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Teachers' Perception, Module Innovation and Self-efficacy of Mathematics Teachers in the New Normal

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Abstract

This descriptive-correlational study was conducted to determine the relationship between teachers' perception and teachers' self-efficacy, as well as the level of module innovation and self-efficacy of teachers teaching mathematics in the new normal. It was conducted at the Division of Davao del Sur, Southern Philippines during the School Year 2020-2021. It used used purposive sampling and complete enumeration techniques in choosing the 75 Grade 4 mathematics teachers. A modified and adopted survey questionnaires were used to obtain necessary data. Results showed that the level of teachers' perception in terms of readiness to modular distance learning and teaching mathematics through modular instruction was very high; the overall level of module innovation of teachers, and the level of self-efficacy of mathematics teachers' teaching in the new normal in terms of instructional self-efficacy and professional abilities/teaching effectiveness were also very high. The relationship between the level of teachers' perception and self-efficacy was significant, as well as the relationship between the level of module innovation and self-efficacy of mathematics teachers was also significant. The very high levels of teachers' perception in terms of readiness to modular distance learning, perception, and inclination to teaching mathematics imply that the mathematics teachers were not affected by the COVID 19 pedagogically. Moreover, the very high level of module innovation implies had maintained their commitment to teaching despite the pandemic. Generally, albeit the COVID 19, the mathematics teachers remained strong to the challenges of teaching.

Keywords: Teachers' perception, module innovation, self-efficacy, mathematics, new normal

Introduction

All over the world, the COVID-19 pandemic is one of the most recent public health emergencies and it has put teachers in a difficult situation in the classroom. As reported by the United Nations Educational, Scientific and Cultural Organization, this situation has resulted in a major suspension of face-to-face classroom instruction, posing tremendous obstacles to almost 1.6 billion students in over 190 nations across the world to prevent the virus from spreading (UNESCO, 2020). So as to prevent infection due to COVID-19 outbreak, the World Health Organization recommends the conduct of alternative learning delivery (World Health Organization, 2020a).

In response to the call of WHO, private and public schools in the Philippines have also had to adjust to the new situation where face-to-face classroom instruction was prohibited. At the start of the school year, around 21,724,454 million students were enlisted for classes both public and private nationwide (Montemayor, 2020). It revealed that 8.8 million parents of these learners had chosen printed modules as the main tool for teaching-learning process according to a poll performed by the Department of Education (Magsambol, 2020).

The use of printed modules is one of the Learning Delivery Modalities (LDM) of the Department of Education (DepEd) known as Modular Distance Learning (MDL) for the School Year 2020-2021 stipulated in the basic education learning continuity plan (BE-LCP) (Llego, 2020). Moreover, it is identified in the DepEd order no. 12, s. 2020, that all Basic Education institutions shall

adopt distance education allowing multiple learning delivery modalities such as printed and online digital modes of self-learning modules (SLMs), television-based and radio-based instruction, and blended learning (DepEd, 2020b).

In the utilization of printed modules, it is significant to take into account the teachers' perception to identify the benefits and shortcomings of modular instruction, as well as their important role in the evaluation of self-learning modules as an instructional tool. In line with this, Shao and Tamashiro (2013) found that the major variables affecting student learning and achievement from primary to higher education often emerge with factors of disposition of teachers, such as enthusiasm, professional esteem and motivation to learn. In addition, the quality of instructional materials used should be of high quality and serve the objective of facilitating an effective teaching-learning process (Tan, 2019). Furthermore, instructor's self-efficacy has progressively acquired importance with the aforementioned associations of capability of teaching, methods of instruction, and student scholastic accomplishment (Klassen & Tze, 2014).

Several recent studies on the modular approach had encouraged a move directed to check the adequacy of modular teaching both positive and negative feedback. For instance, an in-depth study conducted by Dangle and Sumaoang (2020) in Baguio City have shown the main challenges which include lack of financial support in producing and distributing modules, learners struggle in studying oneself, and the lack of knowledge of the parents to guide their children academically. On the other hand, Columbano (2019) revealed the effectiveness of modules that leads to improved learning of the identified topics and skills because students could go over and over the topics, understand them better, learn at their own pace based on their ability, and develop their confidence and independence. When carrying out the activities within the module, students' feeling of personal responsibility increases (Nardo, 2017).

The study of Baloran and Hernan (2020) had shown that self-efficacy during a COVID-19 pandemic has a meaningful impact on the work commitment of the teachers in public schools among 1,340 public schools in Region XI comprising of five provinces – Davao Occidental, Davao del Sur, Davao del Norte, Davao de Oro, and Davao Oriental. Result has shown a profound degree of crisis self-efficacy with respect to effort, prevention, accomplishment, and uncertain management, and a profound degree of teachers' work commitment in relation to the institution, learners, pedagogy and occupation. Henceforward, the researcher is interested to dwell on the teachers' commitment at work specifically teaching mathematics in the new learning modality as the main implementers of the curriculum. Moreover, the researcher is engrossed in evaluating the level of module innovation utilized by the teachers in modular distance learning (printed) in teaching mathematics as well as the teachers' self-efficacy engaging the pupils in the modular teaching-learning processes. Furthermore, lacking in the current literature was related local studies in the Davao del Sur and misunderstandings about what modular learning was, the level of teachers' perception of the new normal towards effectiveness in modularization, and indicators that show their best modular learning practices. Thus, the main goal of this research was to fill the gap by determining the level of teachers' perceptions and module innovation, including their level of self-efficacy teaching mathematics in the current modality. The findings of this study would be a great help to all stakeholders to plan collaboratively to address perceived challenges in teaching Mathematics through the use of a self-learning module with the main goal to provide quality education among all learners.

Objectives of the Study

The general objective in conducting this study was to determine the level of teachers' perception and the level of module innovation relevant to self-efficacy of Grade 4 Mathematics teachers teaching in the new normal in the Division of Davao del Sur. Moreover, it specifically aimed to:

1. Determine the level of teachers' perception in terms of:
   1.1 readiness to modular distance learning; and
   1.2 teaching mathematics through modular instruction.
2. Determine the level of module innovation of teachers in terms of:
   2.1 objectives of the module;
   2.2 content of the module;
   2.3 format and language of the module;

2.4 assessment of the module; and
2.5 the usefulness of the module.

3. Determine the level of self-efficacy of mathematics teachers' teaching in the new normal in terms of:
   3.1 instructional self-efficacy; and
   3.2 professional abilities/teaching effectiveness.
4. Test the significant relationship between the level of teacher's perception and self-efficacy of mathematics teachers teaching in the new normal.
5. Test the significant relationship between the level of the module innovation and self-efficacy of mathematics teachers teaching in the new normal.

Scope and Limitation of the Study

This study determined the relationship between teachers' perception and teachers' self-efficacy, as well as the level of module innovation and self-efficacy of Grade 4 teachers teaching mathematics in the new normal in the Davao del Sur Division. Moreover, this study was limited only to Grade 4 teachers who are teaching mathematics through printed modular distance learning in all public central elementary schools of the 15 districts of the Division of Davao del Sur during the School Year 2020-2021. Further, the modules that were assessed by the teachers are the second quarter self-learning modules in Mathematics 4 developed by Region XI teachers.

Assumptions

This study was based on the assumption that teachers' beliefs and cognitive innovations contribute to their self-efficacy. According to Holzberger et al. (2013) that it was essential to examine teachers' self-efficacy not only as a cause but also as a result of instructional quality. On the other hand, Gibbs (2003) mentioned that albeit the complex and demand of teaching, teachers are required to be innovative. The focus of teaching should not be more on knowledge and skills rather on developing teachers' self-efficacy and control of their actions. Gregoire (2003) opined that if teachers self-efficacy is high, then they have the drive to implement their innovations. Moreover, Nie et al (2013) in their study recommended that academic leaders need to improve teachers' efficacy beliefs so that teaching innovation can be implemented effectively. Likewise, Hsiao et al (2011) found that teachers with high level of self-efficacy had shown better work innovative behavior.

Materials and Method

Research Design

The study used a descriptive correlational research design. Descriptive-correlational design utilizes statistics to gauge the association within two or more elements (Goertzen, 2017). Furthermore, the variables under consideration in this study were the teachers' perception of the new learning modality and the module innovation of teachers in Mathematics 4 as the independent variables, and self-efficacy of mathematics teachers as the dependent variable. The researcher used this design to find out the relationship between the level of teachers' perception and the level of self-efficacy of mathematics teachers, and the relationship between the level of module innovation and the level of self-efficacy of mathematics teachers teaching in the new normal.

Sampling Size and Technique

This study used purposive sampling and a complete enumeration technique in the selection of the respondents of the study. Purposive sampling is a non-probability sampling method in which the researcher chooses a sample element that reflects a cross-section of the population based on his or her specialized knowledge (Lavrakas, 2008). Moreover, it is a non – random technique that does not necessitate theories or an approximate number of informants (Hoagwood et al., 2015). By complete enumeration, all members of the whole population will be measured (Panneerselvam, 2004).

Respondents of the Study

The target respondents of this study were the Grade 4 teachers who were teaching mathematics in all public central elementary schools of the Division of Davao del Sur. The optimization of data on the

perception in the new normal, module innovation in mathematics 4, and self-efficacy in teaching mathematics were evaluated by the teachers to determine the indicators that lead to teachers' effectiveness. A total of 75 teacher-respondents participated in the study.

Research Instrument

A modified survey questionnaire was utilized in this study. The researcher adapted survey questionnaires and it was validated by the experts. There survey questionnaire has five parts. Part I of the questionnaire determined the level of mathematics teachers' perceptions of teaching in the new normal. The questionnaire was adopted from Alam et al. (2020) with the title Teachers' Covid-19 Awareness, Distance Learning Education Experiences, and Perceptions towards Institutional Readiness and Challenges, as well as from Harris (2005) with the title Teachers' Perceptions of Modular Technology Education Laboratories. It was composed of 20 statements divided into 10 items for each of the indicators namely: readiness to modular distance learning and teaching mathematics through modular instruction. Part II of the questionnaire drew responses from the teachers on Module Innovation in Grade 4 Mathematics for Quarter 2 Self-Learning Modules. The second part of the questionnaire was adopted from Torrefranca (2017) with the title Development and Validation of Instructional Modules on Rational Expressions and Variations and also in the Department of Education (2020c) with the title Evaluation Tool for Content DepEd-developed ADM Modules. It was composed of 25 statements divided into 5 items for each of the indicators namely: objectives, content, format and language, assessment, and usefulness of the module. This questionnaire was administered to the grade 4 mathematics teachers. Part III of the survey questionnaire determined the level of self-efficacy beliefs of mathematics teachers teaching in the new normal. The questionnaire was adopted from the study of Pabualan et al. (2016) with the title Mathematics Teachers' Self-Efficacy Beliefs Survey in all Levels of Education in Bukidnon, Philippines, and also in Bandura's Instrument Teacher Self-Efficacy Scale (1997). It was composed of 23 statements divided into 15 items for the first indicator namely instructional self-efficacy and 8 items for professional abilities/teaching effectiveness as the second indicator. The survey questionnaire was modified and contextualized to address the gap between the implementation of modular instruction and the teachers and to suit the objectives of the study. A 5-point Likert Scale by Bandura (1994) was adopted to answer the survey questionnaire with the following responses: 5 – very high; 4 – high; 3 – moderate; 2 – low and 1 – very low; and also, with corresponding criteria and interpretation set in every variable.

List 1:

For Mathematics Teachers' Perception of modular instruction, the following considerations were utilized:

Range of Means	Descriptive Level	Interpretation
4.21 – 5.00	Very High	The indicators on teachers' perception are always felt and observed. The teacher has a very high inclination for readiness in the new normal.
3.41 – 4.20	High	The indicators on teachers' perception is frequently felt and observed. The teacher has a high inclination for readiness in the new normal.
2.61 – 3.40	Moderate	The indicators on teachers' perception are sometimes felt and observed. The teacher has a moderate inclination for readiness in the new normal.
1.81 –2.60	Low	The indicators on teachers' perception are slightly felt and observed. The teacher has a low inclination for readiness in the new normal.
1.00 – 1.80	Very Low	The indicators on teachers' perception are not felt and observed. The teacher has a very low inclination for readiness in the new normal.

List 2:
For Module Innovation, the following considerations were utilized:

Range of Means	Descriptive Level	Interpretation
4.21 – 5.00	Very High	Indicators of module innovation are always evident. The module has very high reliability and quality as an instructional tool.
3.41 – 4.20	High	Indicators of module innovation are frequently evident. The module has high reliability and quality as an instructional tool.
2.61 – 3.40	Moderate	Indicators of module innovation are sometimes evident. The module has moderate reliability and quality as an instructional tool.
1.81 –2.60	Low	Indicators on module innovation are slightly evident. The module has low reliability and quality as an instructional tool.
1.00 – 1.80	Very Low	Indicators of module innovation are not evident. The module has very low reliability and quality as an instructional tool.

List 3:
For Mathematics Teachers' Self-efficacy beliefs, the following considerations were utilized:

Range of Means	Descriptive Level	Interpretation
4.21 – 5.00	Very High	The level of self-efficacy of mathematics teachers are always observed and manifested at all times. The teacher has a very high self-efficacy belief in teaching mathematics in the new normal.
3.41 – 4.20	High	The level of self-efficacy of mathematics teachers are frequently observed and manifested most of the time. The teacher has a high self-efficacy belief in teaching mathematics in the new normal.
2.61 – 3.40	Moderate	The level of self-efficacy of mathematics teachers are sometimes observed and manifested occasionally. The teacher has a moderate self-efficacy belief in teaching mathematics in the new normal.
1.81 –2.60	Low	The level self-efficacy of mathematics teachers is slightly observed and manifested in rare occasion. The teacher has a low self-efficacy belief in teaching mathematics in the new normal.
1.00 – 1.80	Very Low	The level of self-efficacy of mathematics teachers are not observed and manifested at all times. The teacher has a very low self-efficacy belief in teaching mathematics in the new normal.

Data Gathering Procedure

In gathering the relevant data for this study, the following steps were followed:

A formal letter was written to the Schools Division Superintendent of the Division of Davao del Sur, along with an endorsement letter from the dean of the graduate school and the research methodology was submitted to obtain authorization and approval for the conduct of study in the 15 public central elementary schools. The researcher furnished a copy of the approval and the endorsement letters to the office of the Public Schools District Supervisors and school principals concerned to also ask their permission and a cover letter on the respondents of the study for them to be informed and to solicit their support and cooperation to conduct the study. The survey questionnaire was given through google sheet form. The researcher shared the link to the respective respondents of the study through the school principals. With this, the researcher was safe from physical contact with all the teacher-respondents from other schools. At all times, the researcher followed the minimum public health standards and safety protocols issued by the Department of Health (DOH) such as social distancing, wearing of face mask and face shield, regular hand washing, and the use of alcohol or sanitizers upon asking.

The researcher asked formal consent to get the quarterly grades of the pupils in the 1st and 2nd grading period in mathematics only to the respective subject teacher as evidence to support that module still allows the pupils to master competencies in mathematics, and that module is highly reliable and quality assured instructional tool. The researcher assured the respondents of the confidentiality of their

responses. Upon gathering the results, the data collected were collated and subjected to statistical treatment. All the collected data from the identified respondents were treated with utmost respect and confidentiality as part of the research ethics. The data gathered was tallied, collated, and tabulated into spreadsheet software for easy processing and analysis. Tables were made to illustrate the data gathered and visually present the processed data. It was summarized, computed, and analyzed using appropriate statistical tools and statistical software.

Results and Discussion

Level of Teachers' Perception in the New Learning Modality

Table 1 shows the level of teachers' perception in terms of readiness to modular distance learning and teaching mathematics through modular instruction. With an overall mean of 4.59 (SD = 0.59), therefore, the level of teachers' perception in the new learning modality is very high.

Table 1.
Level of Teachers' Perception in the New Learning Modality

Indicators	Mean	Standard Deviation	Level of Agreement
Readiness to Modular Distance Learning	4.59	0.59	Very High
Teaching Mathematics through Modular Instruction	4.58	0.56	Very High
Overall	4.59	0.59	Very High

It was shown that readiness to modular distance learning is the indicator with the highest mean at 4.59 (SD = 0.59) described as very high. This means that the indicators on teachers' perception are always felt and observed. The teacher has a very high inclination for readiness in the new normal. Results revealed among the mean scores, the second item which states that teachers are ready to use printed modules as a tool for teaching pupils whether the offline or online form in times of pandemic is rated as the highest with a mean score of 4.71 (SD = 0.51) described as very high. The lowest mean score is the fourth item which refers to the readiness of teachers in utilizing other learning resources like the Learning Management System (LMS), Google Classroom, Streamyard, and Zoom, etc. for pupils who can access online with a mean score of 4.47 (SD = 0.70), though it is still described as very high.

The highest mean score conformed to Alam et al. (2020) study that teachers are prepared to teach and learn employing new modality approaches amidst pandemic. Regardless, one's likelihood of embracing distance learning is strongly correlated with one's duration of teaching experience and specializations. Teachers' readiness to adapt to distance learning education setting is also significantly correlated with their geographic location. Further, results revealed that teachers must have adequate preparation in order to get ready for the new normal education. Despite the obstacles that may stand in their way, they remain motivated and do their work (De Villa & Manalo, 2020). On contrary, the result of the study in terms of the lowest mean is supported by the findings of Hickson (2016) exhibited the incorporation of smartphones into the educational curriculum, as school systems utilize technology as a valuable tool and not solely as a replacement for textbooks. The smartphones allow learners and teachers to do research and study lessons, as well as provide a lot of flexibility within the curriculum. It also supports the claim of Chen and Bryer (2012) on their study indicated that teachers use social media to help bridge informal and formal learning contexts so as to foster enhanced discussions, engagement, and wider linkages. Moreover, Clark (2013) emphasized that teachers are currently at the middle of a pedagogic revolution and explained that they must be specifically trained of the various technological advantages to improve classroom interactions with respect to learning and technological pedagogical content knowledge. Therefore, it could be said that teachers are ready for the new learning modality particularly in the implemented modular distance learning in public schools. However, teachers need to improve their skills in other learning resources particularly concerning technology integration, especially the DepEd programs include training through webinars and online surveys, etc. Results revealed the growing need for teachers to be equipped on the use of social media as it serves as the mail tool for communication and to successfully integrate technology within the teaching-learning

process across disciplines. Furthermore, Table 1 shows that the level of teachers' perception in terms of teaching mathematics through modular instruction is the indicator with the lowest mean of 4.58 (SD = 0.56) described as very high. Also, this means that the indicators on teachers' perception are always felt and observed. The teacher has a very high inclination to teaching mathematics through modular instruction.

Meanwhile, items seven, eight, and ten have the same mean score with different standard deviations for item seven as compared to items eight and ten. It showed that item ten stating that teachers value the quality of teaching mathematics is better even in this new mode of teaching and learning, and item eight stating that teachers use assessment to check pupils' needs, progress, and achievement to enhance the teaching and learning practices in modular instruction is favored to be both the highest with a mean score of 4.61 (SD = 0.52) compared to item seven considering the scatteredness of the data with a mean score of 4.61 (SD = 0.54), still described as very high. The second item in which teachers possess learning, literacy, and life skills to empower pupils in learning mathematics was rated as the lowest with a mean score of 4.49 (SD = 0.58) described as very high. These findings are in agreement with the study by Baron et al. (2020) that stressed the big role of the school in developing teachers by providing training and workshops of the knowledge and skills needed for distance learning. Similarly, schools must prioritize budget to the equipment and amenities necessary for distance learning. It is always changing and must be updated to keep up with the changing learning environment (Bozkurt, 2019). Further, encouraged instructors and administrators to utilize their technological resources map, assessment and implementation strategy for multimodal learning delivery models.

Table 2.
Frequency Distribution of the Level of Teachers' Perception in the New Learning Modality

Level of Agreement		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very High	61	81.3	81.3	98.7
	High	13	17.3	17.3	17.3
	Very Low	1	1.3	1.3	100.0
	Total	75	100.0	100.0	100.0

As shown on the frequency table above, there are 61 (81.3 %) teachers out of 75 responded very high in terms of the level of teachers' perception in the new learning modality for the school year 2020-2021. It is followed by 13 (17.3 %) teachers who responded high, and then only 1 (1.3%) teacher answered very low.

The distribution of responses of the teachers implies differences in their level of teachers' perceptions in terms of readiness to modular distance learning and teaching mathematics through modular instruction. With regard to the responses of few teachers who have high and very low agreement, it is supported by Doghonadze et al. (2020) which revealed that teachers were still a long way from being able to handle most of the time the conduct of distance learning with maximum efficiency, and a significant amount of work is needed to move to high-quality distance education. Results identified three central themes in relation to challenges such assessment complexity, instructional delivery, and the digital divide (De Villa & Manalo, 2020). In addition, challenges encountered as agreed by the respondents include the use of social media, response monitoring, and establishing communication with students as well as with stakeholders such as parents for assistance at home (Alam et al., 2020).

On the other hand, concerning the responses of most teachers who have very high agreement should be noted. One of the participants of the study by De Villa and Manalo (2020) pointed out webinars help them to figure out how to develop resources and learning materials, and also to become agile to the so-called new normal. Additionally, it affirmed the fact that teachers are said to engage in continuous learning proves that they are very adaptable to the teaching-learning process. They learn new things every day, and the new lessons equip them to cope with the various challenges of the present. Furthermore, another participant in their study concluded that positive thinking amid the threat of COVID-19 is significant and suggested to always find ways to educate the learners holistically even in the current situation we are facing. When everyone understands their duties and responsibilities, the

learning modality implementation becomes more organized, manageable, and simple (Okai-Ugbaje et al., 2020).

Level of Module Innovation of Teachers in Mathematics 4

Presented in Table 3 is the level of module innovation of teachers in Mathematics 4 in terms of the objectives, content, format and language, assessment, and usefulness of the modules. As shown, the overall mean is 4.53 (SD = 0.57), hence, the result shows that the level of module innovation is very high.

Table 3.
Level of Module Innovation of Teachers in Mathematics

Indicators	Mean	Standard Deviation	Level of Agreement
Objectives	4.60	0.52	Very High
Content	4.48	0.62	Very High
Format and Language	4.43	0.60	Very High
Assessment	4.60	0.54	Very High
Usefulness	4.52	0.57	Very High
Overall	4.53	0.59	Very High

Subsequently, the level of module innovation of teachers in terms of the objectives has the highest mean of 4.60 (SD = 0.52) with a descriptive level of very high. It is then followed by assessment with the same mean of 4.60 (SD = 0.54) but more scattered and has a descriptive level as very high. Also, usefulness has a mean of 4.52 (SD = 4.52) described as very high. Similarly, content has a mean of 4.48 (SD = 0.62) which is described as very high. Finally, the level of module innovation in terms of format and language has a mean of 4.43 (SD = 0.60) described as very high, too. This means that indicators of module innovation are always evident. The modules have a very high reliability and quality as an instructional tool. The respondents rated the fourth item as the highest which refers to the relevance of the topics of each lesson based on the Most Essential Learning Competencies (MELCs) with a mean score of 4.69 (SD = 0.49). On the other hand, item five was rated as the lowest stating that the objectives of the module take into account the needs of the students having a mean score of 4.55 (SD= 0.53). An overall mean score of 4.60 (SD= 0.52), the level of module innovation of teachers in terms of objectives has a verbal description of very high.

The level of module innovation of teachers in terms of content of the module has a total mean score of 4.48 (SD = 0.62) described as very high. The first item stating that the content of the module is suitable to the target learner's level of development, needs, and experience obtained a highest mean score of 4.53 (SD= 0.60) and the lowest mean score of 4.41 (SD= 0.62) is the accuracy, currency, and correctness of the content of the module.

Concerning the format and language of the module, it has a total mean score of 4.43 (SD = 0.60) described as very high. The results reveal those items four and five have the same mean score but different standard deviations. It shows that item four stating that the format and language of the module are logical and show the smooth flow of ideas within a lesson and from a lesson to a lesson is favored to be the highest mean compared to item five considering the scatteredness of the data with a mean score of 4.48 (SD = 0.55). Teachers rated the first item which refers to the suitability of the format and language of the module to the comprehension level of the students as the lowest with a mean score of 4.39 (SD = 0.66).

The data presented on the assessment of the module has total mean score of 4.60 (SD = 0.54) described as very high. Findings showed that among the items interpreted as very high, the highest was item two which refers to the alignment of activities with the specific objectives and content with a mean score of 4.65 (SD = 0.53).The third item stating that the assessment of the module provides "self-checks", ready-made achievement tests, and or review activities were rated as the lowest with a mean score of 4.55 (SD = 0.53).

With a verbal description of very high, the first item stating that the instruction of the module can motivate and develop the learner's interest to study the lesson obtained the highest mean score of 4.56 (SD = 0.58). Meanwhile, items four and five have the same mean score but different standard

deviations. It showed that item four which pertains to the usefulness of the module in developing higher cognitive skills and 21st-century skills is favored to be the least mean score 4.48 (SD = 0.60) compared to item five considering the scatteredness of the data with a mean score of 4.48 (SD = 0.55) still described as very high. The level of module innovation in terms of usefulness of the module has a total mean score of 4.52 (SD = 0.57) described as very high.

Dela Cruz (2015) emphasized the importance of instructional materials being relevant to the lessons' objective. This goes with the findings of Yazon (2017) showed that the lessons in the module include specific objectives stated in behavioral terms, measurable, achievable, realistic, and timely. They agreed that the module's concepts and points are clearly described, and it has the desired learning competencies. With regard to the language utilized, the learners unanimously affirmed that the lessons provide grammatically accurate sentences and paragraphs, as well as clear and detailed instructions for their use. Learners are given self-assessments, pretests and post tests to support their ability to improve their key competencies. Clearly, the study showed that scores on the test rose substantially after the pretest, indicating that the module was effective in helping learners comprehend.

Additionally, it is parallel with the findings of Charles (2014) that the module should offer an overview to the lesson as well as directions or ideas on how to use the module's various components. In addition, the instructor must keep track of each student's progress in order to recognize accomplishments and reduce difficulties. Further, Sejpal (2013) exhibited difference in individual readiness to learn that necessitate preparation in order to employ the most effective instructional strategies to facilitate learner's personal growth and development.

In conclusion, the results of this study affirmed the findings by Nardo (2017) that students engaged themselves in learning topics presented in the module, acquiring better self-study, developing sense of responsibility, and monitoring their progress, thus empowered to learn how to learn. Equally important, this is supported with the claims of Sadiq (2014), that the modular approach helps to optimize student engagement by allowing them to study in their own way while yet having enough time to complete the assigned tasks. It also goes with the study of Lim (2016), which showed difference in individual readiness to learn that necessitate preparation in order to employ the most effective instructional strategies to facilitate learner's personal growth and development.

Revealed in Table 4 below is the frequency distribution of responses of the teachers with regard to the level of module innovation in Mathematics 4. As shown, a total of 57 (76%) teachers out of 75 responded very high in terms of the level of module innovation in Mathematics 4 utilized by them. Then, it is followed by 17 (22.7%) teachers who responded high and 1 (1.3%) teacher answered very low, respectively.

The result shown in the table above implies that teachers have varying responses to the way they assess the modules utilized in teaching Mathematics in terms of the objectives, content, format and language, assessment, and its usefulness. In general, 76% of the teachers agreed that the level of module utilized in teaching Mathematics 4 was very high. This is supported by Dio and Madrazo (2020) demonstrated that the contents, formats, presentations and organizations of the contextualized learning modules were up-to-date, accurate and comprehensive.

Table 4.

Frequency Distribution of the Level of Module Innovation in Mathematics

Level of Agreement		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very High	57	76.0	76.0	98.7
	High	17	22.7	22.7	22.7
	Very Low	1	1.3	1.3	100.0
	Total	75	100.00	100.0	

Additionally, the 18 student participants found the learning modules helpful in accommodating their individual learning gaps in the conic section, as it allows them to learn in ways that were comfortable for them. According to the findings of Feriyanto and Putri (2020) higher order thinking skills or HOTS-based mathematics modules are beneficial for students because they foster critical thinking abilities and the modules meet the validity, practical and effectiveness criteria. This is parallel

with the research by Aminah et al. (2018) explained how modules based on higher-order thinking skills can help students enhance their thinking skills.

Level of Self-efficacy of Mathematics Teachers Teaching in the New Normal

Shown in Table 6 is the level of self-efficacy of mathematics teachers in terms of instructional self-efficacy and professional abilities/teaching effectiveness. With an overall mean of 4.57 (SD = 0.54), the descriptive level is very high. This means that the level of self-efficacy of mathematics teachers teaching in the new normal is very high.

Table 5 below presents mathematics teachers' level of self-efficacy teaching in the new normal in terms of instructional self-efficacy is rated to be the highest indicator with a mean score of 4. 65(SD = 0.51) described as very high. This means that the level of instructional self-efficacy of mathematics teachers is always observed and manifested at all times. The teacher has a very high self-efficacy belief in teaching mathematics in the new normal.

Table 5.
Level of Self-efficacy of Mathematics Teacher's Teaching in the New Normal

Indicators	Mean	Standard Deviation	Level of Agreement
Instructional Self-efficacy	4.65	0.51	Very High
Professional abilities/Teaching Effectiveness	4.49	0.57	Very High
Overall	4.57	0.54	Very High

Items one and fifteen have the same mean score but different standard deviations. It showed that item fifteen which pertains to the willingness of the teacher to communicate with the parents or guardians to ask help from me any time through texts, phone calls, chats, vide ocall, e-mail or even visit me in school is favored to be the highest mean 4.72 (SD = 0.48) compared to item one considering the scatteredness of the data with a mean score of 4.72 (SD = 0.51), described as very high. The third item in which teachers often create thematic units based on the pupil's interest and ideas was rated as the lowest mean score of 4.56 (SD = 0.55) described as very high.

This is parallel to the discussion of Calhoun (2019) instructional leaders need to use a variety of strategies to enhance teacher efficacy. Strategies that were reported to be particularly useful included those that foster teacher collaboration, autonomy, and empowerment. Ensuring appropriate systems, services, and support for teacher collaboration should be a priority for those in leadership positions. Also, it will be advantageous if there is an interface parent line communication, which would enable a system for keeping track of the progress, growth, and overall well-being of the child (Abulon & Miguel, 2016). It supports the notion that when students and teachers collaborate, new pedagogies can be introduced more easily, resulting in stronger learning partnerships (Fullan & Langworthy, 2014). Likewise, it also corroborates the results by Ho et al. (2013) found that students' drive to learn increases when strong teacher-student and student-student relationships are fostered. Moreover, Min et al. (2012) substantiates the results showed that teachers' knowledge of thematic approach and teacher constant practice were correlated significantly. Teachers learned that cooperative teacher-student relationships are crucial in academic theme learning, particularly when it comes to offering students encouragement and support in getting involved to the teaching-learning process. Equally important, it is parallel with the study of Perera (2020) revealed that the self-efficacy beliefs of teachers in mathematics were positively linked to their job satisfaction, levels of mathematical performance of the class and the level of interaction among the students. Individual level of mathematical concept was positively associated to perceptions and achievement of the quality of instruction, while the level of a student was related to the number of mathematics concepts mastered. It can be deduced from this study's results that teachers shall always create thematic units in planning learning activities to develop the pupils' potential holistically.

Further, Table 5 also illustrates mathematics teachers' level of self-efficacy teaching in the new normal in terms of professional abilities/teaching effectiveness is the indicator with the lowest mean of 4.49 (SD = 0.57) described as very high. Likewise, it means that mathematics teachers' level of self-efficacy of in terms of professional abilities/teaching effectiveness is always observed and manifested at all times. The teacher has a very high self-efficacy belief in teaching mathematics in the new normal.

Results reveal that item three has the highest mean of 4.57 (SD = 0.55) described as very high stating that teachers can remain calm when facing challenges because they can rely on their coping abilities. In contrast, the lowest mean score of 4.40 (SD = 0.62) was item eight stating that teachers generally teach mathematics effectively in modular instruction. Results of the study support the findings of Butts (2016) emphasized that the most immediate needs for increasing teacher's efficacy are resources, assessment, consistent expectations and continuous professional development. Moreover, the findings of Blazar and Kraft (2017) show that teachers' effectiveness measures can be utilized to know growth areas and connect teachers with relevant professional development that will improve current school practices. Furthermore, it is widely acknowledged that continuing education enhances not just the information and abilities required for effective actions, but additionally it is believed that training leads to better individual's attitudes and values, and these changes, in turn, influence the way in which professions conduct themselves (Cooke, 2012). As such, effective professional development should equip teachers with the skills necessary to meet future challenges, while also providing the tools to aid in facing those future obstacles and achieving their long-term career goals. The result shown in Table 6 below revealed that 58 (77.3%) teachers out of 75 responded very high in terms of mathematics teachers' level of self-efficacy teaching in the new normal. Also, there are 16 (21.3 %) teachers responded as high and only 1 (1.3 %) teacher answered very low.

Table 6.
Mathematics Teachers' Level of Self-efficacy teaching in the New Normal in terms of Professional Abilities

Level of Agreement		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very High	58	77.3	77.3	98.7
	High	16	21.3	21.3	21.3
	Very Low	1	1.3	1.3	100.0
	Total	75	100.00	100.0	

Based on the responses of the teachers, it implies that teachers have varied levels of self-efficacy teaching in the new normal in terms of their instructional self-efficacy and professional abilities/teaching effectiveness. Recent evidence particularly on the study of Babb (2020) results that the strength of teachers' belief in his or her own efficacy, the importance he or she places value on stability, and their impression of administrative support all correlated with a teacher's preparedness to withstand a crisis in the wake of a global pandemic. Moreover, findings showed that teachers with greater risk perception were more likely to implement disease prevention measures, but they were also less confident about their abilities. In addition, teachers with stronger self-efficacy were more efficient in their responses (Chen et al., 2020). Chirca et al. (2020) suggested that teachers should take account of the impact of job stress on their own self-efficacy and mental health when transitioning into online teaching by giving importance of promoting their mental health and well-being.

Galano's (2020) study showed the readiness of teachers in teaching math using module and realization of printed modular distance learning in mathematics before classes started, but difficulties arose when students had to go through a rigorous preparatory period. Generally, the participants' assessment on the extent of their preparation on Weekly Home Leaning Plan (WHLP), modules, Learning Activity Sheets (LAS), and packaging, distribution, and retrieval of learning package was all to a very high extent. This result is consistent with the DepEd's effort to strengthen rigorous preparations for School Year 2020-2021 (DepEd, 2020a). Moreover, despite the health crisis, public school teachers throughout the Davao Region are still striving to achieve personal and professional objectives, particularly when it comes to tasks and obligations associated with adopting distance and blended learning modalities (Baloran & Hernan, 2020). Teachers who create a positive learning environment for themselves may also be able to raise students' academic achievement, while promoting students' social and emotional development (Loveless, 2020). De Villa and Manalo (2020) found that participants' positive well-being makes dealing the new normal education circumstances easier. With a positive outlook, confidence that is built through inspiration, encouragement, a healthy lifestyle and ways to manage stress, they can stay on top of their responsibilities regardless of current circumstances. Besides, significant responses were emphasized by

the participants which include to boost self-confidence by encouraging one another, to seek help when under pressure to produce good results, to review different computer applications with the help of other teachers, and to collate online resources and other references. Moreover, they emphasized to ask assistance from stakeholders particularly from the barangays to put up computer stations as hubs for digitized materials and to setup boxes for distribution and retrieval of printed modules.

Aliyyah et al. (2020) showed that an effort must be made to enhance instructional techniques being undermined by circumstances and assure no one students is left behind. Thus, instructors must collaborate and be successful as they participate in the implementation of modular instruction regardless of the obstacles presented, with the ultimate objective of delivering excellent education to learners. Equally important, a study revealed the teachers' self-efficacy and well-being are positively correlated with learners' accomplishment and motivation, and learner's well-being is also correlated with teacher well-being (Zee & Koomen, 2016). To put it another way, teachers who believe in their capacity to teach successfully are more likely to establish a positive learning environment.

Test the Significant Relationship Between the Level of Teacher's Perception and Self-Efficacy of Mathematics Teachers Teaching in the New Normal

The fourth question was an analysis of the relationship between the level of teacher's perception and self-efficacy of mathematics teachers teaching in the new normal. Computing for the Pearson r correlation between the total scores for each teacher's responses is presented in Table 7.

Table 7.
Relationship between the Level of Teachers' Perception Self-Efficacy of Mathematics Teachers

Variables		r- value	p- value	Decision	Interpretation
Teachers' Perception	Self-efficacy	0.718	0.000	Reject Ho	Significant

The results in Table 7 above indicate that the relationship between the level of teacher's perception and self-efficacy of mathematics teachers teaching in the new normal shows a positive correlation and significant result. In the table, the correlation or r-value is 0.718, denoting a high positive correlation between the level of teacher's perception and self-efficacy. It implies that an increase of teachers' perception also tends to increase their self-efficacy in teaching mathematics in the new normal. Since the p-value of 0.00 is less than 0.05, the alpha level of significance, then the relationship is significant. So, there is a significant relationship between the level of teachers' perception and self-efficacy of mathematics teachers teaching in the new normal. Hence, the first null hypothesis has been rejected.

This claim was supported by Burton et al. (2021) who demonstrated that teachers' perceptions on various remote learning models and the instructional design systems, including the conditions in their school/district that help support those beliefs, contributed to their beliefs about how to inspire and motivate their students while teaching online. Results of the study also confirmed the study of Barni, et al. (2019) found a connection between teachers' self-efficacy and personal values and motives for teaching. The findings revealed that, independent of the kind and amount of motivation for teaching, safekeeping values of teachers were associated with their belief in one's ability. Further, correlations were different depending on the motives of teachers. In addition, research has proven that instructors' self-efficacy is a crucial element for classroom success, as it is a motivating force that influences teachers' behavior and instructional effort (Klassen & Tze, 2014). Teachers who possess high level of self-efficacy show better work satisfaction including better mental health, and can improve students' academic performance (Bandura, 1986).

Test the Significant Relationship Between the Level of Module Innovation and Self-Efficacy of Mathematics Teachers Teaching in the New Normal

The fifth question was an analysis of the relationship between the level of module innovation and self-efficacy of mathematics teachers teaching in the new normal. Computing for the Pearson r correlation between the total scores for each teacher's responses is presented, as shown in Table 8.

Table 8.
Relationship between the Level of Module Innovation and Self-Efficacy of Mathematics Teachers

Variables		r- value	p-value	Decision	Interpretation
Module Innovation	Self-efficacy	0.812	0.000	Reject Ho	Significant

The results in Table 8 above indicate that the relationship between the level of module innovation and self-efficacy of mathematics teachers teaching in the new normal show a positive correlation and significant result. In the table, the correlation or r-value is 0.812, denoting a high positive correlation between the level of module innovation in relation to self-efficacy. It implies that the increase of module innovation also tends to increase their self-efficacy in teaching mathematics in the new normal. Since the p-value of 0.00 is less than 0.05, the alpha level of significance, then the relationship is significant. So, there is a significant relationship between the level of module innovation and self-efficacy of mathematics teachers teaching in the new normal. Hence, the second null hypothesis has been rejected.

Cherian and Jacob (2013) study corroborates the outcome that revealed persons with strong self-efficacy have higher levels of motivation and performance. Similarly, it goes with the result of the study by Dybowski et al. (2017) found that self-efficacy is favorably related with respect to teacher's performance. Teachers' beliefs that students have the necessary knowledge and skills to learn the subject, as well as interest to learn, are all linked to the assessment of students to teaching quality. A significant correlation was found between physicians' beliefs about their students' competencies and their teaching self-efficacy. Thus,for teachers who are self-regulating and capable of determining their pupils' competencies, teaching quality can be useful. Results of the study also support the findings of Guido (2014) revealed the use of a checklist that examines the objectives, acceptability, effectiveness and gained skills to evaluate an instructional strategy utilizing modules. Researcher discovered about teaching modules could help undergrads make gains in their understanding and meet faculty expectations. This implies that the teachers and the faculty evaluators believe that module is vital to the course giving more stimulating learning experience to the students. Likewise, it goes with the DepEd's standards on the Department of Education (2020c) which made sure that the instructional module provided is quality assured, flexible, and essentially self-contained with learning paced by the pupils to foster effective and efficient learning.

Summary, Conclusion and Recommendation

Summary

The research was undertaken to establish the relationship of teachers' perception relative to module innovation towards self-efficacy of grade four teachers teaching mathematics in the new normal in the Division of the Davao del Sur with a total of seventy-five respondents. This study utilized a descriptive correlational design. The researcher utilized adapted test questionnaires in conducting the study.

The results of the study were summarized as follows: the level of teachers' perception in terms of readiness to modular distance learning and teaching mathematics through modular instruction is very high; the overall level of module innovation of teachers is very high; the level of self-efficacy of mathematics teachers' teaching in the new normal in terms of instructional self-efficacy and professional abilities/teaching effectiveness is also very high; the relationship between the level of teachers' perception and self-efficacy is significant, as well as the relationship between the level of module innovation and self-efficacy of mathematics teachers teaching in the new normal is also significant.

Conclusions

From the analysis of data, these conclusions were derived: the total mean of the level of teachers' perception in terms of readiness to modular distance learning was described as "very high". This implies teachers' perceptions are always felt and observed. The teacher has a very high inclination for readiness in the new normal. Also, the total mean of the level of teachers' perception in terms of teaching mathematics through modular instruction was described as "very high". This implies teachers'

perceptions are always felt and observed. The teacher has a very high inclination to teaching mathematics through modular instruction. The overall weighted mean of the level of module innovation of teachers was described as "very high". This implies that indicators of module innovation are always evident. The module has very high reliability and quality as an instructional tool.

The total mean of the level of self-efficacy of mathematics teachers' teaching in the new normal in terms of instructional self-efficacy was described as "very high". This means that the level of instructional self-efficacy of mathematics teachers is always observed and manifested at all times. The teacher has a very high instructional self-efficacy belief in teaching mathematics in the new normal. Moreover, the total mean of the level of self-efficacy of mathematics teachers' teaching in the new normal in terms of professional abilities/teaching effectiveness was described as "very high". This means that mathematics teachers' level of self-efficacy in terms of professional abilities/teaching effectiveness is always observed and manifested at all times. The teacher has a very high self-efficacy belief in teaching mathematics in the new normal.

Recommendations

Based on the results and conclusion, the following recommendations were given: teachers shall always be ready and manifest positive perceptions in the new normal learning modality to efficiently and effectively perform one's duties and responsibilities. In addition, the school principals/administrators should continue providing teachers the resources, facilities, and equipment needed to improve the school's ability to conduct modular distance learning.

The Department of Education must carefully prepare and develop quality assured self-learning modules continuously. Teachers are also encouraged to continue validate existing Mathematics modules to ensure that they are of high quality.

Teachers shall manifest self-efficacy belief in the teaching-learning process as a driving force to positively motivate pupils and enhance their teaching performance. Also, they must actively participate in the training via webinars provided by the DepEd to equip themselves and grow professionally in the field.

Teachers shall always maintain a positive disposition towards teaching, monitor the progress of each pupil, and employ appropriate teaching strategies to cater to diversified learning needs. Additionally, teachers must do self-evaluation to improve performance and develop personal values to surpass the challenges along the process.

The DepEd should continuously conduct seminar-workshop or webinars on the development and validation of the self-learning module to further improve the instructional tool. Along with, workshops through webinars should be organized to train more teachers on handling new normal classroom setting on the implementation of modular distance learning to enhance teaching.

Strong learning partnerships between the teacher, pupils, and parents shall be continuously established and maintained. Teachers should encourage the parents to seek their support to assist their children in learning mathematics through modular distance learning. Also, teachers should constantly follow up with the pupils, and instill in them that learning mathematics through the module is still interesting and worthwhile.

Similar studies should be conducted to further support the claims with an increasing number of respondents and other variables may be included. Further, future researchers may conduct mixed-method study to assess the advantages, disadvantages, and intervention strategies of the teachers, as well as to affirm the effectiveness of modular distance learning (printed) in teaching mathematics.

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