regional offices had their own quality systems. According to the report (Inquirer, 2020), the Department of Education acknowledged some errors in the self-learning modules, such as photos of pictures with spelling errors and assignments of activities or tasks that were not possible. The report of errors in the SLMs compelled the agency to act. DepEd Error Watch was launched in an effort to receive and collate reports of errors found in all learning materials, including modules and TV episodes. They also sought the advice of experts in reviewing the self-learning modules. Copies of the modules containing glitches were sent to the designated offices for validation and correction.

A number of 26 million learners were expected to receive enhanced quality self-learning modules for the period 2021-2022 as a result of a commitment made by the Department of Education (2021). DepEd recorded fewer mistakes than it did during the first three months of classes in October and December 2020 due to the enhanced screening procedure.

The enhanced vetting process was conducted in accordance with Department of Education Order No. 001 s. 2021 known as Guidelines for the Evaluation of Self-Learning Modules for Quarters 3 and 4 for the school year 2020-2021. Leonor Magtolis Briones, the agency secretary, issued the order on January 4, 2021, to ensure the quality of SLMs used in this mode of learning. As part of the policy, a systematic evaluation process was established to ensure that self-learning modules used by public schools meet the requirements of the K-12 Program and the Basic Education-Learning Continuity Plan (BE-LCP). While according to ALS-

EST Handbook for Implementers (2019) which served as one of the guides for the implementation of distance learning, modules for distribution must be of good quality. A module of good quality must be clear, readable, presentable and not reduced in size.

SLMs were evaluated based on the general criteria for content evaluation, including content, language, layout and design. In the quarterly development of the self-learning modules, the content criterion ensured that the targeted Most Essential Learning Competencies were adequately addressed.

In response to a long-term plan of DepEd for a resilient education system and the Education Intervention Package of the Learning Continuity Plan, the Most Essential Learning Competencies were formulated. During the Covid-19 pandemic, the Department of Education's Bureau of Curriculum Development developed MELCs in order to cope with the dramatic changes in the educational environment. Learning competencies that were essential were the focus of instruction. Furthermore, MELCs were established in response to UNESCO's fourth sustainable development goal (SDG4), which aimed at strengthening resilient education systems during times of crisis.

The development of MELCs as a result of their review was very significant. To build skills and prepare learners for the next grade, MELCs were what students need and were considered indispensable in the learning process. MELCs assisted schools in managing the constricted number of school days while implementing different delivery formats by providing adequate teaching space. Through MELCs, learners were able to develop practical skills for learning, and deal with a crisis, such as a pandemic or epidemic, and eventually achieve success in life (DO 18, s.2020). Moreover, the development of MELCs addressed the congested curriculum. The quality of teaching time and students' deeper understanding was compromised due to the crowding of competencies. Taking too many subjects in a short period resulted in low mastery levels or insignificant progress in academic performance.

Rosales et al. (2022) performed a research study on the quality and implementation of Social Science Print-based Modular Distance Learning to 105 senior high school teachers in the division of northern Negros Occidental. Their findings demonstrated that the SLMs efficiently fulfilled the Most Essential Learning Competencies (MELCs) by aligning the learning objectives planned for the quarter. It further suggested that the Department of Education utilized standardized parameters to raise the caliber of PMDL. The findings in this study demonstrated that printed modules produced and used conformed to the DepEd national standard for quality (Talimodao & Madrigal, 2021).

The alignment between the instructional design and organization was another indicator of quality in this study based on Guidelines for the Evaluation of Self-Learning Modules. The printed learning material was designed according to the principles of instructional design. In addition to providing the content, it incorporated effective teaching and learning strategies and activities, as well as evaluation measures (DepEd Order No. 001 s. 2021). According to Moore & Kearsley (1996), instructional design aims at developing effective instructional materials utilizing objectives, relevant teaching strategies, systematic feedback, and evaluation. Furthermore, it can also be referred to as an approach that facilitates learning and performance by designing, developing, evaluating, and maintaining instructional materials (Martin, 2011).

The recommended instructional design must, as stated in the aforementioned guidelines, strive to create independent learners through MELC-aligned, developmentally appropriate, comprehensive, and self-directed self-learning modules. The five suggested components for each lesson were an introduction, a presentation, an application, a generalization, and a post-assessment. A pre-assessment to gauge the learner's familiarity with the lessons, prior knowledge that supports the learning process, and instructional objectives

anchored in the Most Essential Learning Competencies must all be included in the course overview. The concept development for lesson presentation was supposed to adequately address the MELCs relevant to the grade level and learning area. The levels, needs, experiences, and contexts of the learners must also be taken into consideration when choosing the content. There must be no errors, and intellectual property rights must be respected. Each activity must be tailored to meet the developmental and age-appropriate needs of learners. There should be several self-check activities in the assessment that align with the objective and the content.

To ensure the learner acquired the competencies expected from self-learning modules, developers were expected to create differentiated tasks based on multiple intelligences, learning styles, and readiness levels. The generalization and synthesis summarize and process what has been learned in the self-learning modules. The post-assessment evaluates the learner's mastery of the objective. Innovative, interactive and interesting instructional materials like the self-learning modules bring to life the instructional design.

Learning materials work best when different instructional elements are aligned with one another. An equally vital aspect of teaching is aligning the goals with the lesson objectives. For instruction to be successful, the objectives must be connected with information, examples, feedback on practice, and review. Each element must be supported by appropriate instruction and strategy. If these procedures are coordinated, the quality of instruction will improve (Martin, 2011). To design an effective module, logical and pedagogical linkages must be made between the objectives, learner needs, learning outcomes, learning and teaching methodologies and resources, and assessment standards (Donnelly and Fitzmaurice, 2005). According to Biggs (1999) on the fundamental principles of constructive alignment, in order to support appropriate student learning, a good teaching system must align the teaching methods and assessment to the learning activities stated in the objectives. Moreover, the misalignment of assessment to the specific learning objectives and too much number of activities can decline the motivation and learning of the learners (de Dios, et al, 2022).

Language is one of the criteria for assessing the quality of modules. To ensure quality in language, self-learning modules must have clarity and coherence of thought and be free of grammar, syntax, spelling, and punctuation errors. Language is integral to the teaching and learning process. The language that students know the most provides them with a strong educational foundation. Within the K-12 Program in the Philippines, Mother Tongue-Based Multilingual Education (MTB-MLE) was institutionalized as the primary language of instruction in the first three years of primary school. In addition to developing literacy abilities in the school language, it develops cognitive skills, comprehension, and critical thinking.

In the study of Gopang et al. (2018) on mother tongue used as a medium of instruction at elementary levels, the results showed that students' comprehension was improved by using the mother tongue. This understanding enhanced their cognitive abilities as well. The final recommendation was that instructions should employ at least a bilingual approach in order to facilitate student comprehension.

Using clear and concise language was a significant factor that determined the level of user-friendliness in a case study focused on print-based instructional materials available to distance learning at the University of Zambia. As mentioned in this study by Simui, et al. (2017) a module that has difficulty flowing with ideas and is difficult to understand can be deemed unfriendly. Furthermore, the incorporation of unfamiliar language and concepts makes educational materials unfriendly to learners. It was also noted that learners tend to seek explanations from others when modules are written in a non-interactive manner. This is necessary so that the content presented can be understood.

De Dios et al (2022) stated in their study on the evaluation of English self-learning modules in the implementation of modular distance learning that learners were guided by self-learning modules to make their own learning progress. What they read, see, and understand is crucial to their learning process. SLMs must

ensure that the content is readable, which means that the vocabulary, sentence length, and paragraph structure must be suitable for the target learners. Self-Learning modules must have content that is generally simple to understand, clear, and captivating in order to meet the DepEd's readability standards. The difficulty of the language used, the words selected, the length and structure of the sentences, the clarity and order of the contents—all of these factors affect how easily students can understand the SLMs. At the same time, their study revealed that one of the drawbacks of self-learning modules was incorrect grammar usage, particularly spelling mistakes. Students who participate in modular distance learning may be misled if grammar consistency is not observed. Proper grammar builds usability and credibility (Wiens, 2012).

When developing study materials, instructional designers need to be direct and concise. In order to facilitate an easy understanding of the content, self-learning materials should be simplified. A further recommendation was made that the use of ambiguous language be avoided. It was also asserted in his study that information given to distance learners must be appropriate to the purpose, relevance at the time, adequate, and accessible for the individual's development.

It is crucial to emphasize that the choice of instruction medium should take the subject to be taught, grade level, and/or class into consideration (Ahmed, 2011). The instructional language or medium of instruction that should be used in the development of self-learning modules was also specified in the guidelines for content evaluation. It was recommended for Grades 4 to 10 that the medium of instruction in these subject areas: Filipino, Edukasyon sa Pagpapakatao, and Araling Panlipunan be written in Filipino. Self-learning modules in Math, Science, and English subjects should all be written in English at the same grade level. MAPEH should be written in Filipino in grades 4 to 5, while in English in grades 6 to 10.

Layout and design is responsible for ensuring the SLM's physical characteristics, format, and visuals meet the appropriate and understandable requirements of self-learning modules. A key aspect of the development of print modules is the quality of the layout and design, as Khalid et al. (2007) observed in their study *Improving the quality of learning modules* at the Open University in Malaysia. The survey conducted by Open University in Malaysia on modules found that 69.2% of the 10,800 respondents, including OUM learners and tutors, rated the design of the print modules as excellent or good. As part of its ongoing efforts to improve the quality of its print modules, the university consistently solicited feedback from its students regarding the layout and design.

The indicators of the physical attributes of the self-learning modules, as described in the evaluation rubric for layout and design, include the necessary elements, such as the cover, preliminary pages, body, and back matter. Headings must follow consistent styling; font size and style must be appropriate for the target audience; proper spacing must be maintained, and illustrations and texts should be balanced accordingly. Design and layout also include visuals. These are the line drawings, photos, maps, tables, and graphs used in the self-learning modules. Visuals must be simple, relevant, and recognizable, as indicated in the evaluation rubrics. Additionally, the visuals should be proportionally drawn in size, correctly labeled and captioned; be clear in content and detail, and show the individual steps or actions of the process in detail (DO 001 s.2021).

In the study of Constantino et al (2020) on challenges faced by 100 selected parents in the education of their children enrolled in primary school in Cabanatuan City, the researchers' findings concerning the quality of printed modules were that several items were not readable and that some illustration colors were unsuitable. Studies have generally shown that students learn more effectively from lessons with visualizations than from text-only instruction. Information is more easily retrieved and remembered when it is illustrated and used in combination with other modes of input. This method of using visuals enhances the learning process, develops creative thinking (Hasper, 2018), enhances comprehension, facilitates retrieval, and enhances

memory (Kouyoumdjian, 2012). On the other hand, if the incorrect or inappropriate illustrations, photographs, maps, tables, and graphs were used, they could result in issues such as misleading data, undermining the purpose of the visuals.

The creation of self-learning modules also placed a strong emphasis on proper reference attribution and accurate citation of outside sources. This is done in order to avoid violating the sources' intellectual property rights and ultimately posing issues for the module developers. According to De Dios et al (2022) in their study on the evaluation of English modules, precise citations in instructional materials would increase students' trust in the reliability of the data in self-learning modules. Moreover, it was deduced from their respondents that meticulous and stringent regulation in each stage of the development of SLMs ensure their quality

D. Implementation of print-based modular distance learning

Asian nations like India and the Philippines employed print-based modular learning, which was deemed to be beneficial, according to the World Bank compilation report (2020) (Sejpal, 2013) (Sadiq & Zamir, 2014). Similar to other modes of instruction, modular distance learning also intends to facilitate learning and improve student performance. Understanding the different approaches learners will use to acquire knowledge and skills is imperative for instructional designers when selecting and developing instructional strategies, learning and teaching materials, and technological tools.

Following the President's directive, all face-to-face classes were canceled and distance learning modalities were introduced in 2020-2021. While the Department of Education was preparing the Policy Guidelines on the Implementation of Learning Delivery Modalities for Formal Education, the Curriculum and Instruction Strand of the Central Office provided the following suggestions for implementing and managing distance learning delivery modalities. In this issuance, the authors described and considered each distance learning, mapped the learning resources for each modality, and proposed actions to address potential challenges. A matrix of distance learning delivery requirements was also included in the policy guidelines.

To determine a learning delivery method, whether public or private schools, must consider the following factors: the availability of learning resources, the health and well-being of learners, teachers and non-teaching staff, the national and local directives, and parental and learner preferences (Department of Education Order 13, Series 2020). According to the same order of the Department of Education, the mandatory minimum requirements for modular distance learning in schools were laid out in three areas of readiness for such distance learning, namely governance, content, and parental involvement.

Parents, teachers, and students all had a big impact on how successfully the chosen distance-learning medium worked (Labrado et al, 2020). The school's modular learning initiatives must be explained to and supported by teachers, parents, and students within the framework of school governance. Prior to the implementation of PMDL, virtual orientations, meetings, seminars, and conferences for parents and learners must be held in order to enhance the quality of their instruction, develop their abilities to support their children's learning, and make up for their lack of knowledge in the various subject areas (Dangle & Sumaoang, 2020).

For content, there must be a completed and appropriate set of learning modules to distribute to learners. It may be in print and e-copy for those with a device for Quarter 1. Moreover, the schools should have reference/supplementary materials available for students to use. Regarding parent involvement, the parents and/ or guardian must have expressed their willingness to consider modular distance learning for their

children. As part of their involvement in their children's modular distance education, parents must have shown willingness to supervise and monitor the learners' progress.

In Abucejo et al. (2022), parents' lived experiences were examined and analyzed to explain the implementation of modular learning. An interpretive phenomenological analysis (IPA) based on Moustakas' Modified Van Kaam Approach was used in this study. A purposeful selection of participants was used according to the inclusion criteria. A total of ten parent participants were interviewed at Balabagon Elementary School by the researchers. It was said that parents should be given the opportunity to improve their quality of teaching and develop their skills in facilitating their children's learning. Additionally, the researcher recommended that the schools must provide parents with the opportunity to attend Parent Seminars and Training on topics presented in weekly modules.

The parents or guardian return the modules to the school or to the location where the modules can be dropped off. This is once the learners have completed all of the lessons in the module. By the end of the week, the class adviser or teacher informs the students of their progress so that they can submit their work. The parents or guardians of young learners should also ensure that all tasks in each module are completed according to the instructions.

The parents or guardian as learning facilitators guide and support children's learning at home by using SLMs with the same goal to deliver the instruction and facilitate learning. The implementation of PMDL required significant parental involvement. According to Garbe et al (2020) many parents encourage and act as motivator to their children at home. In a recent study on the competencies of teacher and parents in facilitating modular learning, the researchers, Terado and Arenga (2022) deduced the parents to be competent in facilitating modular learning, particularly their strategies for motivating their child to answer the modules. As their kids finish the modules, their parents showed appreciation by giving them gifts or free time. Furthermore, the parents encouraged their children by providing examples of potential responses to the module's activity to help their children understand the lesson. However, there were also reports of challenges encountered at home. In order to keep their children focused on the set of activities in the module for each subject area, parents must devise creative ways to keep the home learning environment free from interruptions (Terado and Arenga, 2022).

Indeed, in print-based modular distance learning delivery, learners acquire knowledge and skills in collaboration with learning facilitators at home and teachers in various learning areas. Teachers prepare designed activities and assessments of learning in self-learning modules (SLMs) for distribution and provide feedback on the output submitted during task retrieval. Teachers are responsible for guiding and monitoring students' progress via text messaging, video calls, e-mail and phone calls. They also make home visits to students who require assistance.

In the findings of Talimodao and Madrigal (2021), the Department of Education successfully standardized the implementation of PMDL. Rosales, K. et al. (2022) findings also proved that during the new normal education, teachers contributed immensely to the implementation of modules (Valencia, 2020). Similar findings revealed that teachers played a significant influence in the preparation and modification of learning systems during the introduction of modular distance learning. They changed the way they taught, created resources, and used a range of media (UNECLAC, 2020). The results of this study specifically showed that teachers believed PMDL was implemented with great compliance, in accordance with the guidelines in the ALS-EST Handbook for Implementers. This demonstrated the superior management skills of the teachers in implementing PMDL across several senior high schools in northern Negros Occidental to deliver instruction. Teachers' regular recording on module distribution and the multiple steps taken by the

schools to guarantee the physical condition and appropriate preservation of educational resources were remarked as indicators for the implementation of PMDL.

In the students' point of view, they believed that the implementation of Modular Distance Learning (MDL) may be employed as a supportive learning delivery modality as a result of Bordeos's (2021) study on the attitudes and perceptions of students in the implementation of MDL. However, due to the encountered difficulties when using the aforementioned teaching strategy, led them to have negative opinions of the use of modular distance learning and assume that it had a deleterious impact on their learning experience and desire to learn.

The modular distance learning in the Department of Education worked on a four-step process (4Ps). The 4-step process were: pagkuha (distribution), paggamit (application), pagtutok (monitoring), and pagbalik (submission) (Yes, 2022). In the distribution process, print copies of the self-learning modules were picked up by the parent or guardian at the school and immediately distributed to the learners. As mentioned in the ALS-EST Handbook for Implementers (2019) on the distribution of text materials in implementing schools, the number of copies to be distributed depends on the number of learners who need them. Modules were given on a one-to-one basis.

To reduce transmission and ensure the safety during distribution of print-based modules, the Department of Education issued guidelines on its Required Health Standards following the DOH Guidelines on Risk-Based Public Health Standards for COVID-19 Mitigation (DOH AO No. 2020-015). As part of the initiative, the government ensured strict measures of social distancing and strengthened hygiene programs. In accordance with the Department of Education Order, the WINS Program 2016 Policy and Guidelines, in particular, were strictly adhered to (DepEd LCP, 2020).

The module's activities had to be finished by the learners themselves. To complete the tasks, additional reference materials, such as the Weekly Home Learning Plan, were used in addition to the module's instructions. WHLP was an outline of home-based activities and assessment in the self-learning module used to guide both students and learning facilitators or para-teachers at home in the attainment of the objectives. The purpose of a Weekly Home Learning Plan was to keep students on task and provide them instructions for what they needed to do each week. In order to create a set of Weekly Home Learning Plans for a whole quarter or grading period, it was the job of the subject area teachers to collaborate and bring all disciplines together into one plan. The Weekly Home Learning Plan needs to be distributed and conveyed to the parents in order to help them guide their children (DM-CI-2020-00162).

In response to challenges identified during the process, it was necessary to recalculate the responsibilities for teaching and learning activities of teachers and learners to provide suggested measures to overcome challenges identified during the process. OUCI-2020-307 (2020) was released as a memorandum suggesting measures for fostering "academic ease" during the Covid-19 epidemic. Learners were given the academic ease in completing each module according to their learning needs, characteristics, and level of understanding. The provisions of DO 12, s. 2020 pertaining to the Basic Education Learning Continuity Plan (BE-LCP) recognized the importance of context-based flexibility in teaching-learning activities. With flexible learning, learners were able to select from a variety of learning options. The teacher created engaging and effective learning situations in a flexible learning environment (UNESCO, 2020).

Reducing the amount of tasks in the self-learning modules was strongly advised in order to ease the students' stress and anxiety. This was advantageous and required to enhance assessment and prevent student burnout (Adonis, 2020). Schools were asked to declare optional activities for the Self Learning Modules in order to assist students in focusing on important tasks (SLMs). Only five (5) items were answered by learners

in pre-tests and post-tests with six or more items. In the enrichment activities, only fast learners were asked to complete them. The time allocated for learners to complete and submit their activities/tasks were reconsidered. Students and home learning facilitators who were determined to be having difficulties were offered additional assistance by the teachers.

The Individual Learning Monitoring Checklist provided by the school helped the teachers and learning facilitators at home to monitor learners who were not showing progress in meeting the required learning outcomes. It helped determine which modules learners had completed and kept track of their progress. The teachers offered consultations through different touchpoints. They communicated with the students and provided immediate feedback through text messages, phone calls, Facebook messenger, home visits, and through the School Learning Clinic Program (SPC).

Part of the School Learning Clinic Program (SPC), schools in the Division of Caloocan addressed the academic and behavioral concerns of learning facilitators and the learners as they worked on their modules. This provided teachers and parents with a platform for discussing learners' progress and addressing concerns. Teachers assisted learners and parents with any difficulties completing the activities in the module. They assisted learners who did not have access to the internet, learners who could not complete tasks using print-based modules, and learners without available devices such as laptops and cell phones. Teachers provided consultation to learning facilitators who had difficulty guiding learners in lessons they found difficult to process and understand. A monitoring tool was created as part of a consultation where interventions and recommendations were documented (SDO Caloocan Division Memorandum no. 107, S. 2022).

As a result of the significant difficulties discovered while monitoring the provision of basic education services during the pandemic, the strategy for assigning teaching duties to teachers and learning activities had to be modified. The Memorandum OUCI-2020-307 released on October 30, 2020 outlined ten highly-recommended measures to schools to ensure flexibility in teaching and learning. Some of the remedies suggested included reconsidering the allotted time for learners to complete and submit activities. In addition, schools determined activities contained in the first quarter self-learning modules and declared as optional. There were reports in that in some areas such as the Department of Education in Central Visayas gave the students more time to answer their modules by allowing delayed submission of accomplished module (Anadia, 2020). The director said they do not want to burden the learners and parents with strict deadline.

The memorandum also recommended that interdisciplinary integration be taken into consideration to reduce grade-level activities, particularly in classes where one teacher oversees all subjects in a section, like Grade 1. This was also done to promote academic ease during the pandemic. Additionally, support was also provided for the socio-emotional and mental health of the teachers, learners, and parents. Concerns regarding the measures taken to reduce teachers' workloads or assignments were also articulated.

Terado and Arenga (2022) found that monitoring students, retrieving modules and learning, and providing them with meaningful feedback significantly impacted students' MPS scores. The researchers asserted that returning modules for checking would enable teachers to evaluate students' progress on the target competencies. A monitored learning process will lead to appropriate learning directions for students. Moreover, through performance feedback, students will be informed about the correctness of their responses. The right kind of feedback helps students reflect on what they have learned, motivates them to learn more, and builds on their prior knowledge. Feedback on student performance should be given as soon as possible. Delays in providing feedback on student performance may be ineffective. Opitz and Mecklinger (2011) studied the effects of immediate versus delayed feedback. They discovered that participants who received immediate feedback outperformed those who received delayed feedback. SLM assessments meet students'

educational needs in a similar way, according to De Dios et al. (2022). The SLMs, they discovered, failed to include the key to correction, preventing students from receiving immediate feedback. According to the researchers, independent learners such as SLM users, need answer keys in order to quickly assess the accuracy of the acquired knowledge.

Hinay and Deloy (2021), on the other hand, cited various opinions from parents and teachers regarding the inclusion of answer keys in the SLM. The parent participants complained that the answer key was unreliable, unclear, and deficient. Additionally, they call to discourage the students from relying too heavily on the answer key. The teachers requested that a quality-checked and reliable answer key be attached as a student resource despite finding duplicated answers and incomplete answer keys themselves.

4. Methods

A. Research design

The study used a descriptive research design that utilized a quantitative data collection instrument. Quantifiable evidences were gathered to provide an informed statistical analysis of the population. Siedlecki (2020) described descriptive studies as the analysis of statistics about entire populations. There were situations where it was effective at identifying problems that were present within a group, team, or organization. Further, Djuwari (2021) defined descriptive research as the systematic and accurate examination of a variable through the use of questionnaires, polls, surveys, and computational techniques.

This research design was very much suitable in the presented evaluative study of the print-based modular distance learning modality used by public elementary school teachers.

B. Participants of the study

The research study was conducted at Manuel L. Quezon Elementary School (ML.Q. ES). The school was one of several public schools in the Division of Caloocan that offered Print-based Modular Distance Learning (PMDL) for the majority of its students in the school year 2021-2022. The school, situated at the heart of the community in Barangay 185, Malaria, North District III was home to more than four thousand students from kindergarten to grade six. This institution had a total of 113 teachers who utilized self-learning modules and implemented Print-based Modular Distance Learning (PMDL) as one of its adopted teaching modalities. As respondents, all teachers were given survey questionnaires to answer. From the total population of 113 teachers, only 112 were able to voluntarily respond to the questionnaire giving a 99 percent retrieval rate.

C. Data gathering instrument

A survey questionnaire developed by the researcher was used to collect the data required for the study. To evaluate the quality of printed modules, the domains included were aligned with the general criteria for content evaluation (DepEd Order No. 001 s. 2021). The indicators in the ALS-EST Handbook for Implementers and the Non-negotiable Minimum Requirements for Distance Learning Modalities of the Department of Education were also utilized as guides in the development of the survey instrument. The variables used to determine the extent of implementation were derived from the practices implemented at Manuel L. Quezon Elementary School and the four-step framework (4Ps) developed by the Department of Education for modular distance learning. The 4-step process was: distribution (pagkuha), application (paggamit), monitoring (pagtutok), and submission (pagbalik).

The instrument had a total of 30 items intended for elementary teachers, who adopted print-based modular distance learning as one of their modalities.

The variables were as follows:

- 1.1. Quality of Printed Self Learning Modules
- 1.2. Extent of Implementation of Print-based Modular Distance Learning
 - 1.2.1. Distribution of Printed Self Learning Modules
 - 1.2.2. Application or Completion of Activities
 - 1.2.3. Monitoring Learners' Progress
 - 1.2.4. Retrieval of Printed Self Learning Modules

Participants in the survey were asked to complete two sections of the survey questionnaire, including a demographic profile and their evaluation of the print-based modular distance learning approach implemented in SY 2021-2022. Online survey administration was used for the questionnaire. The survey questionnaire was distributed and data was gathered using a Google form. In each case, respondents were asked to check the box beside the data that corresponded to their answers.

The participants' names were not required to be disclosed during the profiling of respondents. Several demographic characteristics were collected from respondents, including sex, educational attainment, teaching position, grade level, and subject area handled.

The second section of the survey questionnaire evaluated the quality of self-learning modules as well as the extent of implementation of Print-based Modular Distance Learning modality. The teachers' evaluations of PMDL were analyzed using a Likert scale with values of 4 denoting strongly agree, 3 agree, 2 disagree, and 1 denoting strongly disagree.

A research instrument validation process was also performed to check the validity and reliability of the researcher-made survey questionnaire before the actual date of distribution and collection. The researcher subjected the survey questionnaire to a review by experts in the field of research and school management who were knowledgeable about the variables pertaining to the subjects under study.

The validated questionnaire was then pilot-tested on 30 teachers at Caloocan City's Baesa Elementary School, a subset of the intended population. Cronbach's alpha was used to estimate the reliability index. The reliability index was 0.963 of the ten indicators used to assess the quality of self-learning modules. The reliability of a distribution variable with 5 indicators was 0.936. For the application variable with five indicators, a reliability index of 0.950 was calculated. The monitoring variable's reliability index with five indicators was 0.970. A submission variable with five indicators had a reliability index of 0.958. As a result, the overall reliability index for the 30-item survey questionnaire was 0.978. All the indices for the five variables and the entire survey questionnaire were rated excellent for level of internal consistency.

D. Data gathering procedure

Before commencing the study, the researcher obtained permission from the Superintendent of the Caloocan Schools Division Office to allow the elementary school teachers to be respondents for the study. Upon receiving approval to conduct the study, a letter was sent to the school head where the study was carried out.

The survey was conducted using Google Forms, in accordance with Covid-19 health and safety guidelines, and with consideration for the respondents' available time. An explanation of the purpose of the survey, as well as a consent form, was provided to the teacher- participants. Each respondent was prompted to mark the option that best fits their response. Based on the information gathered by the instrument, comprehensive data were compiled, summarized, and presented.

E. Data analysis

To attain the goals of the study, data were gathered, summarized, and analysed. A frequency distribution table and graphs were created to describe the information received about the teachers' demographic profile.

For the responses indicating the evaluation of the quality and extent of PMLD implementation using the 4-point Likert scale, a weighted average and composite mean were computed. To find the significant variations between respondents' ratings based on their profiles, the researcher performed inferential statistical tests. For profiles with two groups, a T-test was applied to an independent sample, and analysis of variance was used for profiles with more than two groups.

F. Ethical considerations

It was determined that the researcher had no conflict of interest that compromised the study. This study maintained the participants' anonymity and confidentiality by not identifying them during data collection, analysis or reporting of results. Neither the information provided to the researcher nor the information obtained from the respondents could not be identified by anyone other than the researcher. Prior to participating in the study, the participants had to provide their informed consent. There was a strict confidentiality agreement in place and all information was for a valid and specific purpose only in the research. No information was forced to be disclosed, and the respondents were allowed to withhold whatever they deemed too personal.

5. Results and discussions

The results and discussion focused on the survey questionnaire responses of the teacher-respondents. The analysis and interpretation of the results were provided by the researcher based on the evaluative study of Print-Based Modular Distance Learning in a public elementary school using the quantitative method.

Table 1 reveals the results of the respondents' personal profile in terms of sex, educational attainment, position, grade level handled and subject area taught. In terms of sex, it appears that this study finds a large proportion of female respondents with 101 or 90.20 percent of the total population of the respondents, while male was 11 or 9.8 percent. This only shows that majority of the respondents were female. This data coincides with World Bank findings that 87.54 percent of teachers in the Philippines were female (Bongco & Ancho, 2020). Additionally, the Philippine Commission on Women 2008-2009 data reported that approximately 89.58% of teachers in public elementary schools were female (Bongco & Abenes, 2019).

Table 1. Demographic profile of the respondents

Sex	Frequency	Percent
Male	11	9.8
Female	101	90.2
Educational Attainment		
Bachelor's degree	62	55.4
Master's degree	46	41.1
Doctorate degree	4	3.6
Teaching Position		
Teacher I	51	45.5
Teacher II	22	19.6
Teacher III	31	27.7
Mater Teacher I	3	2.7
Mater Teacher II	5	4.5
Grade Level Handled		
Kinder	8	7.1
Grade I	18	16.1
Grade 2	16	14.3
Grade 3	15	13.4
Grade 4	18	16.1
Grade 5	18	16.1
Grade 6	19	17
Subject Area Taught		
Araling Panlipunan	18	16.1
Edukasyon sa Pagpapakatao	5	4.5
Edukasyong Pantahanan at Pangkabuhayan	9	8
English	15	13.4
Filipino	25	22.3
Mathematics	19	17
MAPEH	8	7.1
Science	13	11.6

The table likewise conveys that 44.7 percent of teacher-respondents completed further education for professional development. Approximately four (4) percent had completed their doctorate degrees, and 41.1 percent had a master's degree. The percentage of teacher respondents with a bachelor's degree in education was about 55 percent.

In the study of Chin et al (2022) on the needs of teachers' professional development in the Philippines during Covid-19, the authors stated that teachers' pedagogical and information technology skills were heavily influenced by their prior professional development experiences and the use of active learning and innovative teaching strategies. Contrarily, Ladd (2015) asserts that master's degree teachers' effectiveness is no better than that of teachers without a master's degree.

The information gathered on the respondents' level of education revealed that the school employed many teachers who were equipped to facilitate distance learning. Because nearly half of the teachers had prior

professional development experiences and were familiar with active learning and innovative strategies, it was assumed that they would be able to adapt to the new situation even though no one was prepared for the abrupt change in teaching and learning modes brought on by the pandemic. These educators could serve as role models for their colleagues in implementing PMDL (Talimodao and Madrigal 2021). Over half of the teachers, however, need a significant need for orientation, training, and technical support to make the implementation of PMDL more effective.

A total of 92.5 respondents held the positions of Teacher I, Teacher II, and Teacher III, comprising 45.5 percent, 19.6 percent, and 27.7 percent, respectively. A percentage of 2.7 was in the Master Teacher 1 position, and 4.5 held the Master Teacher II position. Only about 7% of the population in the study were Master Teachers. According to DO 57, S. 1977 Further Implementation of the Career Progression for Master Teachers, the sample number of 120 teachers in the district, twelve must have the post of master teachers. The lack of master teachers acting as instructional leaders to supervise, monitor, and ensure the delivery of PMDL learning is made clear from this. According to Espineli's study (2021), Master Teachers are highly trained, have substantial experience directing school-wide programs, and facilitate professional growth for colleagues to improve the instructional quality of their schools. Presumably, there were enough instructional leaders to ensure that PMDL was properly implemented despite a lack in number of master teachers.

Kindergarten and grades 1 through 6 were offered at Manuel L. Quezon Elementary School in 2021-2022. Seven percent of the 112 school teachers were kindergarten teachers. Grade 6 had the highest percentage of teachers with 17 percent, followed by Grades 1, 4, and 5 with 16.1 percent. In Grades 3 and 4, 14.3% and 13.4% of teachers taught those grades, respectively.

The majority of teachers (23%, 17%, and 16%, respectively) taught Araling Panlipunan, Mathematics, and Filipino. English and Science teachers made up 13 to 14 percent of those surveyed. MAPEH was the academic discipline for 8% of all teachers (Music, Arts, Physical Education, and Health). EPP (Edukasyong Pantahanan at Pangkabuhayan)/TLE (Technology and Livelihood Education) teachers made up 9% of the total. The school with the fewest teachers, ESP (Edukasyon sa Pagpapakatao), had 4.5% of the total.

Table 2. Quality of printed self-learning modules

Indicator	Mean	VI	Rank
1. The target MELCs per quarter were sufficiently covered in the modules	3.50	VHQ	1
2. The module instructional design and organization were aligned.	3.46	HQ	3.5
3. The texts and visuals were accurate and error-free.	3.20	HQ	9
4. The modules included appropriate assessments aligned with the lesson objectives and content.	3.46	HQ	3.5
5. The modules ensured readability of content wherein vocabulary, length and structures of sentences/ paragraphs were suitable to the level of the target users.	3.31	HQ	8
6. The third party contents were properly cited and referenced.	3.34	HQ	7
7. The module topics and ideas presented from one lesson to the next were coherent and clear.	3.37	HQ	5.5
8. The modules were free from grammatical, syntax, spelling and punctuation errors.	3.11	HQ	10
9. The language used in the modules was consistent in style and adhered to the grade level and subject area mediums for instruction.	3.48	HQ	2
10. The physical attributes, formats and visuals of the modules were appropriate and well organized.	3.37	HQ	5.5
Composite Mean	3.36	HQ	
Legend: 3.50-4.0 Very high quality (VHQ); 1.50-2.49 Low quality (LQ); 2.50-3.49 High quality (HQ); 1.0-1.49 Very low quality (VLQ)			

Table 2 provides the weighted mean describing the quality of printed self-learning modules in terms of content, language, layout, and design. It was evident from the individual indicators and the overall composite mean of 3.36 that respondents found the self-learning modules utilized at Manuel L. Quezon Elementary School of high quality.

The self-learning modules used in this school were created locally in the Division of Caloocan. In the division, self-learning modules were redesigned and revalidated in order to continuously improve, maintain, and ensure high standards. According to the evaluation results, the printed self-learning modules met the quality standards in terms of content, language, layout, and design. The SLMs conformed to the quality standards for learning resources set by the Department of Education enclosed in DO 1 series 2021 Guidelines for the Evaluation of Self-Learning Modules for Quarters 3 and 4 of SY 2020-2021.

The results indicated the target MELCs per quarter in the self-learning modules designed and utilized in the Division of Caloocan were sufficiently covered in the modules having very high quality with 3.50 mean as perceived by the teachers. Additionally, it implied that the Division of Caloocan followed the standardized indicators to evaluate the self-learning modules in order to guarantee the quality of the modular distance education option. In view of the results obtained, the quality of the printed self-learning modules was consistent with the national standards set by the Department of Education.

Same findings were observed in the study conducted by Rosales et. al. (2022) on the quality and implementation of Social Science Printed Modular Distance Learning to 105 social science senior high school teachers in the selected schools in the division of northern Negros Occidental. Their results indicated that the self-learning modules effectively covered the Most Essential Learning Competencies (MELCs) by aligning their objectives with the quarter's learning objectives. This implied that the self-learning modules whether developed nationally or locally in the division were guided by the Most Essential Learning Competencies.

The language used in the self-learning modules was rated as high-quality by respondents with a mean of 3.48. The language used was consistent in style and had adhered to the specified language used per subject area and grade/level or class (Ahmed, 2011). The medium of instruction specified in the guidelines for the development of self-learning modules by the Department of Education was diligently followed. Based on the results of the evaluation, the 2nd ranking indicator on the use of language indicated that the self-learning modules were easy to understand, user-friendly (Simui et al., 2017), and provided strong educational foundations for learners. The use of mother tongue in the bilingual approach may improve student comprehension and therefore enhanced learners' cognitive abilities (Gopang et al, 2018).

The alignment between the instructional design and organization was another indicator of quality in this study. The printed self-learning modules were designed using instructional design principles to meet the needs of learners. In addition to providing the content, achieving a mean quality of 3.46 equivalent to high quality, illustrated the instructional design's success at developing effective instructional materials using objectives, relevant teaching strategies, systematic feedback, and evaluation (Moore & Kearsley, 1996). Furthermore, this directed that the designed, developed, evaluated, and maintained self-learning modules facilitated learning and performance (Martin, 2011).

The module quality indicator of including appropriate assessment in line with the learning objectives and content assessment has a mean score of 3.46. This indicator of printed self-learning modules was rated as being of high quality. The correlation between the assessment and the learning objectives and content indicated high standard of instruction (Martin, 2011). Alignment between the learning goals, assessment and

activities that would improve the students' motivation and learning (de Dios, et al., 2022) was identified in the evaluation of the respondents.

Based on the respondents' responses, the quality indicator for the ideas and topics presented was 3.37, indicating high quality. The evaluation showed that the ideas in the modules from one lesson to the next were coherent and clear. The high quality was also achieved by the indicator about ensuring the readability of content, vocabulary, length, and structures of sentences/paragraphs appropriate to the target users' level with 3.31. The words were specifically selected, long sentences were avoided, and a structure was used that made the module simple to read and comprehend (de Dios, et al., 2022).

The physical characteristics, formats, and visuals had a high quality rating of 3.37 and were appropriate and well-organized. This indicator showed that the physical characteristics of the self-learning modules, as defined in the criteria for layout and design, incorporated the essential components, such as the cover, first pages, body, and back matter. Headings were formatted consistently, with the target audience's preferences taken into account for font size and style, space, and the proportion of graphics and text. The rubrics' criteria for simple, relevant, and recognizable visuals were met (DO 001 s.2021).

The evaluation yielded a result of 3.34, or high quality, for the quality indicator of whether the third party contents in the self-learning modules were properly cited and referenced. The findings of the evaluation indicated that SLMS were appropriately cited, allowing students to view the information and visuals online and read more about the subject, resulting in the learners' discovery of new knowledge and building an effective learning experience (de Dios, et al, 2022). Furthermore, it can be inferred that the module developers enforced stringent and meticulous rules on the entire process of developing the printed self-learning modules to guarantee their quality.

While several indicators received a high-quality rating in the evaluation of self-learning modules used in the implementation of Print-based Modular Distance Learning, there continues to be room for enhancement. With a mean of 3.11, the indicator free of grammatical, syntax, spelling, and punctuation errors was the lowest ranked factor. Similarly, the indicator on accuracy and error-free text and visuals got a 3.20 mean score, ranking second to the lowest evaluated indicator.

One of the drawbacks of self-learning modules was incorrect grammar usage, particularly spelling mistakes. It was said that proper grammar builds credibility (Wiens, K., 2012). On the other hand, poor grammar reveals competence gaps and casts doubt on the self-learning module. Students who participate in modular distance learning may be misled if grammar consistency is not observed (de Dios et al, 2022).

The Inquirer (2020) also reported that some errors were detected in the self-learning modules. The report of errors in the SLMS urged the agency to take action, which was also done by subject area experts in the Division of Caloocan. Revalidation and revisions were made to all learning materials after reported errors were found in the field.

The overall results, with a composite mean of 3.36, reveal that the division module developers successfully followed the DepEd's guidelines on the standardized quality of the development of self-learning modules for the PMDL modality, that were used by all schools in the division. These modules were the SLMS utilized by the participating public elementary school for the entire implementation of print based modular distance learning. However, continuous monitoring and improvement of PMDL are necessary to ensure and maintain high standards (Hamweete, 2012). To determine and improve the effectiveness of the distance

learning modality used for instruction, PMDL needs to be evaluated (UNICEF, 2020) and it could still be further improved through instructional supervision (Talimodao and Madrigal, 2021).

Table 3: Extent of implementation in terms of distribution of learning modules

Indicator	Mean	VI	Rank
1. The printed modules were distributed on time.	3.01	HE	5
2. All the printed modules were provided and distributed every week.	3.03	HE	4
3. The distribution of modules was well organized.	3.29	HE	3
4. The guidelines were clearly presented in the orientation/ dialogues/ conferences before the distribution of modules.	3.34	HE	1
5. The minimum health and safety protocols suggested by the government was followed during the distribution and retrieval of printed learning modules.	3.31	HE	2
Composite Mean	3.19	HE	
Legend: 3.50-4.0 Very high extent (VHE); 1.50-2.49 Low extent (LE); 2.50-3.49 High extent (HE); 1.0-1.49 Very low extent (VLE)			

Table 3 shows the weighted mean in the Extent of Implementation in terms of Distribution of Learning Modules. It was the first in the 4-step process framework practiced in public elementary schools using PMDL. It garnered an overall composite mean of 3.19. The respondents found the extent of distribution of self-learning modules among learners from Manuel L. Quezon Elementary School of high extent.

The indicator, *the guidelines were clearly presented in the orientation/dialogues/conferences before the distribution of modules* is ranked at the top with a weighted mean of 3.34. This result shows that Manuel L. Quezon Elementary School's level of communication with parents and the larger community through virtual orientation, conferences, and dialogues prior to the delivery of learning modules is high. According to the survey results, the school clearly adhered to the minimal requirements for modular distance learning in the context of school governance, including the requirement that teachers, parents, and students be informed of and guided by the school's modular learning initiatives (Department of Education Order 13, Series 2020). However, weekly parent training and seminars on topics covered in the modules may be held (Abucejo et al., 2022) to supplement the parents' insufficient knowledge to instruct their children on the various subject areas (Dangle & Sumaoang, 2020).

A weighted mean of 3.31 was obtained for the indicator at rank 2, *the minimum health and safety protocols suggested by the government were followed during the distribution and retrieval of printed learning modules*. This proves that Manuel L. Quezon Elementary School implemented the Department of Education's Required Health Standards to a high level in accordance with the DOH Guidelines on Risk-Based Public Health Standards for COVID-19 Mitigation (DOH AO No. 2020-015).

At rank 3 is the indicator *the distribution of modules was well organized* obtaining 3.29 equivalent to high extent in the verbal interpretation. The distribution of print-based modules in this school was made well-organized, safe and secured by taking precautions against transmission and guaranteeing everyone's safety. This may be one of the reasons that made it easier for parents to continue getting and turning in weekly modules without feeling hesitant.

Ranked 4 and 5 were the indicators *All the printed modules were provided and distributed every week* and *The printed modules were distributed on time* gained a weighted mean of 3.03 and 3.01 respectively.

Both have verbal interpretations of high extent (HE). Learners were consistently distributed print copies of the self-learning modules at Manuel L. Quezon Elementary School according to these results. The researcher believes that it was crucial that print copies of the self-learning modules were promptly distributed to each parent or guardian. In the absence of print copies, students will have nothing to do at home, and parents will have a more difficult time motivating and guiding their children in their studies. Parents' failure to receive and return self-learning modules on a weekly basis will cause the learning tasks to pile up, potentially leading to a failure to complete the tasks and quitting school.

Table 4: Extent of implementation in terms of application and completion of learning modules

Indicator	Mean	VI	Rank
1. The learners were provided with the suggested time frame that was adequate to finish the tasks	3.33	HE	1
2. The learners were well guided by their parents or guardian at home in accomplishing the activities in the module.	2.98	HE	4
3. The learners were able to accomplish all the activities in the modules assigned every week.	2.88	HE	5
4. The learners were provided with the Weekly Home Learning Plan which served as guide in accomplishing the tasks in the learning module at home.	3.23	HE	3
5. The learners were given academic ease in completing each module based on their learning needs, characteristics, and level of understanding.	3.29	HE	2
Composite Mean	3.14	HE	
Legend: 3.50-4.0 Very high extent (VHE); 1.50-2.49 Low extent (LE); 2.50-3.49 High extent (HE); 1.0-1.49 Very low extent (VLE)			

Table 4 displays the weighted means for the Extent of Implementation in terms of Application and Learning Module Completion. Application is the second step in the Department of Education's four-step process framework. With an overall composite mean of 3.14, respondents found the extent of application and completion of learning modules among learners from Manuel L. Quezon Elementary School of high extent.

With weighted means of 3.33 and 3.23, respectively, the indicators *The learners were provided with the suggested time frame that was adequate to finish the tasks* and *The learners were provided with the Weekly Home Learning Plan which served as guide in accomplishing the tasks in the learning module at home* were ranked first and third. These demonstrated that the teachers thoughtfully distributed the Weekly Home Learning Plan (WHLP), which outlined the home-based activities and directed teachers, students and learning facilitators at home in the achievement of the objectives. The findings demonstrate that school administrators and teachers planned and diligently delivered each week a print or digital copy of the WHLP, along with the SLMs, giving parents and students of a well-organized guide with sufficient timeframe to complete all activities in the self-learning modules.

The indicator at rank 2 with a weighted mean of 3.29 was *The learners were given the academic ease in completing each module based on their learning needs, characteristics, and level of understanding*. This demonstrates that the guidelines in DO 12, series 2020 The Basic Education Learning Continuity Plan (BE-LCP) were heavily implemented At MLQ Elementary School, teachers were cognizant of the significance of context-based flexibility in teaching-learning activities. As a result, teachers gave students the academic flexibility to complete each module in accordance with their individual learning needs, character traits, and level of comprehension. Fewer tasks were assigned, and some activities were optional, in order to assist students in focusing on important tasks, improve assessment and eliminate student burnout (Adonis, 2020). Consequently, the school was able to create a flexible learning environment with engaging and effective

learning experiences (UNESCO, 2020).

The indicators *The learners were well guided by their parents or guardian at home in accomplishing the activities in the module* and *The learners were able to accomplish all the activities in the modules assigned every week* gained a weighted mean of 2.98 and 2.88 respectively. Although with lowest means among other indicators, both still have verbal interpretations of high extent (HE). The learners' success in completing the SLM task at home was significantly influenced by their parents. Using the PMDL modality, parents and teachers collaborate to supervise and manage students. Parents were the ones who developed techniques for inspiring their children to complete their work (Terado and Arenga, 2022) and serve as motivators (Garbe et al, 2020). Those who were having difficulty finishing the tasks might benefit from making the home learning environment distraction-free and devising a strategy for their children to focus on the set of activities in the module by areas of study.

Table 5: Extent of implementation in terms of monitoring of learner's progress

Indicator	Mean	VI	Rank
1. The teachers monitored the learners' tasks and accomplishments every day.	3.46	HE	2
2. The learners received timely and appropriate feedback.	3.32	HE	4
3. The teachers offered consultation through various touchpoints, such as text messaging and audio/ video calls, whichever was available to him/her.	3.60	VHE	1
4. The teachers used the Individual Learning Monitoring Plan to monitor the learners who were not showing progress in meeting the required learning competencies progress.	3.45	HE	3
5. The parents or guardians of the learners utilized the School Learning Clinic to address learners' academic and behavioural concerns.	3.18	HE	5
Composite Mean	3.40	HE	
Legend: 3.50-4.0 Very high extent (VHE); 1.50-2.49 Low extent (LE); 2.50-3.49 High extent (HE); 1.0-1.49 Very low extent (VLE)			

Table 5 shows the weighted means on the Extent of Implementation in terms of Monitoring Learner's Progress. Monitoring of learners' progress is the third in the 4-step process framework introduced by the Department of Education. With an overall composite mean of 3.40, respondents find the extent of monitoring learner's progress of high extent and turned out to have the highest weighted mean among the 4-step process of MDL.

The teachers offered consultation through various touch points, such as text messaging and audio/video calls, whichever was available to him/her, received the highest weighted mean score in terms of extent of implementation in monitoring learner's progress, with a mean score of 3.60 or a verbal interpretation of very high extent. The findings show that teachers took steps to provide consultations via a variety of channels, including Facebook Messenger, home visits, and the School Learning Clinic Program (SPC), in addition to text messages and audio/video calls.

At rank 2, the indicator *The teachers monitored the learners' tasks and accomplishments every day* garnered a weighted mean of 3.46. Indicator 4 stating *The teachers used the Individual Learning Monitoring Plan to monitor the learners who were not showing progress in meeting the required learning competencies progress* obtained a weighted mean of 3.45. From the research results, the school's Individual Learning

Monitoring Checklist assisted the teachers and learning facilitators in keeping track of students who were struggling to meet the required learning outcomes. It kept track of learners' progress that made it easier to determine which modules they had completed. Teachers provided consultations at various touchpoints, and interventions and recommendations as part of the monitoring were properly documented in the monitoring tool as suggested in SDO Caloocan Division Memorandum no. 107, S. 2022.

The indicator *The learners received timely and appropriate feedback* gained a weighted mean of 3.32. According to the survey results, respondents indicated that communication with students and providing prompt and appropriate feedback were highly practiced and implemented as part of monitoring the learners' progress. The monitoring and feed backing were assumed to have had a significant impact on the students' performance (Terado and Arenga, 2022). More specifically, it assisted students in building on their prior knowledge and inspiring them to learn more and reflect on what they had already learned.

The indicator *the parents or guardians of the learners utilized the School Learning Clinic to address learners' academic and behavioural concerns* gained the least weighted mean of 3.18 but still of high extent. The School Learning Clinic (SLC) was one of the channels or touchpoints through which teachers communicated with parents and offered consultation to discuss the learners' progress and address concerns. The SLC program included assistance for home-based learning facilitators who had trouble guiding students through difficult-to-process and-understand lessons as well as for parents who had concerns about their children's behavior. Interventions and recommendations were documented using a monitoring tool designed (SDO Caloocan Division Memorandum no. 107, S. 2022).

Table 6: Extent of implementation in terms of submission of learning modules

Indicator	Mean	VI	Rank
1. The parent or guardian submitted the answer sheets and outputs on time.	2.71	HE	5
2. The parent or guardian ensured that all the answer sheets and outputs for each module were accomplished and submitted.	2.79	HE	3.5
3. The parent or guardian returned the completed module answer sheets and outputs to the school or drop-off location.	2.97	HE	2
4. The parent or guardian followed the scheduled date and time of submission.	2.79	HE	3.5
5. The submission of modules was well organized following guidelines set by the school and the minimum health and safety protocols suggested by the government.	3.25	HE	1
Composite Mean	2.90	HE	
Legend: 3.50-4.0 Very high extent (VHE); 1.50-2.49 Low extent (LE); 2.50-3.49 High extent (HE); 1.0-1.49 Very low extent (VLE)			

The weighted means of the Extent of Implementation in terms of learning module submission are displayed in Table 6. The respondents find the submission self-learning modules to a high extent, with an overall composite mean of 2.90. However, it was found that the parent or guardian's turnout, or submission of answer sheets and outputs from the self-learning modules of their children, was the lowest among the indicators and necessitates further planning for the enhancement of the submission process.

The result implies that not all parents ensured the timely completion and submission of outputs and self-learning module answer sheets to the designated drop-off location. Similar findings were found by Talimodao and Madrigal (2021) in their study on quality, implementation and challenges of PMDL in public

elementary schools. It was revealed in their study that teachers faced difficulties in implementing PMDL due to inconsistent participation and noncompliance of parents, which caused delays in the learners' accomplishment and submission of outputs.

The contributions of parents to the submitting of expected outputs in the SLM had a substantial effect on the educational success of PMDL students. It has been proven that students who received immediate feedback showed a noticeably greater improvement in performance than those who received delayed feedback (Opitz and Mecklinger, 2011). The delays in the submission of students' output and responses to activities and tests in self-learning modules may have led to an inability in providing valuable feedback for the students to quickly assess the accuracy of the acquired knowledge.

Ranked at 1 among the variables in terms of submission of learning modules, with a weighted mean of 3.25 is the indicator *The submission of modules was well organized following guidelines set by the school and the minimum health and safety protocols suggested by the government*. It is notable that the distribution of modules received a higher weighted mean with 3.36 as compared to the submission of modules in the organization following guidelines for minimum health and safety protocols. This indicates that the parents or guardians found the distribution of modules to be more organized and in accordance with the health protocol than the submission process.

With a weighted mean of 2.97, the indicator *The parent or guardian returned the completed module answer sheets and outputs to the school or drop-off location* was attained. This outcome corresponds with the indicators, which have a weighted mean of 2.71 and involve parents making sure that all answer sheets and outputs for each module were finished and submitted on time. Additionally, consistent with the indicators, *the parent or guardian followed the scheduled date and time of submission and the parent or guardian ensured that all the answer sheets and outputs for each module were accomplished and submitted both of which* gained a weighted mean of 2.79.

The four previously mentioned indicators helped determine the level of implementation in terms of SLM submission. Despite being of high extent, they still represent a major challenge in the implementation of PMDL. Relatedly, in Olivo's study (2021) on parents' opinions of print-based modular distance learning at Canarem Elementary School, they generally agreed with the method used for retrieving the modules, in which purok parent leaders were responsible for collecting the learning materials from the students' homes and transporting them to the locations designated by the school. The process they implemented was different but may be considered in future planning and implementation of PMDL.

The parent or guardian submitted the answer sheets and outputs on time, which had a weighted mean of 2.71, was the indicator with the lowest rank. The same conclusions were drawn from studies by Castroverde & Acala (2021) and Olivo (2021). The timely submission or retrieval of module outputs was one of the difficulties they identified. According to Memorandum OUCI-2020-307, these findings will then support one of the ten highly suggested actions for schools to ensure flexibility in teaching and learning. Rethinking the time allotted for students to complete and submit their activities is necessary in relation to the submission of modules.

Table 7: Summary table on the quality and extent of implementation of printed self-learning modules

Indicator	Mean	VI	Rank
Quality of Printed Self-Learning Modules	3.36	HQ	
Distribution of Learning Modules	3.19	HE	2
Application and Completion of Modules	3.14	HE	3
Monitoring of Learner's Progress	3.40	HE	1
Submission of Self-learning Module	2.90	HE	4

Legend: 3.50-4.0 Very high extent (VHE); Very High Quality (VHQ)
 2.50-3.49 High extent (HE); High Quality (HQ)
 1.50-2.49 Low extent (LE); Low Quality (LQ)
 1.0-1.49 Very low extent (VLE); Very Low Quality (VLQ)

The summary of the printed self-learning modules' quality and the four-step process for implementing Print-based Modular Distance Learning (PMDL) are shown in Table 7. The quality of the printed self-learning modules garnered an overall composite mean of 3.36 that respondents found of high quality.

Based on the indicators used to evaluate the quality of self-learning modules, the number one indicator in content evaluation, *the target MELCs per quarter were sufficiently covered in the modules*, received a mean score of 3.50, indicating very high quality. This determined that the target Most Essential Learning Competencies (MELCs) had been adequately covered. Among the indicators considered in the quality evaluation of printed self-learning modules, grammar; syntax; spelling; and punctuation were of high quality but ranked lowest.

On the implementation of Print-based Modular Distance Learning (PMDL), Monitoring of Learner Progress received the highest weighted mean of 3.40. Distribution of Learning Modules came in second with a weighted mean of 3.19, followed by Application and Completion of Modules with a weighted mean of 3.14. Submission of Self-Learning Module received the lowest weighted mean of 2.90. In general, PMDL was found to be employed to a high extent using the Four-Step Process recommended by the Department of Education. It was established, however, that the turnout or submission of answer sheets and outputs of the self-learning modules by the parent or guardian was the lowest and needs improvement.

In Talimodao and Madrigal (2021) the result of their study likewise revealed that both quality and implementation of PMDL were consistently excellent indicating that the Department of Education successfully standardized the implementation of PMDL. Rosales, K. et al. (2022) findings also proved that the self-learning modules effectively covered the Most Essential Learning Competencies (MELCs) by aligning their objectives with the quarter's learning objectives. Likewise, the study's results also demonstrated that teachers believed PMDL was being implemented with excellent concordance based on the markers mentioned in the ALS-EST Manual for Implementers.

This ascertained the successful implementation and excellent management of the PMDL to provide continuous learning. The process undertaken in the implementation somehow proved, as how PMDL was perceived in a study by Anzaldo (2021), to be convenient, accessible, appropriate, and flexible over other modalities. In a similar manner, Modular Distance Learning (MDL) implementation could be used as a supporting learning delivery strategy despite the difficulties encountered (Bordeos, 2021).

Table 8: Significant difference in the quality of printed self-learning modules when grouped by profile

Profile variables			
Sex	Mean	t-value	Sig
Male	3.27 (0.36)	0.701	0.485 NS
Female	3.37 (0.44)		
Educational Attainment	Mean	F-value	Sig
Bachelor's degree	3.34 (0.41)	0.33	0.719 NS
Master's degree	3.38 (0.45)		
Doctorate degree	3.50 (0.58)		
Teaching Position			
Teacher I	3.35 (0.42)	0.159	0.959 NS
Teacher II	3.36 (0.45)		
Teacher III	3.37 (0.44)		
Master Teacher I	3.53 (0.50)		
Master Teacher II	3.30 (0.48)		
Grade Level Handled			
Kinder	3.21 (0.39)	1.714	0.125 NS
Grade 1	3.31 (0.44)		
Grade 2	3.39 (0.47)		
Grade 3	3.42 (0.48)		
Grade 4	3.14 (0.31)		
Grade 5	3.44 (0.40)		
Grade 6	3.53 (0.43)		
Subject Area Taught			
Araling Panlipunan	3.38 (0.45)	0.617	0.741 NS
Edukasyon sa Pagpapakatao	3.14 (0.37)		
Edukasyong Pantahanan at Pangkabuhayan	3.22 (0.46)		
English	3.39 (0.44)		
Filipino	3.40 (0.38)		
Mathematics	3.28 (0.47)		
MAPEH	3.39 (0.43)		
Science	3.48 (0.45)		

Legend: NS Not significant

The findings in Table 8 denotes that when categorized by profile, there was no significant difference in the quality of printed self-learning modules. This holds true for all profile variables, including sex, education attainment, teaching position, grade level handled, and subject taught. This suggests that the profile variables have no effect on the evaluation of the printed self-learning modules' quality. In relation to what was previously established, teachers consistently perceive the modules to be of high quality.

This finding is similar with the findings of several studies. According to Emotin-Bucjan (2011), despite disparities in academic qualifications, teachers' perceptions of module quality were predominantly the same. Despite the difference in the level of education of the teachers and the grade level taught in the study of

Rosales, K et al (2022), respondents felt the quality of PMDL was excellent and that these variables do not influence their perceptions of the quality of PMDL, Talimodao and Madrigal (2021), in instance, also pointed out that PMDL requirements were the same for all teachers, independent of their educational backgrounds.

Table 9: Significant difference in the extent of implementation of learning modules when grouped by profile

Profile variables	Distribution	Application	Monitoring	Submission
Sex	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Male	2.91 (0.63)	2.93 (0.57)	3.16 (0.57)	2.69 (0.51)
Female	3.23 (0.49)	3.17 (0.46)	3.43 (0.46)	2.93 (0.49)
t-value	1.982	1.623	1.766	1.499
Sig	0.05 NS	0.108 NS	0.08 NS	0.137 NS
Educational Attainment				
Bachelor's degree	3.25 (0.51)	3.22 (0.46)	3.41 (0.46)	2.96 (0.53)
Master's degree	3.12 (0.49)	3.04 (0.46)	3.39 (0.49)	2.83 (0.46)
Doctorate degree	3.15 (0.77)	3.25 (0.66)	3.45 (0.64)	2.90 (0.38)
F-value	0.976	2.001	0.034	0.97
Sig	0.380 NS	0.140 NS	0.966 NS	0.382 NS
Teaching Position				
Teacher I	3.27 (0.55)	3.24(0.46)	3.47 (0.49)	2.95 (0.53)
Teacher II	3.28 (0.45)	3.13 (0.40)	3.34 (0.48)	2.93 (0.51)
Teacher III	3.07 (0.45)	3.04 (0.47)	3.36 (0.45)	2.81 (0.43)
Master Teacher I	3.13 (0.64)	3.13 (0.81)	3.53 (0.50)	3.07 (0.58)
Master Teacher II	2.80 (0.47)	2.92 (0.61)	3.16 (0.52)	- 0.50
F-value	1.735	1.206	0.803	0.569
Sig	0.148 NS	0.313 NS	0.526 NS	0.686 NS
Grade level Handled				
Kinder	2.95 (0.55)	2.88 (0.48)	3.20 (0.66)	2.70 (0.40)
Grade 1	3.11 (0.46)	3.30 (0.37)	3.39 (0.45)	3.06 (0.40)
Grade 2	3.46 (0.49)	3.28 (0.43)	3.58 (0.47)	3.06 (0.51)
Grade 3	3.36 (0.50)	3.20 (0.58)	3.49 (0.60)	2.93 (0.59)
Grade 4	3.00 (0.50)	2.96 (0.40)	3.23 (0.34)	2.74 (0.58)
Grade 5	3.16 (0.48)	3.09 (0.43)	3.39 (0.38)	2.82 (0.40)
Grade 6	3.24 (0.52)	3.19 (0.55)	3.45 (0.49)	2.92 (0.51)
F-value	1.968	1.605	1.111	1.179
Sig	0.077 NS	0.153 NS	0.361 NS	0.323 NS
Subject Area Taught				
Araling Panlipunan	3.28 (0.52)	3.16 (0.49)	3.36 (0.41)	3.00 (0.26)
Edukasyon sa Pagpapakatao	2.88 (0.18)	3.04 (0.46)	3.12 (0.27)	2.92 (0.23)

Edukasyong Pantahanan at				
Pangkabuhayan	3.22 (0.34)	3.13 (0.37)	3.36 (0.47)	2.82 (0.60)
English	3.19 (0.45)	3.20 (0.44)	3.48 (0.43)	2.96 (0.50)
Filipino	3.38 (0.56)	3.23 (0.49)	3.56 (0.50)	2.98 (0.54)
Mathematics	2.95 (0.50)	3.03 (0.47)	3.25 (0.53)	2.74 (0.50)
MAPEH	3.20 (0.47)	3.10 (0.41)	3.23 (0.53)	2.83 (0.39)
Science	3.18 (0.59)	3.14 (0.62)	3.54 (0.46)	2.91 (0.72)
F-value	1.527	0.342	1.349	0.55
Sig	0.166 NS	0.933 NS	0.235 NS	0.795 NS

Legend: NS Not significant

Table 9 demonstrates the test of significant difference in terms of implementation extent when grouped by profile. The table shows that there was no significant difference in the extent of implementation of learning modules when grouped by profile, as shown in the table. This holds true all profile variables like sex, educational attainment, teaching position, grade level handled, and subject area taught. All of those produced insignificant outcomes. This suggests that the profile variables have no effect on teachers' evaluations of the extent to which Print-based Modular Distance Learning was implemented. In relation to what was previously addressed, teachers consistently view the PMDL to be of high implementation extent.

Likewise, in the overall conclusion of Talimodao and Madrigal's (2021) study found that their respondents rated the extent of demographic group implementation, notably educational attainment, as "excellent." Teachers, regardless of their level of education, were assumed to be involved in the design, implementation, and evaluation of student performance in their study.

Furthermore, they stated that teachers at all levels of education demonstrated a similar commitment to regulating PMDL implementation, implying that all teachers play a communal role in doing so. Talimodao and Madrigal's (2021) also cited that advanced degree teachers do not teach differently from teachers without advanced degrees (Buddin and Zamarro, 2009).

As a related example in the study findings of Rosales et. al. (2022), the level of PMDL implementation in terms of the grade levels taught by the teachers was likewise exemplary. This shows the extent of PMDL implementation is consistently excellent, regardless of the grade level the teachers are working with. The excellent level of module deployment in all grade levels validates Lim's (2016) findings that using modules is a successful teaching method whether for in-person instruction or distance learning. Additionally, regardless of the grades that teachers impart, they also build up systems to monitor and administer distant learning (Chan et al., 2021).

Table 10: Proposed action plan for print-based modular distance learning modality

Key Result Area (KRA)	Objectives	Activities/ Strategies	Success/ Performance Indicators	Human Resource
KRA 1– Curriculum and Instruction: Quality of the Self-Learning Modules:	1. To establish a systematic evaluation process and tool for the locally-developed self-learning modules across learning areas;	Retrain/ Reorient of module writers, editors, layout artists and validators focusing on: 1. Instructional Design and	a. Redesigned/ Refined Self-Learning Modules for PMLDL that were assessed, compliant and passed the set standards for content, language,	Master Teachers, Subject Area Teachers, Coordinator, Education Program

	2. To review/ re-evaluate the developed SLM for polishing and modification purposes of content; language; layout and design; 3. To ensure that SLM content and language are presented accurately and without errors; 4. To ensure a well-structured and appropriate SLM in terms of its physical attributes, format, and visuals; 5. To refine, redesign and/or revise the SLMs based on the results of the re-evaluation.	Organization; 2. Instructional Quality of Text and Visuals; 3. Copyright Management; 4. Assessment of Learning; 5. Grammar and Syntax • Create a Quality Assurance Team per learning area • Review the content, language and layout and design of the developed self-learning modules by field and curriculum experts • Organize discussions with the learning area module developers and editors on the results of the module review and conduct orientation on necessary modifications/ enhancement in the SLMs • Refine the SLMs • Validate the refined SLMs thru student evaluation/ pilot-testing	and design and layout evaluation (DepEd Order No.001 s. 2021) b. Highly satisfactory rating from the teachers and other stakeholders on the quality of the SLMs used utilizing the survey questionnaire on quality of SLMs in this study c. High level of student evaluation during the pilot-testing utilizing the survey questionnaire on quality of SLMs in this study	Supervisors, Public Schools District Supervisors
Key Result Area (KRA)	Objectives	Activities/ Strategies	Success/ Performance Indicators	Human Resource
KRA 2 –Policies and Procedure Implementation of Print-based Modular Distance Learning: Distribution and Submission of Self-Learning Modules	1. To develop well-planned policies and procedures for PMDL implementation.; 2. To ensure the weekly distribution and submission of modules; 3. To inform the parents or guardian of the distribution process including the health and safety protocols; 4. To guide the teacher, learners and parents/ guardian in the conduct of PMDL; 5. To orient the teachers, learners, parents or guardian on the policies and procedure in the implementation of PMDL	• Craft and Implement Policies and Procedure in the PMDL • Acquaint the Teacher/ Parent and Learners' on the distribution and submission of printed SLMs	a. High extent of PMDL implementation using the evaluation survey instrument b. 100% attendance of parents, teachers and learners in the orientation. c. Zero cases of untoward incidents on the implementation of PMDL d. 100% submitted proof of participation thru accomplishment receipt forms	School Head, Master Teachers, Class Advisers, Non-Teaching Personnel; Parents;

Key Result Area (KRA)	Objectives	Activities/ Strategies	Success/ Performance Indicators	Human Resource
KRA 3– Delivery of Instructions Implementation of Print-based Modular Distance Learning: Completion and Application	1. To review the suggested time frame in accomplishing the tasks in the SLM; 2. To provide the learners and the learning facilitator with a clear and detailed Weekly Home Learning Plan to guide them in accomplishing the tasks in the SLM at home. 3. To educate parents and guardians of the learners about the different strategies for teaching that are used in the SLMs	• Conduct Focal Group Discussion and Review the Time Frame in Accomplishing the tasks in the SLMs • Establish a weekly schedule for home learning to guide the parents and learners • Arrange training programs for parent and guardian in support to the delivery of instructions at home.	a. 100 % of learners accomplished and returned the modules on time b. 100% of the WHLP was reviewed and approved to guarantee its quality in meeting the learning objectives c. 100% of learners were provided with WHLP during the established weekly schedule of distribution d. 100% of teachers and parents participated in the FGD and training program	School Head, Master Teachers, Class Advisers, Non-Teaching Personnel; Parents
Key Result Area (KRA)	Objectives	• Activities/ Strategies	Success/ Performance Indicators	Human Resource
KRA 4– Assessment and Monitoring Implementation of Print-based Modular Distance Learning: Monitoring of Learner's Progress	1. To regularly monitor and utilize the Individual Monitoring Plan 2. To provide timely feedback to improve learners' performance 3. To provide necessary assistance to parents and students at the School Learning Clinic in order to address the problems of students and parents/guardians who facilitate instruction delivery at home.	• Monitor and assess the accomplishments in the Individual Monitoring Plan • Intensify the offered intervention (School Learning Clinic) to help address the concerns of learners and learning facilitators at home. • Schedule In-Home Visitations	a. 100% of learners received timely feedback on their performance b. 100% Compliance of the Individual Monitoring Plan c. 100% of cases in SLC were addressed based on the daily accomplishment and in-home visitation reports	Master Teachers/ Subject Area Teachers/ Coordinator

Given that all indicators received high scores and were regarded to have high levels of quality and implementation, Table 10 demonstrates how the quality of self-learning modules and the extent of PMDL implementation can still be improved. The recommendations based on this study indicate modification and enhancement of the print-based modular distance learning experience, which could be viable for teachers, parents, and students.

Several areas for improvement were considered in the Proposed Action Plan for Print-based Modular Distance Learning. These categories were assembled based on the quality indicators of self-learning modules and the 4-step procedure used for PMDL implementation that need modification and further improvement of the said distance learning delivery modality.

The components of the Action Plan include Key Result Area (KRA), Objectives, Activities/Strategies, Success/ Performance Indicators, and Human Resources. Key Result Areas, or KRAs, outline the recognized key areas for improvement that are essential for optimizing the learning delivery plan. The program objectives determine the plan's direction detailing the desired accomplishment using SMART criteria. The particular action/steps or set of tasks that must be completed to accomplish the objectives are specified in the activities and strategies. Success or performance indicators show whether goals were attained. The people responsible for carrying out these actions or plans are identified by human resources.

The quality of the self-learning modules is Key Results Area 1's primary concern when it comes to curriculum and instruction. The quality must be guaranteed as the major teaching tools for PMDL's adaptable pedagogical approach. The action plan recommends the educational institutions to establish a systematic evaluation process and tool to ensure the quality of locally produced self-learning modules across all learning areas. They are advised to review or reevaluate the created SLM so that any necessary improvements can be done to guarantee that the content, language, layout, and design are accurate and impeccable. It is vital to make corrections, modifications, and optimizations in order to produce a high-quality learning resource for PMDL.

The development of well-thought-out policies and procedures for the implementation of the PMDL is the focus of the second Key Results Area, or KRA 2, on Policies and Procedures. This focuses mainly on the distribution and submission of self-learning modules, whose evaluation results are less favorable than those for the other process steps in implementing PMDL. Policies and procedures in the PMDL implementation will assist the school with adherence to the guidelines of the Department of Education, give a structure for addressing and resolving difficulties, and yield the greatest outcomes for the stakeholders in the school.

The third Key Results Area, or KRA 3, on the delivery of instruction, was incorporated into the action plan in order to address the sub-variables in the completion and application parts of the four-step PMDL implementation process. This focuses in particular on the amount of time allocated for students to finish the module's tasks. Also, this aims to educate parents and guardians of learners, who serve as learning facilitators at home, about the various teaching methods employed in SLMs.

The action plan's last Key Result Area, or KRA 4, focuses on the assessment and monitoring of learners' progress. KRA 4's goals are to regularly utilize the Individual Monitoring Plan, monitor student achievement, and deliver timely feedback. Also, to offer parents and students the support they need for the at-home delivery of instruction.

G. Conclusion

1. In terms of demographic profile, most of the respondents were female and most were found to be in Teacher 1, 2 and 3 positions. Filipino, Mathematics, and Araling Panlipunan were the subject areas taught by majority of the participants.
2. As regards to the evaluation on the quality of self-learning modules across learning areas, the respondents found the self-learning modules utilized of high quality.
3. The extent of implementation of Print-based Modular Distance Learning had been rated as high by respondents.
4. There was no significant difference among the responses of the respondents when they were grouped

according to sex, educational attainment, position, grade level handled and subject area handled in the quality of self-learning modules and extent of implementation of Print-based Modular Distance Learning.

5. The proposed action plan was designed to enhance the quality and implementation of the Print-based Modular Distance Learning based on the findings of this study.

H. Recommendations

1. The Department of Education Central Office and Bureau of Learning Resources in the region and division may re-evaluate the developed self-learning modules and the distribution processes to improve the quality of modules for learners and the process for implementing print-based modular distance learning.
2. School administrators and other stakeholders may assess the practices implementing the print-based modular learning modality to come up with an improved implementation plan if and when the need arises. A training program may be designed to provide teachers with information and skills needed to effectively implement the modality.
3. School administrators should also employ adequate instructional supervision and monitoring at all stages of implementation. This will ensure that PMDL remains of excellent quality and is implemented in a timely and appropriate manner.
4. The school program planning team may also develop strategies to promote parents' participation and compliance to address the challenges and difficulties that the parents may have had experienced in implementing the PMDL in their homes as part of its intervention program.
5. Curriculum experts, module developers, and validation specialists may review the content, language, and layout of self-learning modules. SLMs can be made simpler, more effective, and error-free to ensure mastery of the essential competencies and meet the quality standard.
6. Teachers may undergo intensive training on how to integrate modules into classroom teaching in order to use them effectively. By taking advantage of this method of instruction, teachers will be able to supplement face-to-face instruction as needed.
7. The proposed action plan may be tabled for discussion by the school administration and other stakeholders for better implementation of print-based modular distance learning when and if the need arises.
8. Future researchers should do more research that focuses on the learners' contexts and how they progressed in the print-based modular distance learning system. In addition, they should examine other demographics not covered in this study to draw a more accurate picture of how PMDL is implemented at different levels of education.

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