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## **Modular Distance Learning on Teaching Performance and Learning Outcomes**

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### **ABSTRACT**

The study was conducted to determine the relationship among modular distance learning, teaching performance and learning to the teachers and learners in Pandi, Bulacan during the school year 2020-2021. In the total of 12 teachers and 374 learners who participated in the survey, majority of the teachers were in the age bracket of 26 - 33 years old while 317 or 84.8% of the pupils were in the age range of 10 - 12 years old. The evaluation on engagement, maintaining engagement, assessment of learners and reinforcement of learning outcomes, both groups had responded "evident" to "very evident". On teaching performance of 12 teachers in terms of their respective IPCRF, the teachers infer that they can carry their duties and responsibilities not only as classroom teachers but also as class advisers. The learners were able to adjust to the modular distance learning delivery modality and have met satisfactorily. On the teacher's part, there is no significant relationship among the profile of respondents, modular distance learning, teaching performance and learning outcomes, but to the profile of pupils and their learning outcomes, except for age, sex and school attended was established a direct association with GWA for the 1st and 2nd quarters. On Modular Distance Learning, there is no significant difference in perceptions about engagement, maintaining engagement, and assessment of learners, but there is a difference in opinions about reinforcement of learning outcomes.

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### **Introduction**

Many people believe education is the key to success. They strive to finish their studies in order to have a very well-compensated job. However, that notion was frozen when COVID-19 pandemic, a contagious disease, started to spike in March 2020. As a result, face-to-face contact is strictly prohibited, people are forced to stay at home, schools have suspended their classes, and many teachers are affected and are afraid to lose their job.

It is a question in mind if there will still be another school year to open. Teachers and learners need to have an effective plan to continue teaching and learning exchange without compromising the health of each individual. In addition, this should be like a cause-and-effect step to start in the side of the teachers in order to provide operative teaching performance. The hard work and efforts of the government and the teachers will be reaped and benefited by the learners.

Department of Education (DepEd) and its educators have been challenged by the pandemic Covid-19. The opening of classes for the school year 2020-2021 is now a huge threat to parents and their children (DepEd, 2020). Early this year, Education Secretary Leonor Briones reassured the parents and students that face-to-face classes and sessions won't be available in areas with high number of active cases of COVID-19 until the availability of the vaccine is present (Montemayor, M.T., 2020).

As an option in physical classes, DepEd is looking into the implementation of modular distance learning. Modular distance learning involves individualized instruction that allows learners to use self-learning modules (SLMs) in print or digital format/electronic copy, whichever is applicable in the context of the learner, and other learning resources like Learner's Materials, textbooks, activity sheets, study guides and other study materials.

A module is a book or workbook of reference made by lecturers in individual polytechnics to fit the unique needs and interests of their students and aims at the comprehensive development of reading, writing, listening and speaking. Many of these modules include directions for students to perform tasks, both as a means of practicing the learning and to assess student comprehension. The content, thickness and usage of the module vary from polytechnic to polytechnic. It is very similar to the textbook which is basically a collection of the knowledge, concepts, and principles of a selected topic or course; usually written by one or more teachers, college professors, or education experts who are authorities in a specific field; which provide us with supplemental teaching materials, ideas, and activities to use throughout the academic year (Cheng, 2020).

Using a teaching module to teach the students as compared to the traditional method of using a textbook is meant to increase active learning and improve critical thinking, as well as problem solving skills. It also gives the lecturer the opportunity for conducting formative assessment in the classroom. Standardized textbooks have their own styles, and their contents, depth of coverage of materials, and organization, may affect the teaching and learning environment. Thus, the use of a module presents a more flexible learning environment for both instructors and learners (Cheng, 2020).

Identified teaching personnel together with the Education Program Supervisors prepared modules starting in May 2020 in all subjects for all grade/year level across four quarters in accordance to the “Most Essential Learning Competencies”. These self-learning modules are already considered learning packages containing pre-test, discussion, and a series of evaluation/assessment. They are distributed to all learners with the modular learning class schedule. The class will guide the learners on what subjects and modules they have to study and learn for the particular week. Learners will just focus on two subjects in a week with the intended number of modules per subject. Textbooks and other learning materials in schools are also ready for dissemination as additional learning references (Bagoood, 2020).

This method allows students to continue learning while staying at home by delivering lessons through various ways, such as online, television, radio, and printed materials. Adoption of various learning delivery options such as but not limited to face-to-face, blended learnings, distance learnings, and homeschooling and other modes of delivery shall be implemented depending on the local COVID Risk Severity Classification and compliance with minimum health standards.

Because of the pandemic, learning materials should be made simpler and more manageable to guarantee a certain level of success and self-satisfaction on the part of the learners. Innovations will also be done to make learning more fun and enjoyable for kids. Thus, this will improve the learner’s chances of getting employed in the future, enhance job performance, or help them deal effectively with immediate social issues.

The department has initiated the development and integration of Self-Learning Modules (SLMs) with the identified alternative learning delivery modalities and has planned to distribute them for printing and utilization in the field after their development.

Likewise, Lim (2016) concluded that the use of modules in teaching Math specifically word problem solving, is an effective teaching approach. Effective in the sense that it helps the subjects of the study learn the concepts in mathematics without cramming in keeping up with the pacing of the teacher. The use of modules in teaching these particular concepts in Math was very useful for the subjects in developing their individual learning study habits.

All these findings are summed up in the discussion of Nardo (2017) on the benefits of using modules in instruction. She stressed that modules lead to the acquisition of a better self-study or learning skills among students. She added that students engaged themselves in learning concepts presented in the module and developed a sense of responsibility in accomplishing tasks provided in the module. She also noted that with little or no assistance from the teacher, the learners progressed on their own. They learned how to learn; they were empowered.

The teaching and the learning environment are grasping various advancements, and a portion of these includes the utilization of innovation through mixed learning. This creative instructive methodology has been grasped quickly however it experiences a procedure. The presentation of mixed learning activities is a piece of these advancements yet its take-up, particularly in the creating scene faces difficulties for it to be a viable development in instructing and learning. Mixed learning adequacy has a lot of basic factors that posture difficulties. One major test is about how clients can effectively utilize the innovation and guaranteeing members' responsibility given the individual learner qualities and experiences with innovation.

Every learner has different ways to learn. Some people are hands on learners or visual learners. Teachers try to adapt the way they teach; to the way their learners learn the best. The information that is being taught should be made fun so that the learners remember the information. Schools are also using new technology to help students learn. Different learning styles have different effects on people. Different learning styles are the talk of many school districts from near and far.

Learning is a process of gaining knowledge through experiences. Every learner has his own different learning style. To understand learning, one must also understand the role of behavior in relation to learning. In psychology, classical conditioning, and instrumental conditioning are two types of learning that explain changes in behavior. The relationship between learning and cognition is necessary and their relationship helps to understand learning. With a definition of learning along with an understanding of behavior, the types of learning, and cognition, one can understand what learning is.

In a study by Burroughs N. et.al, (2019), the researchers stated that an effective teacher can be determined by the learning outcomes shown by the students. If teacher’s experience is going to be defined, it refers to the number of years accumulated by the teacher as a classroom teacher. Learning outcomes, on the other hand, Center for Innovation for Teaching and Learning, (2020), defined it as the measurable terms that explains what the students learned and how are they going to apply this knowledge not only during the course.

Based on the realities prompted above, this study determined if there are relationship among modular distance learning, teaching performance and learning outcomes on teacher and learners.

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## Statement of the Problem

The objective of this study is to determine the relationship among Modular Distance Learning, Teaching Performance and Learning Outcomes of the Teachers and Learners in Pandi, Bulacan during the School Year 2020-2021.

Specifically, it sought answers to the following questions:

1. How may the demographic profile of the respondents be described in terms of:
  - 1.1 age;
  - 1.2 sex;

- 1.3 name of school; and
- 1.4 length of service of teachers?
2. How may the modular distance learning be evaluated by the respondents as to:
  - 2.1 engagement of learners;
  - 2.2 maintaining engagement of learners;
  - 2.3 assessment of learners; and
  - 2.4 reinforcement learning outcomes?
3. How may the modular distance learning be evaluated as to:
  - 3.1 teaching performance; and
  - 3.2 learning outcomes?
4. Is there a significant relationship among the profile of respondent, modular distance learning, teaching performance and learning outcomes?
5. Is there a significant difference between the perceptions of the teachers and learners as to modular distance learning?
6. What difficulties are encountered by the teachers in using modular distance learning to the learners?
7. What are the hindrances met by the learners in adapting to modular distance learning?

### ***Hypotheses***

This study was guided by the hypotheses below:

1. There is no significant relationship among the profile of respondents, modular distance learning, teaching performance and learning outcomes.
2. There is no significant difference between the perceptions of the teachers and learners on modular distance learning.

### ***Conceptual Framework***

Modular Distance Learning as an independent variable of this study has a significant role to the learning outcomes of the students as a dependent variable. Motivation is viewed as an outcome because, similar to how cognitive criteria such as course grades are used to assess learning outcomes, affective elements such as intrinsic motivation can also be used to assess learning outcomes (Kuo, Walker, Belland, & Schroder, 2013). According to research, online users have a high level of motivation. Persistence in their studies is a result of learners (Menager-Beeley, 2004).

In a definition by Dejene and Chen, (2019), a module is an independent, self- instructional, self-managed, intuitive, adaptable, practical, and needs-based learning asset that contains plainly characterized goals and useful educating learning exercises and evaluation. It is a self-learning bundle that manages a particular theme or unit which can be utilized by an understudy as it thinks about individual contrasts and gives chances to learning at the understudy's own pace, as per their capacity level and needs, in any setting advantageous to the person in question. Additionally, a module is an instructional material that is proven to be effective in enabling a student to become independent, self-pacing, self- progressing and fulfilled. This is made possible because a module allows the learner to control over his or her own learning and modular instruction provides opportunities for independent interesting study.

On the contrary, in terms of higher education, modular distance learning has exhibited insufficient exposure of teachers to online teaching, the knowledge gap, a non- conducive learning environment at home, equity, and academic quality. Due to reduced contact hours for learners and a lack of communication with teachers when learning/understanding challenges, students' academic performance is likely to suffer in classes held for both year-end and internal examinations (Sintema, 2020)

Students are assessed online, which involves a lot of trial and error, as well as doubt and confusion among teachers, students, and parents. The method used to administer online exams differs depending on the convenience and expertise of the instructors as well as the compatibility of the students. Many schools and institutions have yet to implement appropriate plagiarism-checking procedures, owing to the enormous student population.

According to Kemp and Smelie (1989), individualizing instruction plays a big role in modular instruction. Its main attributes include the individual assuming responsibility for their own learning, proceeding with activities and materials at their own level and studying at their own pace. This principle is in consonance with Thorndike's law of readiness and law of effect where the law of readiness states that when a person is prepared to respond or act, giving the response is satisfying and being prevented of doing so is annoying.

Oxford (n.d) defined Law of Readiness as learning is dependent upon the learner's readiness to act, which facilitates the strengthening of the bond between stimulus and response. Thus, an athlete who is highly motivated and eager to learn is more likely to be receptive to learning than one who is poorly motivated.

Aligned with the Law of Readiness, Flight Literacy, (2020) discussed that students best procure new information when they see an unmistakable justification doing as such, frequently show a solid premium in realizing what they accept they need to know straightaway, and will in general save things for which they see no quick need. For instance, starting flight understudies ordinarily disregard the flight teacher's idea to utilize the trim control. These students accept the control burden is a sufficient method to control the airplane's control surfaces. Later in preparing, when they should redirect their consideration from the controls to different assignments, they understand the significance of trim.

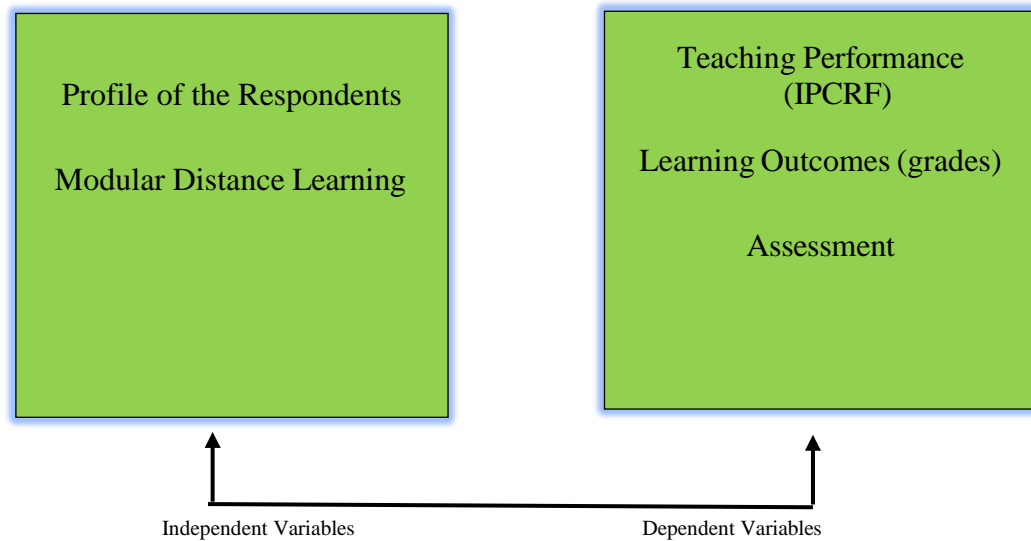


Figure 1: Research Framework

Based on the conceptual framework, it will help us to understand the research problem and its relationship to the concept.

In independent variables are the profile of the respondents and modular distance learning. While in dependent variables include teaching performance (IPCRF), the learning outcomes which refer to the 1<sup>st</sup> Quarter and 2nd Quarter grades of the learners of the school year 2020-2021 and lastly, the assessment.

## METHODOLOGY

This chapter discusses the main method of research together with the procedures, and sources of data utilized in the study. It also includes the research design, data gathering techniques, sampling procedure and data analysis scheme which were used in the analysis and interpretation of data.

### *Research Design*

This study's research design provided an important avenue. In addition to interviews and observations, the researcher employed a questionnaire to collect data. The data acquired in the questionnaires was validated using the interview methodology.

According to Calderon (2011), a descriptive method is a purposive design of gathering, analyzing, classifying and tabulating data about any prevailing condition or situation. Similarly, Aquino (2010) describes research method to be a descriptive study as being a process of systematically describes the situation or areas of interest factually and accurately. It gives a statement or area on interest of the topic of the study of what is currently existing. And for Calmorin (2000), a descriptive research is suitable wherever the subjects of the study vary among them when and is useful in knowing to which different conditions and situations are obtained among the sample population of the study. Finally, the author points out that a descriptive method can be used as basis for inferences and is helpful in the solution of premedical and prevailing problems.

In quantitative data, the researcher administered the prepared survey questionnaire to the teacher and learner respondents on Google Forms. After analyzing the gathered data, a semi structured interviews were conducted and through the use of Google Forms.

### *Data Gathering Techniques*

The researcher sought permission from the Schools Division Superintendent of Bulacan. Upon permitted, researcher coordinated with Schools District Supervisor and Principals together with the teachers of Cacarong Bata ES and Cacarong ES. Due to the pandemic, the researcher administered the questionnaire and conducted interview to the respondents by means of social media platforms such as messenger and google forms.

Information assortment was directed in two particular phases. Phase 1 include the gathering quantitative information; and Phase 2 for the subjective part or open-ended questions.

In Phase 1, for the Instrument used, the researcher used the Classroom Observation Tool as a guide and reference to come up with a survey questionnaire. The researcher used the COT Template to conceptualize the tool that will be used in data gathering procedure for the current study. And, finally, the researcher utilized online study through Google structures with the assistance of the teachers. For situations where learner respondents can't answer the structure in view of the shortfall of the web, the analyst called them rather to get a reaction.

In Phase 2 of this research, open-ended inquiries were set up by the researcher as per the issues introduced in going before part, by which asked to chosen understudy respondents. Results from this stage were used to show up at more significant understandings of the accumulated quantitative information. The researcher likewise utilized the Google structures for the wellbeing of everybody.

### ***Sampling Procedure***

In determining the samples of the study, the researcher used the probability sampling procedure specifically the Purposive Sampling. This is a sampling technique in which researcher relies on his or her own judgment when choosing members of population to participate in the study.

In selecting the samples, and to respond to the data - gathering are the teachers from these schools composing the total of 12 teacher respondents from both schools and Grade 6 learners of both schools composing 374 learners. The 374 learners are the enrolment of the two schools based on the Learner Information System (LIS) Portal.

The table 1 shows the number of male and female teachers who were the participants of the study. And table 2 shows the number of male and female pupil who will be the participants of the study.

Table 1. Number of Teacher Respondents

| Name of School   | Male | Female | Total |
|------------------|------|--------|-------|
| Cacarong Bata ES | 3    | 4      | 7     |
| Cacarong ES      | 1    | 4      | 5     |
| Total            | 4    | 8      | 12    |

Table 2: Number of Learner Respondents

| Name of School   | Male | Female | Total |
|------------------|------|--------|-------|
| Cacarong Bata ES | 117  | 122    | 239   |
| Cacarong ES      | 78   | 57     | 135   |
| Total            | 195  | 179    | 374   |

All the respondents in tables 1-2 were the respondents in the quantitative part. For the qualitative part all teachers and 30 randomly selected pupils will be the participants.

### ***Data Analysis Scheme***

Information accumulated from the reactions of the members will be orchestrated proper understanding of the information so as to reach determinations that are progressively appropriate to the issue. The recurrence check and rate strategy will be used to think about extents of the recurrence of reaction to the absolute number of reactions.

As per Lavrakas (2008), a rate recurrence conveyance is a presentation of data that expresses the level of perceptions that exist for every datum point or gathering of information focuses. It is an especially valuable technique for communicating the overall recurrence of review reactions and other information. Rate recurrence dispersions are shown as tables or as visual charts or pie outlines.

Measurable treatment is fundamental in this examination particularly in the investigation of the statistic profile of the respondents that is accepted to be as one of the basic establishments of the overview. Having a fitting factual procedure tends to the significant worry of the exploration, of which, in this specific examination is the avocation of persuasive elements to the understudies learning Lavrakas (2008).

The information were gathered, organized, and prepared utilizing Statistical Software. To investigate and decipher the information accumulated, the accompanying factual measures were utilized:

t- test. The t-test is any statistical hypothesis test in which the test statistic follows a Student's t-distribution under the null hypothesis. A t-test is the most commonly applied when the test statistic would follow a normal distribution if the value of a scaling term in the test statistic were known.

Mean. This will be used to interpret data on the assessment of Modular Distance Learning on Teaching Performance and Learning Outcomes in Pandi, Bulacan.

## RESULTS AND DISCUSSION

This chapter deals with the presentation, analysis and interpretation of the data collected and the results of the statistical treatment employed in the study with the purpose of determining the relationship among Modular Distance Learning, Teaching Performance and learning Outcomes of the Teachers and Learners in Pandi, Bulacan for the school year 2020-2021.

The findings are analyzed and presented under each research question posed in Chapter 1. In order to address the first research question, the demographic profile of the respondents, the teachers and the learners, were gathered. Survey questionnaires (see Part I of Appendices E and F) were used to collect the data. The researcher aims to gather data on the respondents' age, sex, name of school, as well as the length of service (for teachers). Table 3 presents the personal profile of teachers and learners as to age.

### Findings

The study was conducted to determine the relationship among modular distance learning, teaching performance and learning to the teachers and learners in Pandi, Bulacan during the school year 2020-2021.

As based on the methodology undertaken in the course of the study, the answers to the research questions at the onset of investigation were ascertained and summarized as follows:

#### *Demographic Profile of Learner's and Teachers; Professional Profiles of Teachers*

In the total of 12 teachers and 374 learners who participated in the survey, majority of the teachers were in the age bracket of 26 – 33 years old while 317 or 84.8% of the pupils were in the age range of 10 – 12 years old.

Accordingly, teachers and learners as to gender and name of school that they belonged to 8 out of 12 of the teachers were females while 4 out of 12 were males. And 199 out of 374 of the learners were females while 175 out of 374 of them were males. Overall, of the 12 teachers and 374 learners who participated in the survey, there were more female teachers and learners than males and mostly they were from Cacarong Bata ES. On the other hand, as to their school, 7 out of 12 were stationed at Cacarong Bata Elementary School while 5 out of 12 of them were stationed at Cacarong Elementary School. As for the learners, 239 out of 374 were enrolled at Cacarong Bata Elementary School while the 135 out of 374 were enrolled at Cacarong Elementary School.

Correspondingly, 11 out of 12 of the teachers were appointed as regular permanent Teacher I position while only one among them was Teacher II for his/her current post. As to the years in the government service, all 12 of them were in the first five years of their teaching career or considered as novice teachers.

#### *Perceptions of Teachers and Pupils on Modular Distance Learning*

All of the item statements on engagement of learners, maintaining engagement of learners, assessment of learners and reinforcement of learning outcomes, both groups had responded 'evident' to 'very evident' to all items. Generally, both teachers and learners had affirmative perceptions on modular distance learning in terms of these four aforementioned constructs or ideas.

#### *Evaluation of Modular Distance Learning as to Teaching Performance and Learning Outcomes*

On the summary of the teaching performance of the twelve teachers in terms of their respective IPCRF, the teachers infer that they were commendable in carrying out their duties and responsibilities not only as classroom teachers but also as class advisers.

In academic achievement of the learners in terms of their General Weighted Average (GWA) for Quarters 1 and 2. Correspondingly, the summary of the academic achievement of the learners denotes that 10 for the first quarter and 2 in second quarter belonged to the bottom range of 74 – 77. The 364 pupils obtained GWA for quarter 1 that were above the passing grade of 75.0% and 99.5% and 372 obtained GWA for quarter 2 that were above the passing grade. As such, it can be said that the pupils were able to adjust to the modular distance learning delivery modality and have met satisfactorily all the requirements across all learning areas in each grade level (i.e., from K-to-Grade 6) and these academic requirements include the 'written works' and 'performance tasks.'

#### *Relationship among the Demographic Profile of Respondents, teaching Performance and Learning Outcomes*

The results imply that regardless of the age, sex, school taught, teaching position, and length of service of the teachers, the corresponding IPCR rating of the teachers and GWA for the 1<sup>st</sup> and 2<sup>nd</sup> quarters of the learners are not significantly associated with the aforementioned variables. Lastly, all these have no significant bearing on the IPCR rating of teachers and GWA of the pupils.

On relationship among the demographic profile of learners and their learning outcomes, except for age, sex and school attended had established a direct association with GWA for the 1<sup>st</sup> and 2<sup>nd</sup> quarters. Needless to say, that in the learners' case, unlike with the teachers, demographic profile can be associated with school performance and vice-versa.

#### *Relationship among the Evaluation of Modular Distance Learning and Learning Outcomes of Teachers and Pupils*

In the perspective of the teacher-respondents, results showed that there was a significant to highly significant and moderate to strong direct relationship between modular distance learning and the academic performance of the learners. In congruence therefore, in the perspective of the learner-respondents, the same trend was observed as based on the results gathered from their responses to the survey.

#### *Differences between the Perceptions of Teachers and Pupils on Modular Distance Learning*

The results of the non-parametric independent samples t-test imply that the teachers and learners had similar perceptions on engagement of learners, maintaining engagement of learners, assessment of learners but not on reinforcement of learning outcomes.

Amidst these changes and uncertainties that the learners are undergoing, the internal and external stakeholders of the school community are working together, supporting and helping one another to ensure that the learning needs of the pupils are not neglected.

#### *Difficulties encountered by the Teachers in using Modular Distance Learning to the Learners*

Based on the interview questions asked, the most difficult encounter is Measurable Assessments, second is the Assistance. To the respondents, it is difficult to find someone who will aide them in the new process of teaching and making their students learn. Checking of previous modules; Recording of Scores; Distributions and Retrieval of Modules; Availability of SLM's contents ranks third, fourth, fifth and sixth respectively.

Everybody is as yet on the interaction in adjusting to the new ordinary of instruction, but behind all those difficulties they are facing, the educators manage their work and make wake to determine the issue that they were confronting with regards to education.

#### *Hindrances met by the Learners in Adapting to Modular Distance Learning*

The hindrances met by the learners in adapting to modular distance learning. To sum it all, the five responses that top the rank are the following: (1) Takes time to read and study and answers assigned modules. (Pag aaral at pag sagot ng modyul), (2) Ask assistance from my siblings who are older than me. (Nagtatanong sa kapatid kong mas maalam), (3) Answering the modules one at a time. (Pagsagot ng modyul ng paisa-isa), (4) Difficulty of the subject matter (mahirap na paksa) and (5) Siblings (Nakakatandang mga kapatid).

Learners are having hard time now to adapt to the new normal of education, by means of these responses we can evaluate and find way to lessen and solve those hindrances.

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## Conclusions

Based on the above findings, the following conclusions were offered:

On the teacher's part, there is no significant relationship among the profile of respondent, modular distance learning, teaching performance and learning outcomes. On relationship among the profile of learners and their learning outcomes, except for age, sex and school attended had established a direct association with GWA for the 1<sup>st</sup> and 2<sup>nd</sup> quarters.

There is no significant difference between the perceptions on engagement of learners, maintaining engagement of learners, assessment of learners but not on reinforcement of learning outcomes on Modular Distance Learning.

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## Recommendations

In the light of the findings and conclusion of the study, the following recommendations were drawn:

1. The school administration may conduct trainings and Learning Action Cell (LAC) to the teachers to lessen the difficulties encountered by the teachers and learners during this time of pandemic.
2. A detailed module that is specific according to the content or subject matter and free from typographical errors is highly appreciated. Teachers are encouraged, if time permits, to review and re-assess the modules before delivering it to the students to ensure that the contents of the modules are accurate.
3. Future researchers may take on a different perspective by looking into ways of improving the current modular distance learning as a new normal approach in alternative to the face-to-face learning. It may include focus group discussions that will involve parents and the students so they can share their struggles in coping up with MDL.
4. Further study maybe conducted along this line using other parameters.

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