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MODULAR DISTANCE LEARNING: ITS EFFECT IN THE ACADEMIC PERFORMANCE OF LEARNERS IN THE NEW NORMAL

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Abstract. Due to the Covid-19 pandemic, schools, particularly in the rural areas employed Modular Distance Learning (MDL) to ensure educational continuity. This study seeks to investigate the effects of MDL in the academic performance of learners whether there is a significant difference in their performance before and after the implementation of MDL. A mixed-method was applied in this study; Quantitative using T-Test to compare the GWA of learners and Qualitative through the use of the semi-structured interview to find out the perceived effects of MDL to 15 parents, ten learners, and seven teachers, and their recommendations. The study revealed that the 2.25% decrease in the GWA of learners after the implementation of MDL denotes a significant difference in their academic performance. MDL strengthens family bonding, independent learning, and is cost-effective. However, it is an additional workload to working parents, there is limited teacher-learner interaction, learners lack socialization with other children, and have no exposure to significant school activities but are rather exposed to many distractions at home. To bridge the gaps, simplifying modules accompanied by video lessons and audio recordings, conduct of online mediations, neighborhood instruction, and home visitations are recommended. The results of this study will help teachers reflect on their current teaching strategies and improve learning outcomes. Future researchers who will conduct research related to “Modular Distance Learning” may also consider the findings of this study in drafting their related concepts.

Keywords: Modular Distance Learning; Academic Performance; New Normal

I. INTRODUCTION

The widespread prevalence of the COVID-19 pandemic has severely affected the educational system around the world. For instance, most countries temporarily closed schools and other educational institutions to limit the spread of the Corona Virus (Tria, 2020). When educational institutions were closed, learners, as well as teachers, miss the opportunity to socially interact which is essential to learning and development. DepEd Secretary Briones emphasized that the basic education learning continuity plan is the response of the Department of Education to the challenges brought by coronavirus outbreak (Montemayor, 2020). To maintain the education of millions of Filipino learners and for every school to still attain its mission and vision which is to provide quality education to every Filipino learner, the Department of Education implemented Modular Distance Learning (Dangle & Sumaoang, 2020).

Modular Distance Learning (MDL) involves individualized instruction that allows learners to use self-learning modules (SLMs), whether printed or in digital format which are centered on the Most Essential Learning Competencies (MELC) provided by DepEd (Martinez, 2020). Teachers

provide learners with the SLMs which include distribution and retrieval as well as giving assessment tools to check for understanding and provide immediate and appropriate feedback. In Modular Distance Learning, the teacher takes responsibility for monitoring the progress of the learners through home visitation, if possible. Learners may ask assistance from the teacher via text messages, cell phone, or even email (Llego, n.d.). Modular Distance Learning is a response to the “No Child Left Behind Act” where children must receive the best education possible, leaving no child behind (No Child Left Behind Act, 2002). Through the use of SLM, this mode of learning becomes accessible to more learners. MDL was seen to be most preferred by families, for a reason that it is cost-efficient or families would save much. While families would save much, it will cost the government much for just the billion pages of SLMs for millions of public school learners. Moreover, the creation of modules was done in a short period, so errors in the modules were involved such as factual, computational, clerical, printing, and typographical errors which the Department of Education assured that they are monitoring and rectifying this errors (Gonzalez, 2015).

Research Questions

This study seeks to investigate the effects of “Modular Distance Learning” in the academic performance of learners in the new normal.

Specifically, this study sought to answer the following questions:

1. What is the academic performance of pupils in Bokod Central School before and after modular distance learning?
2. Is there a significant difference in the academic performance of pupils in using modular distance learning?
3. What is the effect of modular distance learning on the academic performance of learners as perceived by: (a) Learners, (b) Parents, and (c) Teachers?
4. What interventions can be proposed to improve the academic performance of learners in the new normal?

Significance of the Study

The findings of the study redound to the benefits of teachers and school administrators to reflect on their current teaching practices and develop possible interventions to improve learning outcomes. This will give a significant plan for educators to improve the teaching-learning process and how modular distance learning can be implemented effectively. This study can help teachers because it would serve as an eye-opener for them in knowing the effects of MDL in learners’ academic performance so that they can implement appropriate guidelines and instruction.

Modular Distance Learning would help learners to be trained them on time management, setting their priorities, solve and answer the problems and questions given in their modules and helps learners mentally and it can be associated with developing self-regulation skill by being independent. With this, learners can have a positive and academic attitude towards the new learning modality.

Ultimately, the result of this study would motivate the parents to extend more assistance and guide their child/children through the modular lessons that would be sent to learners while doing remote learning. Through Modular Distance Learning, parents would be able to identify their child/children’s strengths and weaknesses when doing their assigned task incorporated in their modules.

II. METHODS

This study will be using the qualitative and quantitative type of research. Qualitative research involves the collection and analysis of narratives or open-ended observations through interviews while Quantitative research relies on data that are observed or measured to examine questions about the sample population (Ahmad, et. al, 2019). The researchers conducted the study in Bokod Central School located in an rural area of Benguet. Fifteen (15) parents, ten (10) learners, and seven (7) teachers are the respondents of the study.

For the Quantitative method, the data collection was executed using the following instruments: (1) General Weighted Average to show the academic performance of learners before and after the implementation of MDL and (2) a t-test will be used to find the significant difference in pupils’

academic performance before and after the implementation of Modular Distance Learning.

For the Qualitative method, the researchers used interview guide questions to find the effects of Modular Distance Learning as perceived by learners, parents, and teachers. As for the data collection, the researchers gathered all the answers of the respondents and broke the data into small segments that reflect a single and specific answer. After the arrangement and finalizing of the gathered data, the researchers analysed the qualitative data and determined the effects of MDL formulated in the respondents answers through the interview guide questions. Lastly, the researchers generalized the meaning of the gathered data and grouped it into themes- the positive and the negative effects of Modular Distance Learning and the interventions to be used.

Formal consent was sought from the school and respondents were interviewed with the permission of the principal. The respondents will be ensured of the confidentiality of the information that will be gathered. Their responses and information gathered were used only for research purposes.

III. RESULTS AND DISCUSSION

From the collected data, various effects were found in the implementation of Modular Distance Learning (MDL) especially in pupils’ academic performance.

TABLE I
 GENERAL WEIGHTED AVERAGE (GWA)

Quarter	Before MDL (S.Y. 2019-2020)	After MDL (S.Y. 2020-2021)
1	87	85
2	88	85
3	89	87
4	89	87
Mean	88.25	86

Table 1 shows the data collected before and after the implementation of Modular Distance Learning (MDL). The mean of the four (4) quarters before the MDL implementation is 88.25% while after the Modular Distance Learning the mean is 86%. This implies that there is a 2.25% difference between the mean before and after the implementation of MDL.

TABLE 2
 T-TEST: PAIRED TWO SAMPLES FOR MEANS

	Before MDL	After MDL
Mean	88.25	86
Variance	0.916666667	1.333333333
Observations	4	4
Pearson Correlation	0.904534034	
Hypothesized Mean Difference	2.25	
df	3	
t Stat	9	
P(T<=t) one-tail	0.001447906	
t Critical one-tail	2.353363435	
P(T<=t) two-tail	0.002895812	
t Critical two-tail	3.182446305	

The above table indicates the computed T-test of the data in table 1. The researchers used alpha (α)= 0.05 with a confidence level of 95%. The computed degrees of freedom (df) is 3 and when using the t-table for the two-tailed test, the df and the alpha value would intersect on 3.1824. As a result, 3.1824 would be the critical value (t_{crit}) and the statistical value (t_{stat}) would be 9.

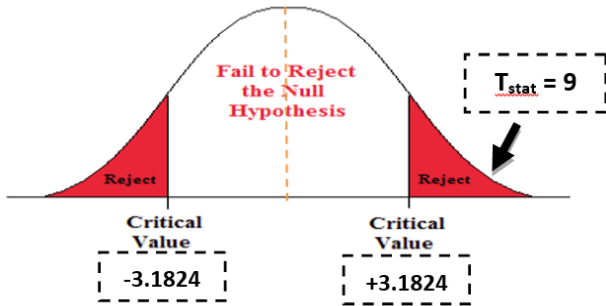


Fig. 1 Normal Distribution Curve of the Data

Figure 1 shows the rejection region of the pair sample t-test. From table 2, the critical value for the two-tail is 3.1824. The researchers used a two-tailed test, so the rejection region on the upper portion of the graph would be positive 3.1824 while the lower rejection region would be negative 3.1824. The confidence level is 95%. Consider the null hypothesis which is ($H_0: \mu_{\text{before MDL}} = \mu_{\text{after MDL}}$) in other words there is no difference between the means while the alternative hypothesis is ($H_1: \mu_{\text{before MDL}} \neq \mu_{\text{after MDL}}$) in other words there is a difference between the means of the two sets of data. If the computed statistical value (t_{stat}) is less than -3.1824 and greater than +3.1824, the null hypothesis would be rejected. On the other hand, if the t_{stat} is between -3.1824 and +3.1824 you have failed to reject the null hypothesis which means the sample did not provide sufficient evidence to conclude that the effect exists. In table 2, the computed t_{stat} is 9. Therefore, the t_{stat} which is 9 is greater than the t_{crit} which is 3.1824 ($t_{stat} > t_{crit}$). In this case, the null hypothesis would be rejected which means there is a significant difference between the average scores of pupils before and after the implementation of Modular Distance Learning (MDL).

Three major themes emerged from the analysis of the current data set: Positive effects of Modular Distance Learning; negative effects of Modular Distance Learning; and interventions to be used to improve the academic performance of learners in the new normal.

A. Theme 1: Positive Effects of Modular Distance Learning (MDL)

1) Strengthening Family Bonding

It was revealed that MDL is an aid in having a greater parental involvement of parents to their child/ children. Parents may have bonded with their child/ children through tutoring. Strong family ties are developed when learners and their parent/s are learning together as a form of bonding time.

2) Asynchronous learning

This type of learning is known as independent learning where children learn at their own pace. Its premise is learning in different times and spaces (Finol, 2020). Learners will answer their modules on their own and devise ways on how to understand their lesson which in a way can develop good study habits in a way that they develop the sense of responsibility in accomplishing the task provided in the modules. The learners are provided with modules, worksheets, or textbooks that aid in their independent learning process. This modality is based on constructivism theory where learners are actively constructing their knowledge through their own experiences (Elliott, et. al. 2020).

3) Cost-Effectiveness

Cost-effectiveness is an obvious factor of MDL. It is to save time and cost especially transportation allowance. Not having learners to commute to school and subsequently saving money was reported by most parents. Equations should be placed flush-left with the text margin. Equations are centered and numbered consecutively starting from 1 as follows

B. Theme 2: Negative Effects of Modular Distance Learning (MDL)

1) Limited Teacher-Learner Interaction

It was revealed that having no interactive relationship between the teacher and the learners will lead the learners to not be interested to learn and refuse to explore their potentials on their own. Learners are not able to interact with their teacher to ask questions with regards to their lesson that leads to a lack of processing of the module's content as well as a lack of explanation coming from the teacher. Some learners rely on the key answers included in their self-learning modules, so even errors were copied which gives teachers the thought that pupils aren't reflecting well on what they are studying. In that case, the teacher will no longer determine if the pupils understood the content of the module or is it the work of the learners.

2) Additional Workload to Working Parents

It is especially challenging if the parents are working from home or offices, and have their schedules to follow. Keeping their children in check all the time was very difficult for them. Not all parents can give their whole time in guiding and assisting their child/ children in answering their modules, for a reason that parents are working to earn a living especially at this time of the pandemic. Some parents also added that there are lessons that they have difficulties with or having a hard time explaining and teaching their kids.

3) Distractions at Home

Parents and teachers expressed that children tend to be distracted at home especially when gadgets are being available. Learners spend more time watching television or playing online games wherein parents think that they are researching but they are just playing computer games. Many children are considering this time as a vacation from school, hence they want to sleep and wake up according to their wish and spend the rest of the time playing video games and watching

cartoons/ movies. In that case, learner's works will be hastily done because they spend most of their time playing rather than studying.

4) *No exposure to significant school activities*

Curricular and co-curricular activities are part of the teaching and learning process. Extracurricular activities provide learners with the self-confidence to become well-rounded individuals (Naik, 2018). It was evident that in the new normal in education, extracurricular and other school activities have been restricted. Differentiated activities such as role-plays, educational games, and other group activities are not being observed in modular distance learning. Postponement of the school's extracurricular activities like field trips, school retreat, foundation day, and other activities will surely be missed by the learners this school year.

5) *Too many activities in the module*

It was revealed that SLMs are activity-centered, it is more on paper and pencil activities. Learners complained that there are too many tasks/ activities incorporated in the modules. As parents observed, learners tend to become lazy in studying because SLMs are more on the usual question and answer and are also limited to reading and writing.

6) *Lack of socialization with other children*

A large number of parents were worried that in the wake of the pandemic, the social development of their children was affected at a deep level. Especially in the case of younger children, loss of interaction with peers and their normal environment had influenced the development of their social skills. Schools play a huge role in disciplining and polishing social skills; modular distance learning has taken away that opportunity from learners and parents were now looking for other ways to help develop these skills.

7) *Errors in some modules*

During this pandemic, learning modules play an important role in the learning of millions of public school learners. The opening of classes was delayed twice to allow schools, teachers, learners, and parents to prepare for the demands of distance learning. But the postponements, it seemed were not enough to ensure that the education department's learning materials were error free. As said by Education Undersecretary Diosdado San Antonio in his interview "not all modules prepared this year underwent quality assurance" (Magsambol, 2020).

C. *Theme 3: Interventions*

1) *Simplify modules or workbooks accompanied by video and audio lessons*

The Department of Education should consider reducing the number of activities included in the Self-learning modules. The learners, especially the elementary learners tend to get uninterested and worn out by merely seeing many activities to be answered given their short attention span. It is also highly recommended that printed SLMs are to be accompanied by video and audio lessons. Teachers have to take advantage of what technology can offer by utilizing applications for video and audio making to enrich learning and still be able to deliver their lessons efficiently. Moreover, through this, the learners

who have no internet connections due to economic constraints and location are catered to as they can utilize these materials offline.

2) *Home Visitation*

The teachers must do constant monitoring to learners to learn more about the learners' needs and their home environment. This will help the teachers to have a better understanding of the factors that affect the learners' performance. This too is an opportunity to cheer them up and encourage them for they look on the importance of having a teacher beside them.

3) *Conduct Online Mediation*

To address the problem of the limited interaction between the teacher and the learners and the lack of socialization among the learners, implementing a blended learning modality (combination of modular and online learning) is recommended. Teachers need to set a schedule for online mediations through any available and accessible online platforms that allow the teacher and the learners to freely communicate with each other.

4) *Neighborhood Instruction*

Aside from home visitation, neighborhood teaching to address the concerns of learners and at the same time assist them in accomplishing their learning tasks must also be conducted at least twice a month. Here, learners will be clustered according to their sitios and the teacher living in the same sitio or assigned in that particular sitio will be the one to cater to the learners' needs. This is also an avenue for teacher-learner and learner-learner interaction but with the assurance that minimum health protocols are strictly observed.

IV. CONCLUSIONS

Noting the results of the study, the following are hereby concluded. The academic performance of learners after the implementation of Modular Distance Learning (MDL) decreased. It only means that face-to-face which is the most important side of physical learning was more favorable and more effective in terms of children's learning. It was determined that there were more negative effects of MDL than positive ones. According to the respondents, limited interaction between the teacher and the learners was the main problem that emerged in the implementation of Modular Distance Learning. Another problem is that there are too many tasks/ activities incorporated in the modules. Hence, constant monitoring of teachers (home visitation) on the progress of learners to be able to give feedback mechanisms and guide those learners who need special attention is a must. The administration should concentrate on improving and simplifying worksheets or workbooks to be distributed to learners accompanied with video lessons that are aligned with the Most Essential Learning Competencies (MELC). They should conduct training, seminars, or workshops for teachers to be acquainted and so that their skills in the use of Modular Distance Learning (MDL) will be enhanced. Lastly, before the opening of each school year, a meeting or open forum among teachers, parents, and other stakeholders should be conducted to further explain or discuss the reality of the new normal education.

This research paper will help future researchers who will conduct future research about Modular Distance Learning (MDL). Future researchers may consider the findings of this study about the effects of Modular Distance Learning (MDL) when they are still accomplishing their study in drafting their related concepts and should include other variables that are not discussed in this study.

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