

Assessing the Readiness of Mathematics Teachers, Students, and Parents for Modular Distance Learning

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Abstract. This study investigated the level of readiness of mathematics teachers, students, and parents in modular distance education. A total of 10 teachers, 428 students, and 428 parents participated in the study. Using a descriptive-correlational research design, the findings revealed that teachers and parents exhibited the lowest levels of attitude toward modular distance education. Additionally, a significant relationship was found between students' age and their ability to learn independently, indicating that older students tend to be more self-sufficient than younger ones. Teachers demonstrated readiness in monitoring students' outputs, providing feedback, and offering tutorials based on students' performance. Students were prepared regarding time management, commitment, independent learning, and attitude toward modular distance education. Parents showed readiness to manage their time and support their children's educational needs. Overall, among the three groups, teachers had the highest level of readiness, followed by students and parents. Based on these findings, enhancement training should address areas with the lowest levels of readiness, aiming to improve further the preparedness of mathematics teachers, students, and parents for modular distance education.

Keywords: Distance education; Level of readiness; Modular distance.

1.0 Introduction

The Philippines implemented the K-12 curriculum in the school year 2012–2013. This curriculum was expected to introduce significant innovations in the education structure and enhance the delivery of quality education in the country (Yonson, 2017). However, an international assessment conducted in 2019 by the Programme for International Student Assessment (PISA) revealed that the Philippines ranked 78th in Mathematics out of 79 participating countries (San Juan, 2019). This indicates that there has been no significant improvement in the performance of Filipino students for over a decade, as shown in international assessments such as the Trends in International Mathematics and Science Study (TIMSS) in 2003, where the country ranked only 34th out of 38 participating countries in high school Mathematics (Macha, Mackie, & Magaziner, 2018). The twin goals of Mathematics in the K-12 system—critical thinking and problem-solving—remain far from being achieved, as evidenced by results from PISA and TIMSS. While the Department of Education has addressed the issue of access to education, the issue of quality remains a primary concern (Alcober, 2018).

On December 31, 2019, a novel coronavirus was identified in Wuhan, Hubei Province, China (WHO, 2020). This virus later became a pandemic. On January 22, 2020, the Philippines recorded its first suspected case (Edrada,

Lopez, & Solante, 2020). Coronavirus disease, also known as COVID-19, is a contagious illness caused by a newly discovered coronavirus, which has severely impacted many nations in various aspects, including health, economics, and education. The virus spreads primarily through respiratory droplets when an infected individual coughs or sneezes. It has claimed many lives worldwide (Dyer, 2021).

In response to the pandemic, the President of the Philippines announced that classes would not resume unless the safety of learners were assured. On July 17, 2020, President Rodrigo Duterte signed Republic Act 11480, which grants the President the authority to adjust the opening date of the school year in the event of a state of emergency (Parrocha, 2020). The Department of Education welcomed the signing of this law. Education Secretary Leonor Briones stated that the President and legislators had consulted the Department of Education during the process (Montemayor, 2020).

The Department of Education (DepEd) decided it was time for the country to fully implement distance education (Llego, 2020). DepEd stated that preparations were ongoing for home-based learning through various modalities, including radio, television, online platforms, and printed modules, or a combination of these methods (Arcilla, 2020). DepEd conducted a survey using the Learner Enrollment and Survey Form (LESF) to determine parents' preferred distance education modality for their children. The available modalities included online learning, television, radio, modular learning, and face-to-face instruction with other modalities. Due to the challenges brought by COVID-19, the country's educational system was compelled to shift from traditional face-to-face classes to distance education for the upcoming school year.

Amidst the various challenges faced by the education sector in the past few years, the COVID-19 pandemic has introduced yet another obstacle, forcing the Department of Education to shift to distance education entirely. However, assessing whether teachers, students, and parents are prepared for this new learning mode being implemented nationwide is crucial. Numerous researchers have conducted studies on the readiness of teachers, students, and schools for distance education (Alea et al., 2020; Dziuban et al., 2018; Fedina et al., 2017; Geng et al., 2019; Movkebayeva et al., 2018; Oliver & Carson, 2016, 2018; Tang & Chaw, 2017). However, few studies have focused explicitly on the readiness of mathematics teachers, students, and parents—particularly at the Junior High School level—toward modular distance education. In this regard, the researcher is motivated to study the readiness of Junior High School mathematics teachers, students, and parents for distance education. A comprehensive review should be conducted to assess the extent of their preparedness for the upcoming school year under this new educational setup.

The international assessments, particularly PISA, highlighted deficiencies in Filipino students' problem-solving abilities and thinking critically—skills essential for succeeding in self-directed learning environments like MDL. Studies by Geng et al. (2019) and Tang and Chaw (2017) emphasize that students' readiness for distance education depends on their ability to manage time effectively, stay motivated, and engage independently with learning materials. However, Oliver and Carson (2016) found that students who struggled in traditional classrooms faced even more significant challenges in modular learning due to limited teacher supervision and the lack of structured support. This suggests that the readiness of students in the Philippines to transition to MDL may be hindered by existing gaps in their problem-solving and critical-thinking abilities, as highlighted by the PISA results.

For teachers, the transition to MDL has required significant adjustments in instructional delivery, assessment strategies, and student engagement methods. Alea et al. (2020) and Dziuban et al. (2018) found that teachers encountered difficulty monitoring student progress, providing timely feedback, and ensuring effective content delivery in an online or modular setting. The shift has required educators to rethink their teaching strategies, particularly in Mathematics, where direct engagement and immediate feedback are often necessary to ensure student understanding.

Parents who have become learning facilitators during this shift to MDL also play a critical role in supporting their children's learning. Fedina et al. (2017) and Movkebayeva et al. (2018) identified key factors for success in MDL, such as parental involvement, effective time management, and understanding of the learning content. The limited support provided to parents regarding training and resources for facilitating learning at home presents another challenge. Furthermore, some parents may lack the necessary skills or resources to effectively guide their children

through complex subjects like Mathematics, which could exacerbate the existing gaps in student performance highlighted by PISA.

The PISA results, therefore, provide a crucial basis for assessing the readiness of students, teachers, and parents for the shift to MDL. Given the challenges, particularly the lack of critical thinking and problem-solving skills in Filipino students, it is essential to understand how these issues might impact their ability to succeed in a self-directed learning environment. Furthermore, the studies reviewed provide a basis for the current research, which aims to assess the preparedness of Junior High School Mathematics teachers, students, and parents for modular distance learning. Specifically, the study will investigate how students' ability to engage with learning materials independently, the challenges teachers face in adapting their instruction, and the role of parental support in learning can affect the effectiveness of MDL in the Philippine context. Through this research, a deeper understanding of the readiness for MDL at the Junior High School level can be gained, offering insights into addressing these challenges and improving the overall quality of education during this transition.

In conclusion, while the shift to distance education presents a significant challenge, especially in a subject as complex as Mathematics, it also provides an opportunity to assess the readiness of key stakeholders (students, teachers, and parents) and identify the support structures necessary for a successful transition. The PISA results offer a critical perspective on the current gaps in Filipino students' skills, which must be addressed to ensure that the new educational approach in the country will be practical. Therefore, this study is essential to understand the unique challenges of MDL implementation at the Junior High School level and to propose strategies for improving its effectiveness.

2.0 Methodology

2.1 Research Design

In this study, the researcher employed a descriptive-correlational survey design. The study is descriptive as it presents and describes the profiles of teachers, students, and parents while also evaluating the extent of their readiness for modular learning. Meanwhile, it is correlational because it examines the relationship between the respondents' profiles and their readiness for modular learning.

2.2 Research Locale

The present study was conducted with Junior High School Mathematics teachers, students, and parents of Benedicto P. Tirambulo Memorial National High School. The school is located along the national highway of the Bayawan-Mabinay-Kabankalan road in Paniabonan, Mabinay, Negros Oriental. Its proximity to the Mabinay 1 District office makes it easily accessible to the surrounding communities. As a key educational institution in the area, the school plays a vital role in providing quality education to students in the region.

2.3 Research Participants

The participants of this study included Junior High School Mathematics teachers, students, and parents from Benedicto P. Tirambulo Memorial National High School (BPTMNHS) during the school year 2020-2021. The school had 10 Junior High School Mathematics teachers and 1,006 enrolled students at this level during that academic year. To ensure a fair and unbiased selection, the study employed Simple Random Sampling, giving every individual in the target population an equal chance of being chosen. A randomized approach was used to select a representative sample of students, with their parents included accordingly. Additionally, all Junior High School Mathematics teachers participated in the study. This method ensured a diverse and representative sample, enhancing the reliability and applicability of the findings to the broader school community.

2.4 Research Instrument

The study utilized a survey questionnaire as the primary method of data collection. The researcher developed the instrument to ensure that it aligned with the study's objectives. An expert review was conducted to assess the reliability and validity of the instrument. The research instrument underwent internal validation to measure its consistency, and Cronbach's Alpha coefficient was calculated. The computed Cronbach's Alpha value was ≥ 0.90 , indicating excellent reliability. This suggests that the questionnaire items demonstrated high internal consistency, making the instrument a reliable tool for data collection.

2.5 Data Gathering Procedure

The researcher first sought permission from the Schools Division Superintendent of Negros Oriental to conduct the study involving Junior High School Mathematics teachers, students, and parents of Benedicto P. Tirambulo Memorial National High School (BPTMNHs). Upon approval, additional permissions were obtained from the School Supervisor and the School Principal to facilitate the distribution of the survey questionnaires. Before administering the survey, the researcher ensured ethical compliance by providing assent and consent forms. Since students were minors, their parents or guardians signed a parental consent form, while students provided their assent to participate voluntarily. Mathematics teachers also signed a separate consent form confirming their willingness to participate in the study.

Once all necessary approvals were secured, the survey was administered over one week. To comply with health and safety protocols, the researcher ensured that all materials were sanitized and that a face mask and face shield were worn during distribution. The questionnaires were handed over to class advisers, responsible for distributing and collecting learning modules from parents every week. The completed survey forms were retrieved from the Principal's Office, ensuring confidentiality. After data collection, the researcher worked with a statistician to tabulate and analyze the survey results. To protect participant confidentiality, physical survey forms were securely stored in a locked cabinet, while digital records were kept in a password-protected computer. Once the research was completed, physical documents were shredded, and digital files were permanently deleted to maintain ethical data management practices.

2.6 Ethical Considerations

This research study adhered to ethical guidelines, ensuring that respondents were well-informed about the nature and purpose of the study. Participation was voluntary, and respondents had the right to withdraw without consequences. Their personal information and responses were treated with utmost confidentiality to protect their privacy. The study strictly complied with the provisions of Republic Act No. 10173, or the Data Privacy Act of 2012, through various measures. Before participation, respondents (or their parents/guardians, in the case of minors) signed consent and assent forms, ensuring they understood the study's purpose, their rights, and how their data would be used. No personal identifiers were collected to maintain confidentiality and anonymity, and responses were kept anonymous to prevent any linkage to specific individuals. Data security was also a priority, with electronic files stored in a password-protected system and physical documents kept in a locked filing cabinet, accessible only to the researcher. Access to the collected data was limited to the researcher and authorized personnel to prevent unauthorized disclosure. Finally, after the study, physical documents were shredded, and digital files were permanently deleted, ensuring ethical data disposal. These measures guaranteed full compliance with the Data Privacy Act of 2012, protecting respondents' rights and ensuring responsible data handling.

3.0 Results and Discussion

3.1 Demographic Profile of Teachers, Students, and Teachers

Table 1 presents the demographic profile of teachers based on age. According to the classification of Ngegba, Mansaray, and Thulla (2016), the majority of respondents (90%) fall within the 21-30 age range, categorizing them as young adults. Based on Jean Piaget's theory of cognitive development, individuals in this stage can think abstractly, apply deductive reasoning, and solve hypothetical problems (Cherry, 2020). This suggests that most respondents can understand the concepts and challenges of distance education. Piaget's formal operational stage further supports this finding, emphasizing that young adults (21-30) possess advanced cognitive abilities to analyze complex issues, adapt to new methodologies, and navigate digital learning environments. Their capacity for abstract reasoning allows them to grasp the theoretical aspects of remote education, while their deductive skills help them evaluate challenges and develop practical solutions. Consequently, these young adult teachers are well-equipped to assess, manage, and address the complexities of distance education, reinforcing their ability to implement effective teaching strategies in a modular learning setting.

Table 2 presents the demographic profile of teachers based on sex. The data shows that female teachers constitute the majority, representing 70% (7 out of 10 respondents), while male teachers account for 30% (3). This indicates that female teachers outnumber their male counterparts in terms of representation. Table 3 presents the demographic profile of teachers based on educational attainment. The data shows that 70% (7 out of 10 respondents) are pursuing a master's degree, having earned units but not yet completing the program.

Additionally, 10% (1 respondent) hold only a bachelor's degree, meeting the minimum qualification, while another 10% have completed a master's degree. One respondent (10%) did not indicate their educational attainment. These findings suggest that most teachers are highly motivated to further their education, continuously enhancing their knowledge and competencies for professional growth and development. Table 4 presents the demographic profile of teachers based on their years of experience in teaching Mathematics, classified according to the bracketing of Rakumako and Laugksch (2010). The data shows that 50% (5 out of 10 respondents) have 4–10 years of teaching experience, while 40% (4 respondents) have three years or less. Additionally, 10% (1 respondent) have 11–20 years of experience. These findings suggest that most teachers are not new to the profession and have gained substantial experience in teaching Mathematics.

Table 5 presents the demographic profile of teachers based on the number of training sessions attended on distance education. The data reveals that 50% (5 out of 10 respondents) have not attended any seminar or training related to distance education. Meanwhile, 20% (2 respondents) have attended training once. Additionally, 10% (1 respondent) attended training sessions four times, another five times, and another six times, respectively. These findings suggest that while some teachers have received training, a significant portion still lacks formal preparation for distance education. O'Neill (2020) emphasized the importance of professional development in improving employee performance, enhancing commitment, strengthening retention and growth, fostering continuous learning, tracking skill development, addressing weaknesses, and ultimately leading to better stakeholder outcomes. Given that half of the respondents have not received any training, there is a clear need for more professional development opportunities to equip teachers with the necessary skills and strategies for effective distance education.

Table 1. *Demographic Profile of the Teachers in terms of Age*

Age	Frequency	Percentage (%)
21-30	9	90.0
31-40	0	0.00
41-50	1	10.0

Table 2. *Demographic Profile of the Teachers in terms of Sex*

Sex	Frequency	Percentage (%)
Male	3	30.0
Female	7	70.0

Table 3. *Demographic Profile of the Teachers in terms of Educational Attainment*

Educational Attainment	Frequency	Percentage (%)
Bachelor's Degree	1	10.0
Master's Unit	7	70.0
Master's Degree	1	10.0
Did not indicate	1	10.0

Table 4. *Demographic Profile of the Teachers in terms of Years of Experience Teaching Mathematics*

Years of Experience	Frequency	Percentage (%)
3 or less	4	40.0
4-10	5	50.0
11-20	1	10.0

Table 5. *Demographic Profile of the Teachers in terms of Number of Trainings Attended on Distance Education*

Number of Trainings	Frequency	Percentage (%)
0	5	50.0
1	2	20.0
2	0	0.00
3	0	0.00
4	1	10.0
5	1	10.0
6 or more	1	10.0

Table 6 presents the demographic profile of students based on age, categorized according to the classification of Mabossy-Mobouna and Mokemiabeka (2018). The data shows that the largest group of students falls within the 14–15 age range, comprising 160 students (37.38%). This is followed by 128 students (29.91%) aged 16–18 years and 126 students (29.44%) below 14 years old. Meanwhile, only 10 students (2.34%) are over 18. These findings indicate that most students are in their early to mid-adolescence, a stage characterized by significant cognitive, emotional, and social development. This age distribution may have important implications for their learning needs, ability to engage with modular distance learning, and overall academic performance. Understanding these developmental factors can help educators design instructional strategies that cater to students' cognitive abilities and motivational levels.

Table 7 presents the demographic profile of students based on sex. The data shows that female students accounted for 242 participants, representing 56.54% of the sample, while male students totaled 181, comprising 42.29%. The total sample size included 428 students. These findings indicate that more females than males participated in the study, which may reflect a higher female representation in the student population or greater engagement in academic activities. While the study does not explicitly examine gender differences in cognitive development, it recognizes that all respondents, regardless of sex, possess the cognitive abilities necessary for higher-order thinking and conceptual understanding. This capacity for abstract reasoning is essential for effective learning and intellectual growth, particularly in modular distance education.

Table 6. *Demographic Profile of the students in terms of Age*

Age	Frequency	Percentage (%)
Below 14	126	29.4
14-15	160	37.4
16-18	128	30.0
Over 18	4	0.90
Did not indicate	10	2.30

Table 7. *Demographic Profile of the students in terms of Sex and Age*

Sex	Frequency	Percentage (%)
Male	181	42.3
Female	242	56.5
Did not indicate	5	1.20

Table 8 presents the demographic profile of parents based on sex. The data shows that female parents accounted for 364 participants, representing 85.05% of the sample, while male parents totaled 49, comprising 11.49%. The total sample included 428 parents. These findings indicate that significantly more female parents participated in the study than male parents. This may suggest that mothers are more actively involved in their children's education, particularly in modular distance learning. Table 9 presents the demographic profile of parents based on age. The data indicates that most parent respondents fall within the 35–44 age range, which Medley (1980) classifies as early middle adulthood. Meanwhile, the smallest group comprises parents aged 65 and older, classified as late adulthood, with only eight respondents (1.87%). These findings suggest that most parent respondents are in their middle years, neither too young nor too old. This age distribution may affect their ability to support their children's education, particularly in modular distance learning.

Table 10 presents the demographic profile of parents based on educational attainment. The data reveals that most respondents are elementary graduates, with a frequency of 108 (25.23%). At the same time, the lowest numbers are recorded for those with a master's degree and a doctorate, each with only one respondent (0.23%). These findings suggest that most parent respondents have limited formal education, which may impact their ability to support their children's learning. According to Drew (2019), a lack of schooling can lead to poor well-being, limited communication skills, shorter life expectancy, unemployment, exploitation, and gender discrimination. In the context of modular distance learning, their educational background may present challenges in assisting their children's academic progress.

Table 8. Demographic Profile of Parents in terms of Sex

Sex	Frequency	Percentage (%)
Male	49	11.5
Female	364	85.0
Did not indicate	15	3.50

Table 9. Demographic Profile of Parents in terms of Age

Age	Frequency	Percentage (%)
21 and below	6	1.40
22-34	51	11.9
35-44	193	45.1
45-64	144	33.6
65 and above	8	1.90
Did not indicate	26	6.10

Table 10. Demographic Profile of Parents in terms of Educational Attainment

Educational Attainment	Frequency	Percentage
Not able to attend Elem	8	1.87
Elem Level	106	24.77
Elementary Graduate	108	25.23
High School Level	42	9.81
High School Graduate	34	7.94
College Level	19	4.44
Bachelor's Degree	17	3.97
Master Units	4	0.93
Master's Degree	1	0.23
Doctorate Units	6	1.40
Doctorate Degree	1	0.23
Did not indicate	82	19.16

3.2 Teachers' Readiness

Table 11 shows the summary of teachers' readiness.

Table 11. Summary of Teachers' Readiness

Indicators	Mean	SD	Verbal Description
Controlling of Outputs	4.11	0.63	Ready
Providing of Feedback and Tutorials	4.05	0.58	Ready
Attitude	2.95	0.88	Moderately Ready
Time-management and Commitment	3.85	0.90	Ready
Composite	3.73	0.89	Ready

In terms of skills for controlling the outputs of the learners, out of the 10 items, four have a verbal description of "very ready." These leading statements indicate that teachers are highly prepared to manage learners' outputs. They are ready to inform learners and parents about the importance of submitting outputs on time, setting deadlines for submission, prioritizing the timely collection of outputs, and being considerate of learners' situations and reasons for late submissions while still implementing consequences. The remaining six indicators have weighted means described as "ready." Hence, the composite mean also falls within the same description. UNICEF has recognized the essential role of well-ordered monitoring in distance education. Monitoring, checking, and evaluating student outputs are among the challenges teachers face in the modular distance learning modality (Castroverde & Acal, 2021). The current study's findings indicate that teachers are ready to handle these challenges in modular distance education. According to Nordby et al. (as cited in Santelli et al., 2020), one motivation for students to submit their outputs on time is implementing a late policy that includes a penalty. This is one of the effective ways to control students' work. Moreover, the lowest standard deviation among all indicators is 0.47, the highest is 0.82, and the composite is 0.63. These values fall under low and very low dispersion categories, implying a close clustering of responses around the mean, as stated by Zambrano, Pertuz, Pérez, and Straccia (2019). This further suggests a high degree of homogeneity in teachers' readiness regarding their skills in controlling the outputs of the learners.

Regarding skills in providing feedback and tutorials based on students' performance, out of the 10 items, four verbally described "very ready." These key statements indicate that teachers are highly prepared to provide

feedback and tutorials based on learners' work. They are ready to understand and answer learners' queries, explain inquiries or questions regarding any or all lessons in their modules, be available at all times for learners who need a lecture or tutorial, and immediately understand and respond to parents' queries. On the other hand, the remaining indicators have weighted means described as "ready." Hence, the composite mean also falls within the same description. Black and Wiliam (as cited in Parker et al., 2017) stated that receiving feedback on one's skills and understanding is a vital component of the learning process. The results of the present study on teachers' readiness to give feedback and tutorials indicate that the respondents are ready to provide feedback on their learners' skills. Herrera (2021) identifies that one of the factors with a very high influence on teachers' level of readiness is feedback on learners' output. UNICEF has emphasized that providing feedback to students on their learning progress is important for their motivation. The results of this study show that teachers are ready to provide feedback to learners, which can inspire them to progress in their learning. Furthermore, the lowest standard deviation among all indicators is 0.42, the highest is 0.67, and the composite is 0.58. These values fall under the categories of low and very low dispersion, implying a close clustering of responses around the mean, according to Zambrano et al. (2019). This further suggests a high degree of homogeneity in teachers' readiness regarding skills in providing feedback and tutorials based on learners' work.

In terms of attitude towards modular distance education, almost all the indicators have a verbal description of "moderately ready." Teachers are moderately ready to communicate through calls, believe that modular learning is convenient, feel comfortable communicating through chats or texts, and believe that the lecture method can still be used effectively in modular distance learning. They also believe that modular learning is easy, that high-quality learning experiences can occur in modular distance education, and that communicating through journal notebooks is comfortable. Furthermore, they believe that modular learning effectively delivers quality education and that shifting from the traditional teaching method to the modular approach is straightforward. Castroverde and Acal (2021) argued that maintaining a positive outlook is one of the ways teachers handle the challenges of modular distance learning. However, the current study's findings indicate that teachers do not share this perspective on modular distance education. One indicator suggests that teachers are less ready, as they believe that modular learning cannot offer the same high-quality education as face-to-face learning.

In general, the composite mean verbally describes "moderately ready," implying that teachers have a moderate attitude towards modular learning – neither entirely positive nor negative. Additionally, the standard deviation for some indicators suggests high dispersion, while it indicates low dispersion for others. The composite standard deviation of 0.88 is categorized as low dispersion, implying a close clustering of responses around the mean, according to Zambrano et al. (2019). This further suggests a high degree of homogeneity in teachers' readiness in terms of their attitude towards modular learning.

In terms of time management and commitment, all indicators have a verbal description of "ready." This means that teachers are prepared to be responsive to students, replying to their messages through chats or texts during office hours, preferably between 7 a.m. and 5 p.m. They also allocate time to communicate with parents at least four to five times per week through various means, respond to students' queries at least once a day via calls, chats, or texts, and remain committed to answering students outside office hours. Additionally, they dedicate time to staying in touch with students several times per week, managing their time efficiently, addressing parents' inquiries daily, organizing and planning their modular distance classes, and setting aside specific times for tutorials and lectures. They are also committed to prioritizing students' needs over personal concerns.

In general, the composite weighted mean has a verbal description of "ready," which further implies that teachers are prepared regarding time management and commitment. The current study's findings indicate that teachers are ready to handle this challenge. Benavides and Manalo (2021) revealed that teachers can provide individual attention to learners who require extra assistance. However, their study also found that teachers dedicate a limited number of hours per week to distance teaching, which aligns with the present study's findings regarding teachers' commitment.

On the other hand, Castroverde and Acal (2021) argued that time management and flexibility are among the strategies teachers use to cope with the challenges of modular distance education. Similar to attitude towards modular learning, the standard deviation for some indicators suggests high dispersion, while others indicate low

dispersion. The composite standard deviation of 0.90 is categorized as low dispersion, implying a close clustering of responses around the mean, according to Zambrano, Pertuz, Pérez, and Straccia (2019). This further suggests a high degree of homogeneity in teachers' time management and commitment readiness.

3.3 Students' Readiness

Table 12 shows the summary of students' readiness.

Table 12. *Summary of Students' Readiness*

Indicators	Mean	SD	Verbal Description
Time-management and Commitment	3.77	1.01	Ready
Independent Learning	3.75	0.96	Ready
Attitude	3.46	1.07	Ready
Composite	3.66	1.02	Ready

In terms of time management and commitment, all indicators have a verbal description of "ready." This signifies that students are prepared to complete the tasks in their modules daily, manage their time well, and remain committed to being attentive and following teachers' feedback on their outputs or work. They also meet deadlines set by their teachers, allocate time to organize and plan for their modular distance classes, and make time whenever their teacher offers a tutorial or lecture on any or all of their Mathematics lessons. Additionally, students prioritize learning with their modules above all else. They actively communicate with their teachers by sending messages or texts with any queries regarding their mathematics lessons as soon as possible, maintaining contact through various means of communication, and calling their teachers whenever they need clarification on their mathematics modules.

Amir et al. (2020) found that students' time management and difficulty maintaining focus for extended periods posed internal challenges to distance learning during COVID-19. However, the current study's findings suggest that students are ready to manage their time effectively and demonstrate commitment to their studies. Parker et al. (as cited in Halpern & Tucker, 2015) state that distance learning programs offer flexibility, particularly for adult students, as they enable them to balance their jobs and family responsibilities. Furthermore, Sallehuddin, Huzaidy, and Rosli (2019) found that time management is significantly and positively correlated with students' academic performance.

Therefore, the present study's findings suggest that students are likely to perform well during modular distance education because they are ready in terms of time management and commitment. The composite weighted mean verbally describes "ready," further reinforcing that students are prepared in these aspects. Additionally, the standard deviation for some indicators suggests high dispersion, while it indicates low dispersion for others. The composite standard deviation of 1.01 is categorized as high dispersion, implying a wide spread of responses around the mean, according to Zambrano, Pertuz, Pérez, and Straccia (2019). This further suggests a lower degree of homogeneity in students' readiness concerning time management and commitment.

In terms of skills in learning independently, all indicators have a verbal description of "ready." This signifies that students are prepared to take responsibility for constructing and carrying out their learning, make decisions to meet their learning needs and learn independently. They also set goals to achieve their learning objectives, monitor their progress, and take ownership of their learning. Additionally, they understand their learning styles, evaluate their academic development, feel confident meeting their learning needs, and work effectively in small group tasks while developing their ideas.

The present study's findings indicate that students are ready to learn independently. Brewer and Hogg (2017) provided several recommendations for developing excellence in independent learning and promoting student autonomy. One of their key recommendations is to offer more structured attention to independent learning when developing educational modules and to provide continuous support. According to Churiya et al. (2020), Indonesia's readiness for distance education during the pandemic revealed that learners had limited self-regulated learning, making it difficult to manage their distance learning activities effectively.

Despite these challenges, the present study's findings suggest that students are prepared for independent learning in the modular distance education setting. The composite weighted mean verbally describes "ready," reinforcing that students are prepared for independent learning. Additionally, the standard deviation for some indicators suggests high dispersion, while it indicates low dispersion for others. The composite standard deviation of 0.96 is categorized as low dispersion, implying a close clustering of responses around the mean, according to Zambrano, Pertuz, Pérez, and Straccia (2019). This further suggests high homogeneity in students' readiness for independent learning.

Six indicators have a verbal description of "ready" in terms of attitude towards modular distance education. These leading statements indicate readiness, as students believe that modular learning is convenient and effective in delivering quality education and that the lecture method can still be used effectively in modular distance learning. Additionally, they feel comfortable communicating through journal notebooks and believe that high-quality learning experiences can occur with modular distance education. They also believe that modular learning offers the same high-quality education as face-to-face learning.

On the other hand, the remaining indicators have weighted means described as "moderately ready." This means that students feel comfortable communicating through chats or texts, believe it is easy to shift from traditional to modular learning, communicate through calls, and perceive modular learning as easy. Overall, students have a positive attitude towards modular learning.

Sahara (2014) revealed that one factor contributing to a negative attitude among students in distance education is the lack of interaction between teachers and learners or among learners. However, Isik et al. (2010) stated that students tend to feel more comfortable with distance learning than traditional face-to-face learning and that distance learning can be more effective. However, the present study's findings suggest that learners' readiness regarding their outlook toward modular distance education remains at a moderate level. These results are also supported by Oztruk et al. (2017), who explored students' opinions on the implementation of distance education and found that students' attitudes toward distance education were generally moderate.

Furthermore, the standard deviation for some indicators suggests high dispersion, while it indicates low dispersion for others. The composite standard deviation of 1.07 is categorized as low dispersion, implying a close clustering of responses around the mean, according to Zambrano et al. (2019). This further suggests a higher degree of homogeneity in students' readiness regarding their attitude towards modular learning.

3.4 Parents' Readiness

Table 13 shows the summary of parents' readiness.

Table 13. *Summary of Parents' Readiness*

Indicators	Mean	SD	Verbal Description
Time-management and Commitment	3.91	1.01	Ready
Attitude	3.34	1.11	Moderately Ready
Composite	3.63	1.10	Ready

Regarding time management and commitment, parents are ready to be responsive to their child's needs in ways that support learning. On the other hand, the remaining indicators have weighted means with verbal descriptions of "ready." This indicates that parents are prepared to supervise or oversee their child's progress to ensure they complete their module tasks. They prioritize their child's learning needs above all else, manage their time effectively, and plan to provide support and assistance with their child's modules. Additionally, parents are ready to communicate with the teacher whenever their child needs clarification on lessons, send feedback to the teacher regarding their child's performance at home at least once a week, and set specific times to assist their child with tutorials and lectures. They are also committed to responding to teachers' feedback through chats or texts at least once a day and through calls at least once a day.

The present study's findings suggest that parents are ready to actively participate in the teaching-learning process of modular distance education for their children. Collado et al. (2021) concluded that learners whose parents take the time to assist with their learning are more likely to engage positively in their modular lessons, regardless of

internet access. Aguja et al. (2021) recognized parents' material and emotional support as key contributions to students' learning at home. The findings of this study further suggest that parents are prepared to support their children, as they can effectively manage their time and demonstrate a strong commitment.

The composite weighted mean verbally describes "ready," reinforcing that parents are prepared in terms of time management and commitment. Additionally, the standard deviation for some indicators indicates high dispersion, while it indicates low dispersion for others. The composite standard deviation of 1.01 is categorized as high dispersion, implying a broad clustering of responses around the mean, according to Zambrano et al. (2019). This further suggests a lower degree of homogeneity in parents' readiness regarding time management and commitment.

The three leading indicators have verbal descriptions of "ready" in terms of their attitude toward modular distance education. This signifies that parents are prepared, as they believe that the lecture method can still be used effectively in modular distance learning, that modular learning is effective in delivering quality education, and that modular learning can offer high-quality education similar to the face-to-face method.

On the other hand, the remaining indicators have weighted means with verbal descriptions of "moderately ready." This indicates that parents are only moderately prepared and feel somewhat comfortable communicating through calls. They believe it is relatively easy to shift from traditional teaching to modular learning and think that high-quality learning experiences can still occur with modular distance education. Additionally, they believe that modular learning is convenient, and they feel comfortable communicating through journal notebooks, chats, or texts, and they find it relatively easy.

Aguja et al. (2021) state that parents recognize the necessity of adapting to the new education system and value continuing their children's education. However, the present study's findings suggest that parents' readiness, in terms of their perspective on modular distance education, is at a moderate level. According to Siahaan et al. (2021), while most parents are willing to support their children in distance education, many struggle to comprehend the lessons.

The composite weighted mean verbally describes "moderately ready," implying that parents are only somewhat prepared regarding their attitude toward modular learning. Regarding attitude interpretation, they hold a neutral stance toward modular learning—neither positive nor negative. Additionally, the standard deviation for all indicators indicates high dispersion. The composite standard deviation of 1.11 is categorized as high dispersion, implying a broad clustering of responses around the mean, according to Zambrano et al. (2019). This further suggests a lower degree of homogeneity in parents' readiness regarding their attitude toward modular learning.

Relationship Between the Teachers' Profile and their Readiness

The ages of the teachers have a weak to moderate relationship with their readiness. Meanwhile, the sex of the teachers shows a strong association with their readiness for distance learning, and their educational attainment also has a strong association with their preparedness for distance education. This further implies that sex and educational attainment significantly impact teachers' readiness. According to the Learner Enrollment and Survey Forms, parents preferred modular learning for the school year 2020-2021 (Arcilla, 2020). Although parents' participation is perceived as one of the challenges, they still chose a learning modality best suited for their children and placed importance on continuing education. Herrera (2021) also found that the educational attainment of teachers is significantly correlated with their readiness for distance education.

The strength of the relationship between years of teaching mathematics and readiness ranges from a very weak negative relationship to a weak negative relationship. On the other hand, the number of training attended and readiness show weak to moderate negative relationships. The Spearman Rank Order Correlation yielded a strong negative coefficient for the number of training attended and the readiness of attitude towards modular learning. This signifies that the more training teachers attended, the more they became aware of the difficulties of modular distance education.

Herrera (2021) revealed that training attended about distance education is significantly correlated with teachers' level of readiness for distance learning. This supports the present study's findings, as it also revealed a significant relationship between teachers' readiness and the training they attended for distance education. However, according to Alea et al. (2020), the number of years in teaching is strongly related to teachers' readiness for distance education. This contradicts the present study's findings, which showed that the relationship between teachers' readiness and years of teaching is not significant.

3.5 Relationship Between the Students' Profile and their Readiness

Among all the variables analyzed, the p-value of age about both independent learning and attitude toward modular learning is less than the significance level of 0.05. This leads to the rejection of the null hypothesis, confirming that age is significantly related to students' readiness in terms of independent learning and attitude toward modular learning. The Spearman Rank Order Correlation for all significantly related variables yielded positive coefficients, indicating weak relationships. This suggests that as students age, their readiness for independent learning and modular distance education also increases.

Parker et al. (as cited in Halpern & Tucker, 2015) found that adult learners prefer distance education due to its flexibility. This finding supports the current study, as it implies a significant relationship between students' age and readiness for distance learning. Since adult learners often prefer distance education, they tend to be more prepared for modular distance learning. However, some studies suggest that female learners are more inclined toward distance education (Isik et al., 2010; Sahora, 2014). This contradicts the findings of the present study, which revealed that students' sex does not have a significant relationship with their readiness for modular distance education.

3.6 Relationship Between the Parents' Profile and their Readiness

The p-values for all the variables analyzed are greater than the significance level of 0.05. As a result, the null hypothesis cannot be rejected, implying that parents' age, sex, and educational attainment are not significantly related to their readiness for modular distance education. Bokayev et al. (2021) found that parents' age is positively related to their readiness for distance education. However, this finding contradicts the results of the present study, which indicate no significant relationship between parents' age and their readiness for modular distance education. Additionally, the findings of this study reveal no significant relationship between parents' readiness and their sex or educational attainment. This suggests these demographic factors do not influence parents' preparedness for modular distance education.

4.0 Conclusion

The study revealed several significant findings regarding the readiness of teachers, students, and parents in modular distance education. Teachers are mostly young adults; female teachers dominate in quantity; almost all of them are not yet Master's Degree graduates, most of them have teaching experience not exceeding 10 years, and almost all of them did not experience training in distance education. Despite this, teachers exhibited the highest level of readiness compared to students and parents. However, an interesting finding emerged: teachers with more training tended to identify more difficulties in distance education. Most students are 13 years old, and females dominate in terms of quantity. As the students' ages increase, their independent learning and attitude towards modular learning also increase. Older students tend to manifest a higher level of independence than younger students.

Meanwhile, parents are mostly middle - aged, dominantly female, and lack education. The parents' age, sex, and educational attainment do not matter towards their readiness in modular distance education. No matter what their ages are, sexes, and educational attainments, they have the same extent of readiness in modular distance education. However, they had the lowest readiness compared to teachers and students. Overall, among all respondents, teachers showed the highest level of readiness, followed by students, while parents had the lowest. The aspect of readiness with the lowest extent was the attitude toward modular learning, particularly among teachers and parents. These findings highlight the need for enhancement training for teachers and parents to improve their readiness and effectiveness in supporting modular distance education.

5.0 Contributions of Authors

The authors specify equal involvement in each section. The authors go through and approve the final work.

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There is no conflict of interest in the publication of this paper, as declared by the authors.

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9.0 References

- Alcober, N. (2018). Quality education. Retrieved from <https://tinyurl.com/4ec4dz8j>
- Alea, L. A., Fabrea, M. F., Roldan, R. D. A., & Farooqi, A. Z. (2020). Teachers' COVID-19 awareness, distance learning education experiences, and perceptions towards institutional readiness and challenges. *International Journal of Learning, Teaching and Educational Research*, 19(6), 127-144. <https://doi.org/10.26803/ijlter.19.6.8>
- Amir, L. R., Tanti, I., Maharani, D. A., Wimardhani, Y. S., Julia, V., Sulijaya, B., & Puspitawati, R. (2020). Student perspective of classroom and distance learning during COVID-19 pandemic in the undergraduate dental study program Universitas Indonesia. *BMC Medical Education*, 20(1), 1-8. <https://doi.org/10.1186/s12909-020-02312-0>
- Arcilla, J. (2020). DepEd: Most parents prefer modular learning. Retrieved from <https://tinyurl.com/2pn4hh3d>
- Arcilla, J. (2020). Online classes just one option, DepEd says. Retrieved from <https://tinyurl.com/5ew6smz3>
- Bokayev, B., Torebekova, Z., Davletbayeva, Z., & Zhakypova, F. (2021). Distance learning in Kazakhstan: Estimating parents' satisfaction of educational quality during the coronavirus. *Technology, Pedagogy and Education*, 1-13. <https://doi.org/10.1080/1475939X.2020.1865192>
- Brewer, M., Hogg, S., & LSU, M. L. W. (2017). Developing excellence in independent learning. Celebrating excellence in student learning through research-informed teaching, scholarship, and professional practice, Centre for Academic Practice, Loughborough University, 24th May.
- Cherry, K. (2020). The 4 stages of cognitive development. Retrieved from <https://tinyurl.com/3k2wjsaw>
- Collado, Z. C., Rodriguez, V. R., & Dueñas III, Z. D. (2021). Children's engagement in self-learning modules (SLMs) amid the pandemic: A predictive analysis on the role of internet access, household food security, and parental involvement to modular classes. *Education* 3-13, 1-14. <https://doi.org/10.1080/03004279.2021.1954969>
- Dyer, O. (2021). COVID-19: Study claims real global deaths are twice official figures. *BMJ*, n1188. <https://doi.org/10.1136/bmj.n1188>
- Dziuban, C., Graham, C. R., Moskal, P. D., Norberg, A., & Sicilia, N. (2018). Blended learning: The new normal and emerging technologies. *International Journal of Educational Technology in Higher Education*, 15(1), 3. <https://doi.org/10.1186/s41239-017-0087-5>
- Edrada, E. M., Lopez, E. B., & Solante, R. M. (2020). First COVID-19 infections in the Philippines: A case report. Retrieved from <https://tinyurl.com/y2xpt6bm>
- Fedina, N. V., Burmykina, I. V., Zvezda, L. M., Pikalova, O. S., Skudnev, D. M., & Voronin, I. V. (2017). Study of educators' and parents' readiness to implement distance learning technologies in preschool. *Eurasia Journal of Mathematics, Science and Technology Education*, 13(12), 80802. <https://doi.org/10.12973/iejmste/80802>
- Geng, S., Law, K. M., & Niu, B. (2019). Investigating self-directed learning and technology readiness in a blended learning environment. *International Journal of Educational Technology in Higher Education*, 16(1), 17. <https://doi.org/10.1186/s41239-019-0147-0>
- Halpern, R., & Tucker, C. (2015). Leveraging adult learning theory with online tutorials. *Reference Services Review*, 43(1), 112-124. <https://doi.org/10.1108/RSR-10-2014-0042>
- Herrera, M. (2021). Teachers' level of readiness on distance learning delivery modality in the new normal it's relationship to the performance of their students (Dissertation). Cagayan State University
- Isik, A. H., Karakis, R., & Güler, G. (2010). Postgraduate students' attitudes towards distance learning (The case study of Gazi University). *Procedia - Social and Behavioral Sciences*, 9, 218-222. <https://doi.org/10.1016/j.sbspro.2010.12.139>
- Llego, M. A. (2020). DepEd's readiness for distance learning. Retrieved from <https://tinyurl.com/2p6rcmmf>
- Mabassy-Mobouna, G., & Mokemiabeka, S. N. (2018). Assessment of the nutritional status and quality of food for Brazzaville pupils: The case of high school pupils at Lionil Modern School (Brazzaville, Congo). *Research Journal of Food Science and Nutrition*, 3(4), 50-58. <https://doi.org/10.31248/RJFSN2018.045>
- Macha, W., Mackie, C., & Magaziner, J. (2018). Education in the Philippines. Retrieved from <https://tinyurl.com/yc7c73t2>
- Manalo, F. G., & Benavides, N. G. (2021). Readiness of public elementary school teachers on online teaching. *United International Journal for Research & Technology (UIJRT)*, 2(7), 123-132. <https://uijrt.com/articles/v2/i7/UIJRTV2I70018.pdf>
- Mandemach, B. J., Hudson, S., & Wise, S. (2013). Where has the time gone? Faculty activities and time commitments in the online classroom. *Journal of Educators Online*, 10(2), 1-15. <https://www.learnedlib.org/p/114366>
- Medley, M. L. (1980). Life satisfaction across four stages of adult life. *The International Journal of Aging and Human Development*, 11(3), 193-209. <https://doi.org/10.2190/D4LG-ALJQ-8850-GYDV>
- Montemayor, M. T. (2020). DepEd welcomes signing of law adjusting date of class opening. Retrieved from <https://tinyurl.com/2tt2js7c>
- Movbekbayeva, Z., Derijan, I., Khamitova, D., & Akhmetova, A. (2018). Teacher readiness for distance education of disabled students. *Knowledge International Journal*, 28(3), 1011-1014. <https://doi.org/10.35120/kj28031011Z>
- Ngegba, M. P., Mansaray, D. A., & Thulla, P. Y. (2016). The impact of the SABABU education project on teacher training programme in Pujehun, Southern Sierra Leone. *International Journal of Advanced Biological Research*, 6(1), 49-62. <https://tinyurl.com/4eyrex5y>
- O'Neill, E. (2020). The importance of training employees for your business. Retrieved from <https://tinyurl.com/at6fkwtc>
- Parrocha, A. (2020). Duterte signs law adjusting school calendar. Retrieved from <https://tinyurl.com/3fux94c>
- PhilAtlas. (2020). Marina province of Negros Oriental. Retrieved from <https://tinyurl.com/zcc4h46j>
- Rakumako, A., & Laugksch, R. (2010). Demographic profile and perceived INSET needs of secondary mathematics teachers in Limpopo province. *South African Journal of Education*, 30(1), 139-152. <https://files.eric.ed.gov/fulltext/EJ1147278.pdf>
- Sallehuddin, M., Huzaify, A. H., & Rosli, N. M. (2019). The relationship between stress, workload, and time management towards academic performance among working postgraduate students in Universiti Utara Malaysia (UUM). *American International Journal of Business Management*, 2(11), 45-55. <https://tinyurl.com/3ntnch93>
- San Juan, R. (2019). DepEd welcomes PISA results, recognizes 'gaps' in education quality. Retrieved from <https://tinyurl.com/2s4shtaz>
- Siahaan, C., Murniarti, E., & Simbolon, K. (2021). Readiness level of parents as student guide in online learning. *Psychology and Education*, 58(2), 5995-6007. <https://doi.org/10.17762/pae.v58i2.3077>
- Tang, C. M. (2013). Readiness for blended learning: Understanding attitude of university students. *International Journal of Cyber Society and Education*, 6(2), 79-100. <https://doi.org/10.7903/ijcse.1086>
- Winstone, N. E., Nash, R. A., Parker, M., & Rowntree, J. (2017). Supporting learners' agentic engagement with feedback: A systematic review and a taxonomy of recipience processes. *Educational Psychologist*, 52(1), 17-37. <https://doi.org/10.1080/00461520.2016.1207538>
- Yonson, D. L. (2017). Solving word problems performance of students in L1 (Mother Tongue) and L2 (English language). *International Journal of Development and Sustainability*, 6(8), 628-640. <https://ijsdnet.com/ijds-v6n8-8.pdf>
- Zambrano, C. M., Pertuz, V., Pérez, A. A., & Straccia, D. C. (2019). Transfer mechanisms and strategic knowledge management in health and safety companies. *Ingeniería y Competitividad*, 21(1). <https://doi.org/10.25100/ijyc.v21i1.7669>