READINESS AND EFFICACY OF MATHEMATICS TEACHERS ON BLENDED LEARNING IN THE NEW NORMAL

APRIL JOY EVANGELISTA VILLANUEVA

apriljoyvillanueva20@gmail.com

Mathematics Teacher, Palo Alto Integrated School, Calamba City, Laguna, Philippines

Abstract

The study aimed to determine the levels of readiness and efficacy for blended learning and its relationship. Specifically, it ought to answer the following questions: 1. What is the level of readiness of Mathematics teachers on blended teaching in the new normal in terms of foundations, planning, instructional methods and strategies, evaluation and assessment, and management? 2. What is the level of efficacy of Mathematics teachers on blended teaching in the new normal in terms of: student engagement; instructional strategies; and classroom management? 3. Is there a significant relationship between the readiness and efficacy of Mathematics teachers on blended teaching in the new normal?

The results for readiness indicated a high degree of preparedness for blended learning, which can verbally be interpreted into "High Level of Readiness." The results showed a high level of efficacy for blended learning, which is interpreted verbally as "Extremely Efficient."

Furthermore, the results have shown significant relationship between the readiness and efficacy of secondary Mathematics teachers on blended learning. Therefore, the hypothesis stating that there is no significant relationship between the readiness and efficacy of secondary Mathematics teachers for blended learning was rejected.

Based on the findings and conclusions of the study, it is recommended that the results be used as evidence and guide in the implementation and conduct of evaluations, trainings and interventions between and among the stakeholders of education in ensuring the continuity of learning amidst the current situation.

Keywords: Teacher Readiness, Teacher Efficacy, Blended Learning, COVID-19, New Normal

1. Main Text

Introduction

The COVID-19 pandemic has resulted in a drastic change that created unprecedented challenges to many sectors in society across the globe. More than just a health crisis, it has led to an educational crisis as well. During lockdowns and quarantines, several schools closed down and a lot of students were affected. It prompted different countries to rethink their education and to adopt several measures to ensure the continuity of learning. Donnelly (2021) acknowledged that given the abruptness and uncertainty of the situation, teachers and administrations were unprepared for this transition and were forced to rush in addressing the changing learning environment and build emergency remote learning systems at once.

The situation has led educational systems to a new normal which implied the use of different learning modalities in instructional implementation and demands for extensive preparation for changes. Recently, the Department of Education (DepEd) recognized blended learning as a “good and valid way” to deliver education as the agency looks into its implementation “after COVID-19.” DepEd described blended learning as "face-to-face with any or a combination of online distant learning, modular distance learning, and TV/Radio-based Instruction," according to a Manila Bulletin report (How to Make Blended Learning Work, 2021). This presented a challenge to the way teaching was delivered with adeptness to the changing environment.

Furthermore, Enicola (2021) mentioned that DepEd designed the Basic Education–Learning Continuity Plan (BE-LCP) which aims to ensure the safety of students, teachers, and staff with the intention of giving quality distance learning by using self-learning modules and conducting online classes as a flexible learning tool. Indeed, technology plays an important part of education as it links students to their teachers amid lockdowns and community quarantine.

However, a study by Edizon (2020) noted that the biggest barrier to teaching and learning continuity may be technological issues like internet availability, particularly in areas lacking signals. Thus, a well-designed technological and logistical implementation plan should be used to support the alternate learning models during the pandemic. It is unquestionably a difficult challenge for DepEd to get the schools ready in this situation by changing regulations, reallocating finances, and collaborating with many stakeholders and partners.

In line with this, teachers, as one of the most relevant contributing stakeholders of education, should be given utmost priority. As stated by Eytan (2016), it is the teacher who has to plan and present the lesson, the program, and the course. The teacher adapts, re-organizes, and turns the official curriculum into the taught curriculum. The teachers have to learn and work on new methods and apply new technologies. Moreover, the educational setup required teachers' readiness to adapt to the changing environment and practice efficacy in their instructional methodologies. Trainings and seminars of various fields of skills and knowledge have been required as a prerequisite for the transitions of modality – which in this study, the focus is on blended learning.

Additionally, because of its sudden and unplanned transition, mathematics has become much more difficult as one of the important domains of specialty. The change in learning modalities makes it much more difficult to teach mathematics. A recent study found that teachers are reducing learning objectives, giving up answer-gathering assessments, and using math games and applications to bolster education. Also, they are asking for parental support and continuing to create ways to engage children online, such as by teaching them how to incorporate mathematics into different subject areas (Teaching Math in a Pandemic, 2021).

With all these in consideration, the researcher has opted to assess the levels of teachers' readiness and teachers' efficacy in the implementation of instructions in this blended learning modality for it is the first step towards identifying challenges and creating solutions in a course of action.

Background of the Study

Teachers' readiness and efficacy for blended learning has become a crucial and sensitive context nowadays as DepEd started to conduct pilot testing on some selected schools in the Philippines. This calls for the educational institutions to follow and make necessary preparations and assure that the teachers are well-equipped with the necessary skills in the implementation of instruction with technological integration to limited face-to-face classes.

The department is addressing the challenges in the basic education for the school year 2020-2021 through its BE-LCP under DepEd Order No. 012, s. 2020. Under Section 6, Chapter 1 of Republic Act No. 9155, or the Governance of Basic Education Act of 2001, DepEd is vested with the authority, accountability, and responsibility for ensuring access to, promoting equity in, and improving the quality of basic education. In particular, it has been designed with a legal framework responsive to the "new normal," keeping in mind the constitutional mandate to uphold the right of all citizens to quality education at all times.

Pitagan (2021) noted that the leadership by DepEd and CHED is commendable given the odds that Philippine education is facing before, during, and even after COVID-19. The memoranda and advisories with collaborations among multi-stakeholders are consistent reminders that there is a working government mindful of its duty to continue education for all despite the continued challenges and difficulties.

It is also significant that educational institutions are adopting cutting-edge methods for how academics might influence communities, inform policies, and bring about positive change, particularly in these trying times. The use of technology has also been at the forefront of Philippine education, which is currently being highlighted by the pandemic. Whether it takes the form of online, offline, blended learning, TV/radio, printed modules, or other flexible modalities, it will continue to be an essential component of the new education even after the pandemic. The COVID-19 is merely another educational crisis that will show the Filipino people's resilience because education is always the first priority in any Filipino family.

As soon as the DepEd Memorandum No. 071, s. 2021, preparations for the pilot face-to-face, expansion and transitioning to new normal, got released, schools from different divisions are urged and expected to follow the mandate especially those that are categorized as public schools. The researcher, a secondary Mathematics teacher in the Division of Calamba, has observed the actions taken in preparation for this matter which mainly focus on the health safety of the persons involved, which is unquestionably significant. But this only urge interest and eagerness to give light on equally important factors – the readiness and efficacy of teachers for blended learning.

Hence, this study aims to comprehensively assess the level of readiness and efficacy of teachers which will provide a basis for continuous development and support structure that will assist curriculum planners, administrators and teachers in the conduct of blended learning modality.

Theoretical Framework

Building a foundation of practice, in theory, helps make better decisions when implementing blended learning and supporting learners more effectively to achieve comprehensive and meaningful learning. The study mainly focused on four theoretical frameworks, namely, Complex Adaptive Blended Learning System (CABLS), Khan's Octagonal Framework, Teacher Efficacy with Three Dimensions and Community of Inquiry (CoI).

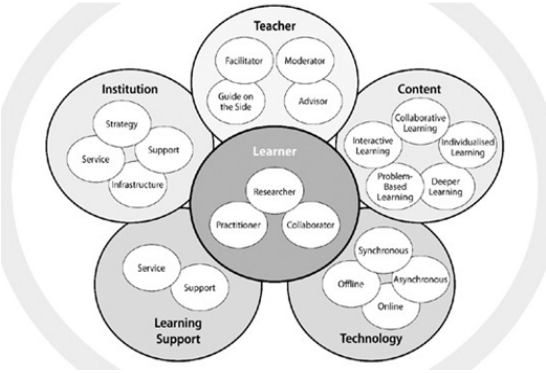

Figure 1. Complex Adaptive Blended Learning System

Figure 1 presents a diagram that outlines all the components of the Complex Adaptive Blended Learning System, or CABLS framework (Wang, Y., Han, X., & Yang, J., 2015).

According to Cleveland-Innes and Wilton's (2018) Guide to Blended Learning, CABLS take a comprehensive approach to the design and implementation of blended learning and apply to blended learning in any area of education, making the necessary adjustments based on the needs and characteristics of the learners. Although the learner occupies the model's center, all of its elements interact with one another. The system consists of six elements, each of which has a supporting system. The learner, the teacher, the technology, the content, the learning support, and the institution are these six components. The subsystems play roles in relation to the primary components.

The learner co-evolves with other subsystems, continuously assuming new identities, and transitioning from a passive to an active learner. To create a new generation of educators with distinct identities and multidisciplinary professional abilities, teachers co-evolve in blended learning settings with other subsystems, notably learners. The content that learners engage with in blended learning has never been as rich and interesting as it is now because to constant engagement with, and regular direction from, the learner, the teacher, the technology, the learning support, and the institution. While keeping blended learning balanced on "the edge of chaos," stable enough to maintain its internal structure but perceptive enough to the changing needs of the learner and the new challenges and opportunities presented by new technologies, technology's constant advancements frequently "kick" blended learning to revitalize it. Academic support and technical support are the two categories of support that are incorporated into this study's concept of learning support. Technical support aims to help students increase their knowledge of technological tools and their proficiency in using those tools to complete specific learning tasks, whereas academic support concentrates on assisting students in developing effective learning strategies, such as time management and collaborative skills. When developing learning support mechanisms, learners' needs should be taken into account.

These systems receive information from the student, the teacher, the technology, the content, and the learning support, all of which are interrelated. The institution then serves as the main driver for the development of the auxiliary subsystems. As a result of its focus on the interdependency and dynamic interaction between the subsystems, the CABLS framework differs from earlier blended learning models.

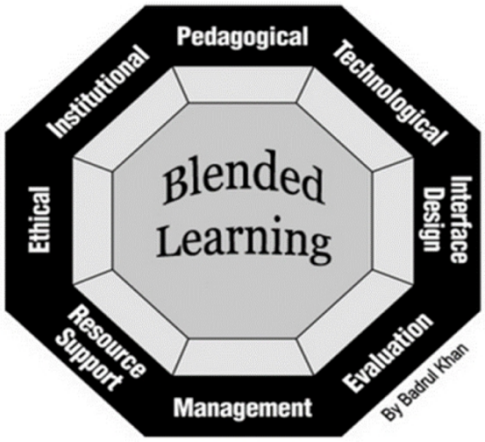

Figure 2. Khan's Octagonal Framework

The Khan's Octagonal Framework, which was employed in the study by Akpan (2015), is shown in Figure 2.

It has eight dimensions, namely: institutional, in this case, institutions and tertiary institutions; pedagogical that includes elements of learning; technological which regards the use of technology such as computer devices, learning management systems, computer networks, and others; interface design which concerns the appearance and interface design of blended learning that adjusts to the needs of each institution; evaluation which focuses on how assessment must be done with fairness and validity; management which deals with the proper management on the operations of blended learning programs involving various elements in the education institution; resource support which involves various resources such as human resources and others; and ethical which deals with learning the cultures and right attitudes.

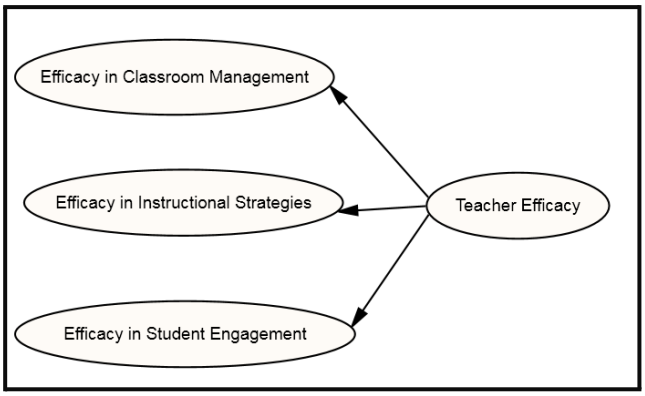

Figure 3. Teacher Efficacy with Three Dimensions

Figure 3 from a study by Ling et al. (2015) depicts the Teacher Efficacy with Three Dimensions. The effectiveness of teachers can be seen in three areas, including classroom management, instructional tactics, and student involvement, as seen in the illustration. It is anticipated that teacher self-efficacy will direct instructors' actions, choices, and motivation with regard to instruction. Its ability to influence teachers' decisions serves as its cornerstone.

In order to promote self-efficacy, goals must be valid and clear and to include short-term objectives that are easy to be understood within the context of achieving longer-term goals. In an educational context, teaching efficacy has been shown to affect one's sense of self-worth, motivation, attitude, capabilities, and commitment.

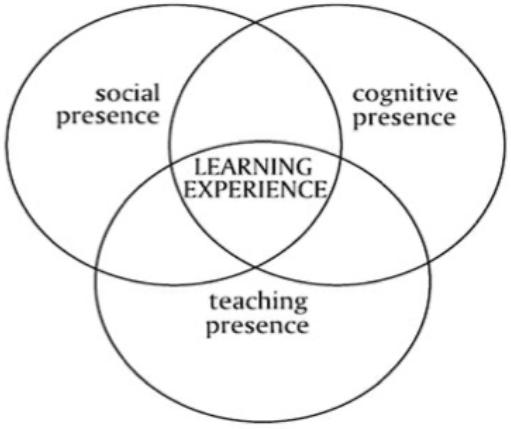

Figure 4. Community of Inquiry Model

Through the creation of three interconnected presences—social, cognitive, and teaching—the Community of Inquiry (CoI) framework, as detailed in Fiock's study (2020), aims to create a meaningful learning experience. The framework has three components: instruction, social presence, and cognitive presence.

Designing, facilitating, and guiding cognitive and social processes for the realization of meaningful learning is referred to as teaching presence. Social presence is the ability to project oneself as a real person and to see others as "real" in an online setting. It entails open communication, affective expressiveness, and cohesiveness among the group. While cognitive presence describes how well students are able to create and verify meaning through extended thinking and conversation. Building a strong foundation of social presence and instructional presence to encourage cognitive presence in a course is the core goal of COI. (PoRTAL: Purdue Repository for Online Teaching and Learning | Purdue University Innovative Learning, 2020).

Given that it dealt with the preparation and effectiveness of instructors, which was judged an adequate basis for research, the study is based on the theories discussed and illustrated.

This study represents the conceptual framework of determining the levels and relationship of readiness and efficacy of the secondary Mathematics teachers on blended learning.

To give a better view of the research problem, it is presented in a diagram form.

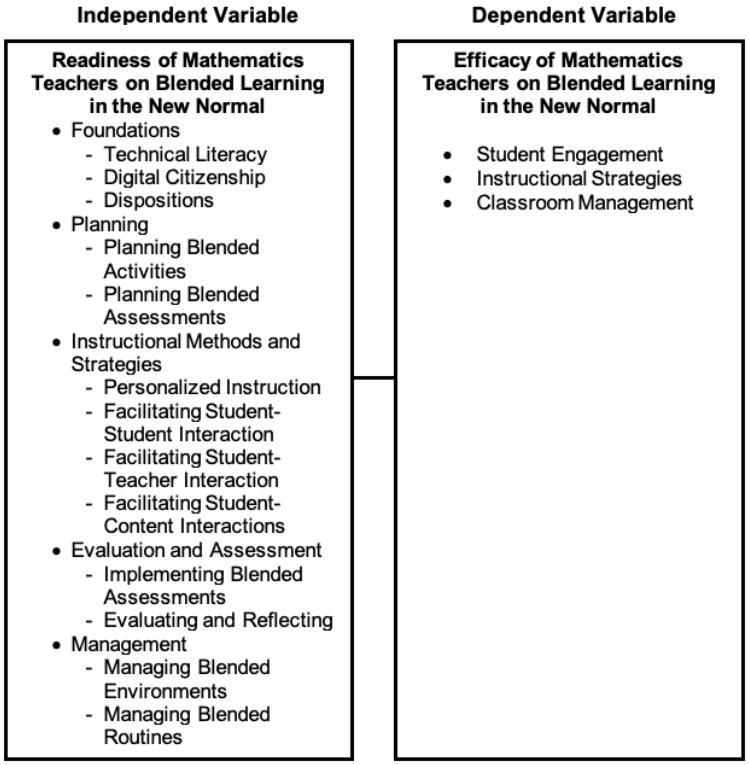

Figure 5. Research Paradigm of the Study

Figure 5 illustrates the relationship between the independent and dependent variables of this study. The independent variable as illustrated in the research paradigm is the level of readiness of Mathematics teachers on blended learning in the new normal with regards to foundations, planning, instructional methods and strategies, evaluation and assessment, and management. On the other hand, the dependent variable illustrates the level of efficacy on blended learning in the new normal with regards to student engagement, instructional strategies, and classroom management.

Statement of the Problem

This study aims to determine the levels of readiness and efficacy of secondary Mathematics teachers on blended learning in the new normal.

Specifically, the study ought to answer the following questions:

1. What is the level of readiness of Mathematics teachers on blended teaching in the new normal in terms of:
   - 1.1 Foundations;
     - 1.1.1 Technical Literacy;
     - 1.1.2 Digital Citizenship; and
     - 1.1.3 Dispositions.
   - 1.2 Planning;
     - 1.2.1 Planning Blended Activities; and
     - 1.2.2 Planning Blended Assessments.
   - 1.3 Instructional Methods and Strategies;
     - 1.3.1 Personalized Instruction;
     - 1.3.2 Facilitating Student-Student Interaction;
     - 1.3.3 Facilitating Student-Teacher Interaction; and
     - 1.3.4 Facilitating Student-Content Interactions.
   - 1.4 Evaluation and Assessment; and
     - 1.4.1 Implementing Blended Assessments; and
     - 1.4.2 Evaluating and Reflecting.
   - 1.5 Management.

1.5.1 Managing Blended Environments; and
1.5.2 Managing Blended Routines.

2. What is the level of efficacy of Mathematics teachers on blended teaching in the new normal in terms of:
   2.1 Student Engagement;
   2.2 Instructional Strategies; and
   2.3 Classroom Management.
3. Is there a significant relationship between the readiness and efficacy of Mathematics teachers on blended teaching in the new normal?

Research Methodology

This study employed a descriptive-correlational research approach to measure variables and describe how they relate to one another. A population, circumstance, or phenomena is intended to be correctly and methodically described through descriptive study. When the goal of the research is to identify traits, frequency, trends, and classifications, it is a suitable option. When little is known about the subject or issue, it is helpful. When using a correlational study design, no variables are within the researcher's direct control or manipulation. The link between two (or more) variables, which may be positive or negative, is reflected in terms of its strength and/or direction (Bhandari, 2022.)

This study is descriptive-correlational since it examined the levels of readiness and efficacy of the secondary Mathematics teachers on blended learning in the new normal. The researcher used this research design because it allows for quick data collection from blended learning environments, which is useful in establishing the relationship between the secondary Mathematics teachers' readiness and efficacy for blended learning in the new normal. This is done in order to provide a clear picture of its characteristics and connections as they currently exist.

The respondents of this study were mainly the selected secondary Mathematics teachers within the twenty-one (21) secondary public schools in the Division of Calamba. They were determined using Slovin's formula. After knowing the number of respondents, purposive sampling was conducted. It is a non-probability sampling technique in which the researcher carefully chooses the participants considering the intention of the study with the expectation that every respondent will be able to deliver exclusive and rich data that are relevant to the study. Considering the sample size, the purposive sampling method is determined by data saturation (Suen et al., 2014). The researcher purposively selected the respondents for they are deemed knowledgeable individuals who can provide the appropriate data relevant to the study.

Table 1. Population and sample of the Study

School	Population	Percentage	Sample Size
Bubuyan Integrated School	4	0.0240	3
Bunggo Integrated School	4	0.0160	2
Buntog National High School	4	0.0160	2
Calamba Bayside Integrated School	18	0.0960	12
Calamba City School for the Arts	2	0.0160	2
Calamba City Science High School	4	0.0320	4
Calamba Integrated School	13	0.0800	10
Camp Vicente Lim Integrated School	15	0.0800	10
Canlubang Integrated School	4	0.0160	2
Castor Alviar National High School	9	0.0240	3
Eduardo Barretto, Sr. National High School	11	0.0560	7
Integrated School of Lawa	5	0.0160	2
Kapayapaan Integrated School	12	0.0640	8
Lecheria Integrated School	8	0.0400	5
Looc Integrated School	11	0.0480	6
Mabato National High School	4	0.0240	3
Majada In Integrated School	6	0.0400	5
Makiling Integrated School	14	0.0800	10
Palo Alto Integrated School	13	0.0960	12
Punta Integrated School	12	0.0720	9
San Cristobal National High School	8	0.0640	8

Population = 181
Sample = 125
Source: Division Office (Calamba City)

Table 1 shows the population and sample of the study. With the computed sample size of 125, 3 came from Bubuyan Integrated School, 2 came from Bunggo Integrated School, 2 came from Buntog National High School, 12 came from Calamba Bayside Integrated School, 2 came from Calamba City School for the Arts, 4 came from Calamba City Science High School, 10 came from Calamba Integrated School, 10 came from Camp Vicente Lim Integrated School, 2 came from Canlubang Integrated School, 3 came from Castor Alviar National High School, 7 came from Eduardo Barretto, Sr. National High School, 2 came from Integrated School of Lawa, 8 came from Kapayapaan Integrated School, 5 came from Lecheria Integrated School, 6 came from

Looc Integrated School, 3 came from Mabato National High School, 5 came from Majada In Integrated School, 10 came from Makiling Integrated School, 12 came from Palo Alto Integrated School, 9 came from Punta Integrated School, and 8 came from San Cristobal National High School.

This study used survey questionnaires that is divided into two parts. The first part is entitled “K to 12 Blended Teaching Readiness” which is adopted from Graham et al. (2019) and is used to collect quantitative data on assessing the level of readiness of teachers for blended teaching. It consists of five super factors with subfactors each, in terms of foundations with regards to technical literacy, digital citizenship, and dispositions; planning with regards to planning blended activities and planning blended assessments; instructional methods and strategies with regards to personalizing instruction, facilitating student-student interaction, facilitating student-teacher interaction, and facilitating student-content interactions; assessment and evaluation with regards to implementing blended assessments and evaluating and reflecting; and management with regards to managing blended learning environment and managing blended learning routines. It further consists of 65 items in total. The psychometric properties of the said instrument have been tested. A four-point Likert scale was used. The respondents rated each indicator using a scale from one (1) to four (4), where the highest rating of four (4) corresponds to "Strongly Agree,” and the lowest rating of one (1) corresponds to "Strongly Disagree." Ratings of two (2) and three (3) mean "Disagree" and "Agree," respectively.

The second part is “The Teachers' Sense of Efficacy Scale” which is also used in the study of Duffin et al. (2012).which is used to collect quantitative data on assessing the level of efficacy of the teachers. This includes three teacher efficacy subscales: instructional strategies, classroom management, and student engagement. Each subscale consists of four items and further consists of twelve (12) items in total. A nine-point Likert scale was used. The respondents rated each indicator using a scale from one (1) to nine (9), where the highest rating of eight (8) and nine (9) corresponds to "A great deal,” and the lowest rating of one (1) corresponds to "Nothing." Ratings of two (2), three (3), four (4), five (5), six (6), and seven (7) mean "Very Little," "Some influence," and "Quite a bit," respectively. In the construction of the questionnaire described above, an extensive review of various books, publications, and internet sites was used. An initial draft of the research tool was prepared and presented to professors and panel members for comments and suggestions. Validation was done to assess the representation of the items with those of others dealing with the same area of investigation. The assistance of the adviser was relevant to the contents of the questionnaire that was solicited.

The educational sector is facing challenges as a result of the changes brought on by the COVID-19 virus's proliferation. The researcher as a teacher finds it important to carefully analyze the state of their subject because the findings can not only inform people but also serve as a vital resource for any programs, trainings, or development that the government may employ. The researcher has been driven by the excitement and interest of to learn more about the readiness and efficacy of teachers in implementing blended learning in the new normal.

The researcher first requested permission from the division head in letter, outlining the study's objectives and asking for permission to collect data. Following permission, the researcher asked the teachers' assistance through the school administrators in order to carry out the data collection process using an online survey. The teachers were provided with the surveys, the purpose of the study, and instructions on how to respond through a link and QR code from Google Forms. Depending on what was most convenient for them, the teachers/participants subsequently responded to the survey questions synchronously or asynchronously. The responses gathered were compiled, tallied, computed, and interpreted. Later, the data gathered was given appropriate statistical treatment, analyzed, and interpreted.

The researcher used the following statistical methods to statistically analyze the data collected. The weighted mean and standard deviation are used to analyze the responses to survey questionnaires that assess secondary mathematics teachers' readiness and efficacy in blended learning under the new normal. While the Pearson R correlation was used to ascertain the connection between the readiness and efficacy of the teachers.

Statement of the Problem	Statistical Treatment
The level of readiness of Mathematics teachers	Weighted Mean and Standard Deviation
The level of efficacy of Mathematics teachers	Weighted Mean and Standard Deviation
The relationship between the readiness and level of efficacy of Mathematics teachers	Pearson R Correlation

To determine the level of readiness of secondary Mathematics teachers, the four-point Likert scale below was used:

Scale	Weighted Mean	Verbal Description	Verbal Interpretation
4	3.26-4.00	Strongly Agree	High Level of Readiness

3	2.51-3.25	Agree	Moderate Level of Readiness
2	1.76-2.50	Disagree	Low Level of Readiness
1	1.00-1.75	Strongly Disagree	Not Ready

To determine the level of efficacy of secondary Mathematics teachers, the nine-point Likert scale below was used:

Scale	Weighted Mean	Verbal Description	Verbal Interpretation
8-9	7.41-9.00	A great deal	Extremely Efficient
7-6	5.81-7.40	Quite a bit	Very Efficient
4-5	4.21-5.80	Some influence	Moderately Efficient
2-3	2.61-4.20	Very little	Slightly Efficient
	1.00-2.60	Nothing	Not at all Efficient

To determine the relationship between the levels of readiness and efficacy, Guildford Rule of Thumb was used to interpret the computed Pearson r correlation.

r	Strength of Relationship
< .2	Negligible Relationship
.2 - .4	Low Relationship
.4 - .7	Moderate Relationship
.7 - .9	High Relationship
> .9	Very high Relationship

Result and Discussion

Level of Readiness of Mathematics Teachers

The level of readiness of Mathematics teachers were determined in the following tables in terms of foundations, planning, instructional methods and strategies, evaluation and assessment, and management.

Table 2. Level of Readiness of Mathematics Teachers in terms of Foundations with regards to Technical Literacy

Statement	Mean (x)	Standard Deviation	Verbal Interpretation
Master new online technologies on your own.	3.51	0.52	High Level of Readiness
Successfully troubleshoot unfamiliar technological issues that you and students encounter.	3.26	0.56	High Level of Readiness
Use the tools commonly found in a learning management system (e.g. gradebook, announcements, content pages, quizzes, discussion boards).	3.43	0.59	High Level of Readiness
Use content-specific educational software outside of the learning management system (e.g., math/literacy/science educational software, educational games).	3.33	0.58	High Level of Readiness
Find quality online content resources relevant to student learning needs (e.g., media resources, lesson plans, etc.)	3.50	0.53	High Level of Readiness
Overall mean = 3.41 *Standard Deviation = 0.41* *Verbal Interpretation = High Level of Readiness*			

Point	Weighted Mean	Verbal Interpretation
4	3.26-4.00	High Level of Readiness
3	2.51-3.25	Moderate Level of Readiness
2	1.76-2.50	Low Level of Readiness
1	1.00-1.75	Not Ready

Table 2 reveals Level of Readiness of Mathematics Teachers in terms of Foundations with regards to Technical Literacy. The table shows that the statement Master new online technologies on your own (M = 3.51, SD = 0.52) with a verbal interpretation of High Level of Readiness. It also shows that the statement Successfully troubleshoot unfamiliar technological issues that you and students encounter (M = 3.26, SD = 0.56) with a verbal interpretation of High Level of Readiness. It also shows in the statement Use the tools commonly found in a learning management system (e.g. gradebook, announcements, content pages, quizzes, discussion boards) (M = 3.43, SD = 0.59) with a verbal interpretation of High Level of Readiness. It shows in the statement Use content-specific educational software outside of the learning management system (e.g., math/literacy/science educational software, educational games) (M = 3.33, SD = 0.58) with a verbal interpretation of High Level of Readiness. It also shows in the statement Find quality online content resources relevant to student learning needs (e.g., media resources, lesson plans, etc.) (M = 3.50, SD = 0.53) with a verbal interpretation of High Level of Readiness.

It can be gleaned from the results that the Level of Readiness of Mathematics Teachers in terms of Foundations with regards to Technical Literacy has on overall mean of 3.41 with High Level of Readiness as verbal interpretation. This implied that the teachers

have a high level of readiness of using online technologies in adopting to blended learning modality. The result is supported by the result of the study conducted by Vergonia and Mombas (2022) where it also yielded that the teachers are ready for blended learning in terms of technical literacy. This means that the teachers have the necessary knowledge and skills to master the emerging online technologies and overcome potential challenges. Moreover, technical literacy is considered to be one of the essential competencies needed for successful blended teaching in which can be better perceived from technological dimensions of Khan's Octagonal Framework (2005). The technological component also requires the services of technical experts to support the system.

Table 3. Level of Readiness of Mathematics Teachers in terms of Foundations with regards to Digital Citizenship

Statement	Mean (x)	Standard Deviation	Verbal Interpretation
Model the legal use of instructional materials (e.g. copyright, fair use, creative commons).	3.33	0.54	High Level of Readiness
Ensure student online privacy (e.g., technology use agreements for sharing student data, protection of online data and identities).	3.46	0.56	High Level of Readiness
Model online safety for students (e.g., ensure password protection, protect against cyberbullying, detect scams, use content filters and virus software, etc.).	3.39	0.54	High Level of Readiness
Ensure academic honesty in an online learning environment (e.g., prevent cheating, check for plagiarism, etc.).	3.38	0.61	High Level of Readiness
Ensure access to online learning activities for all students (e.g., low socioeconomic status, English language learners, special education, gifted, etc.).	3.38	0.55	High Level of Readiness
Overall mean = 3.41 *Standard Deviation = 0.41* *Verbal Interpretation = High Level of Readiness*			

Point	Weighted Mean	Verbal Interpretation
4	3.26-4.00	High Level of Readiness
3	2.51-3.25	Moderate Level of Readiness
2	1.76-2.50	Low Level of Readiness
1	1.00-1.75	Not Ready

Table 3 presents the Level of Readiness of Mathematics Teachers in terms of Foundations with regards to Digital Citizenship. Based from the results, the statement Model the legal use of instructional materials (e.g. copyright, fair use, creative commons) (M = 3.33, SD = 0.54) with a verbal interpretation of High Level of Readiness. It also shows that the statement Ensure student online privacy (e.g., technology use agreements for sharing student data, protection of online data and identities) (M = 3.46, SD = 0.56) with a verbal interpretation of High Level of Readiness. It also shows in the statement Model online safety for students (e.g., ensure password protection, protect against cyberbullying, detect scams, use content filters and virus software, etc.) (M = 3.39, SD = 0.54) with a verbal interpretation of High Level of Readiness. It shows in the statement Ensure academic honesty in an online learning environment (e.g., prevent cheating, check for plagiarism, etc.) (M = 3.38, SD = 0.61) with a verbal interpretation of High Level of Readiness. It also shows in the statement Ensure access to online learning activities for all students (e.g., low socioeconomic status, English language learners, special education, gifted, etc.) (M = 3.38, SD = 0.55) with a verbal interpretation of High Level of Readiness.

It can be observed that the Level of Readiness of Mathematics Teachers in terms of Foundations with regards to Digital Citizenship has an overall mean of 3.39 with High Level of Readiness as verbal interpretation. This implied that exposure to the digital environment can make digital citizens who can not only model the use but also ensure the academic access and safety in blended learning environment. In line with the study of Keskin and Yurdugül (2020), since the learners are accepted as a digital native, researchers start with the assumption that the learners are sufficient to use blended learning technologies. Similarly, the study of Elcicek et al. (2018) has shown that the participants, graduate students, having distance education can do online learning environment ethically, correctly and consciously which determined their high level to digital citizenship. On contrary, the results have overcome the issues highlighted by LillyWhite (2021) of hampering the process and development of digital skills.

Table 4. Level of Readiness of Mathematics Teachers in terms of Foundations with regards to Dispositions

Statement	Mean (x)	Standard Deviation	Verbal Interpretation
I believe students perform better when they have some control over the pace of their learning.	3.49	0.58	High Level of Readiness
I believe individual student access to devices in the classroom should enable students to take greater ownership of their learning.	3.46	0.59	High Level of Readiness
I believe online technologies allow students and teachers to do things that would be difficult or impossible in classrooms without online technologies.	3.48	0.59	High Level of Readiness
I believe it is important for teachers to explore new teaching strategies that blend in-person and online learning.	3.56	0.51	High Level of Readiness

I believe individual student access to online devices in classrooms enables development of important life skills (e.g., creativity, collaboration, critical thinking, and communication).	3.54	0.53	High Level of Readiness

Overall mean = 3.51
Standard Deviation = 0.44
Verbal Interpretation = High Level of Readiness

Point	Weighted Mean	Verbal Interpretation
4	3.26-4.00	High Level of Readiness
3	2.51-3.25	Moderate Level of Readiness
2	1.76-2.50	Low Level of Readiness
1	1.00-1.75	Not Ready

Table 4 presents the Level of Readiness of Mathematics Teachers in terms of Foundations with regards to Dispositions. As revealed in the table, the statement I believe students perform better when they have some control over the pace of their learning (M = 3.49, SD = 0.58) with a verbal interpretation of High Level of Readiness. It also shows that the statement I believe individual student access to devices in the classroom should enable students to take greater ownership of their learning (M = 3.46, SD = 0.59) with a verbal interpretation of High Level of Readiness. It also shows in the statement I believe online technologies allow students and teachers to do things that would be difficult or impossible in classrooms without online technologies (M = 3.48, SD = 0.59) with a verbal interpretation of High Level of Readiness. It shows in the statement I believe it is important for teachers to explore new teaching strategies that blend in-person and online learning (M = 3.56, SD = 0.51) with a verbal interpretation of High Level of Readiness. It also shows in the statement I believe individual student access to online devices in classrooms enables development of important life skills (e.g., creativity, collaboration, critical thinking, and communication) (M = 3.54, SD = 0.53) with a verbal interpretation of High Level of Readiness.

It revealed that the Level of Readiness of Mathematics Teachers in terms of Foundations with regards to Dispositions has an overall mean of 3.51 with High Level of Readiness as verbal interpretation. It suggested that teachers hold the use of technology in enhancing learning among students in a positive attitude in high esteem. Additionally, it demonstrated that teachers strongly believed that accessibility of students to online tools and technologies would improve learning.

The outcome backs up Graham et al(2019)'s assertion that foundational dispositions and abilities are crucial for blended learning and are hence important competencies. Despite the study's findings, which were conducted by D. Anoba and Cahapay (2020) found a slight dispositional readiness, which suggests that most respondents have a progressive and optimistic view on blended learning. It is crucial to remember that while it is beneficial for teachers to possess the fundamental knowledge and abilities, it would be preferable and much more successful for teaching to take place with a positive outlook.

Table 5. Level of Readiness of Mathematics Teachers in terms of Planning with regards to Planning Blended Activities

Statement	Mean (x)	Standard Deviation	Verbal Interpretation
Create activities that combine online and in-person components to help students develop important life skills (e.g., creativity, critical thinking, communication, and collaboration).	3.40	0.52	High Level of Readiness
Sequence activities in the learning management system in an easy-to-follow format.	3.47	0.55	High Level of Readiness
Strategically combine online and in-person activities that enable student ownership of their learning (e.g., flexibility in when, where and how they learn).	3.41	0.53	High Level of Readiness
Incorporate existing online and offline educational materials into learning activities.	3.46	0.53	High Level of Readiness
Create new online learning materials when relevant content is not available.	3.50	0.53	High Level of Readiness

Overall mean = 3.45
Standard Deviation = 0.40
Verbal Interpretation = High Level of Readiness

Point	Weighted Mean	Verbal Interpretation
4	3.26-4.00	High Level of Readiness
3	2.51-3.25	Moderate Level of Readiness
2	1.76-2.50	Low Level of Readiness
1	1.00-1.75	Not Ready

Table 5 presents the Level of Readiness of Mathematics Teachers in terms of Planning with regards to Planning Blended Activities. Based from the results, it shows that the statement Create activities that combine online and in-person components to help students develop important life skills (e.g., creativity, critical thinking, communication, and collaboration) (M = 3.40, SD = 0.52) with a verbal interpretation of High Level of Readiness. It also shows that the statement Sequence activities in the learning management system in an easy-to-follow format (M = 3.47, SD = 0.55) with a verbal interpretation of High Level of Readiness. It also shows in the statement Strategically combine online and in-person activities that enable student ownership of their learning (e.g., flexibility in when, where and how they learn) (M = 3.41, SD = 0.53) with a verbal interpretation of High Level of Readiness. It shows in the statement Incorporate existing online and offline educational materials into learning activities (M = 3.46, SD = 0.53) with a verbal interpretation of High Level of Readiness. It also shows in the statement Create new online learning materials when relevant content is not available (M = 3.50, SD = 0.53) with a verbal interpretation of High Level of Readiness.

It can be gleaned that the Level of Readiness of Mathematics Teachers in terms of Planning with regards to Planning Blended Activities is 3.45 with High Level of Readiness as verbal interpretation. The favorable outcome suggests that the teachers are capable

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of strategically combining both new and old activities for online and in-person classes that are regarded relevant and appropriate for the achievement of effective blended learning.

This supports the study of Bahri et al. (2021) in which it is stated that blended learning requires teachers to implement a well-designed blended learning activity which can assist the efficacy of students' learning.

Table 6. Level of Readiness of Mathematics Teachers in terms of Planning with regards to Planning Blended Assessments

Statement	Mean (x)	Standard Deviation	Verbal Interpretation
Create performance-based assessments that require students to use technology in ways that demonstrate important life skills (creativity, critical thinking, communication, collaboration).	3.46	0.52	High Level of Readiness
Create formative assessments to measure students' learning progress (e.g., polls, online surveys).	3.50	0.53	High Level of Readiness
Incorporate appropriate media into assessments (e.g., video, audio, images).	3.41	0.53	High Level of Readiness
Determine when to use computer-administered vs. paper-based assessments.	3.46	0.53	High Level of Readiness
Create an approach to assessment that allows for student choice in how they demonstrate mastery of learning objectives.	3.46	0.52	High Level of Readiness

Overall mean = 3.46
Standard Deviation = 0.41
Verbal Interpretation = High Level of Readiness

Point	Weighted Mean	Verbal Interpretation
4	3.26-4.00	High Level of Readiness
3	2.51-3.25	Moderate Level of Readiness
2	1.76-2.50	Low Level of Readiness
1	1.00-1.75	Not Ready

Table 6 presents the Level of Readiness of Mathematics Teachers in terms of Planning with regards to Planning Blended Assessments. It shows that the statement Create performance-based assessments that require students to use technology in ways that demonstrate important life skills (creativity, critical thinking, communication, collaboration) (M = 3.46, SD = 0.52) with a verbal interpretation of High Level of Readiness. It also shows that the statement Create formative assessments to measure students' learning progress (e.g., polls, online surveys) (M = 3.50, SD = 0.53) with a verbal interpretation of High Level of Readiness. It also shows in the statement Incorporate appropriate media into assessments (e.g., video, audio, images) (M = 3.41, SD = 0.53) with a verbal interpretation of High Level of Readiness. It shows in the statement Determine when to use computer-administered vs. paper-based assessments (M = 3.46, SD = 0.53) with a verbal interpretation of High Level of Readiness. It also shows in the statement Create an approach to assessment that allows for student choice in how they demonstrate mastery of learning objectives (M = 3.46, SD = 0.52) with a verbal interpretation of High Level of Readiness.

It is shown that the Level of Readiness of Mathematics Teachers in terms of Planning with regards to Planning Blended Assessments has an overall mean of 3.46 with High Level of Readiness as verbal interpretation. This implied that the teachers have high capability in crafting appropriate types of assessment tools with the integration of online application and technology which can deal with higher-order thinking skills. This supports the implication from the study of Amaki and Gruba (2020) that the teachers need to ensure that their assessment plans match and respond to the curriculum due to the increase of observation and evaluation.

Table 7. Level of Readiness of Mathematics Teachers in terms of Instructional Methods and Strategies with regards to Personalizing Instruction

Statement	Mean (x)	Standard Deviation	Verbal Interpretation
Use data collected online to customize students' learning experience.	3.40	0.51	High Level of Readiness
Use data collected online to determine which groups or individual students need additional instructional support.	3.50	0.53	High Level of Readiness
Answer students' course related questions online (in addition to in person).	3.40	0.52	High Level of Readiness
Use student performance data to provide timely help with misconceptions.	3.46	0.52	High Level of Readiness
Address any limitations of educational software through individual or small group instruction.	3.44	0.51	High Level of Readiness

Overall mean = 3.44
Standard Deviation = 0.46
Verbal Interpretation = High Level of Readiness

Point	Weighted Mean	Verbal Interpretation
4	3.26-4.00	High Level of Readiness
3	2.51-3.25	Moderate Level of Readiness
2	1.76-2.50	Low Level of Readiness
1	1.00-1.75	Not Ready

Table 7 from the previous page presents the Level of Readiness of Mathematics Teachers in terms of Instructional Methods and Strategies with regards to Personalizing Instruction. Based from the table, it shows that the statement Use data collected online to

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customize students' learning experience (M = 3.40, SD = 0.51) with a verbal interpretation of High Level of Readiness. It also shows that the statement Use data collected online to determine which groups or individual students need additional instructional support (M = 3.50, SD = 0.53) with a verbal interpretation of High Level of Readiness. It also shows in the statement Answer students' course related questions online (in addition to in person) (M = 3.40, SD = 0.52) with a verbal interpretation of High Level of Readiness. It shows in the statement Use student performance data to provide timely help with misconceptions (M = 3.46, SD = 0.52) with a verbal interpretation of High Level of Readiness. It also shows in the statement Address any limitations of educational software through individual or small group instruction (M = 3.44, SD = 0.51) with a verbal interpretation of High Level of Readiness.

It revealed that the Level of Readiness of Mathematics Teachers in terms of Instructional Methods and Strategies with regards to Personalizing Instruction is 3.44 with High Level of Readiness as verbal interpretation. The results have suggested that teachers have the opportunity to choose and modify the instructions based on what aids pupils in learning most effectively. The result aids the concept of O'Byrne and Pytash (2015) that blended learning has the opportunity to provide personalized instruction with elements of student freedom of control over path, pace, time and place. Thus, this indicates that teachers and students, who share equal responsibility, shall be provided the autonomy to teach and learn in these blended learning environments.

Table 8. Level of Readiness of Mathematics Teachers in terms of Instructional Methods and Strategies with regards to Facilitating Student-Student Interaction

Statement	Mean (x)	Standard Deviation	Verbal Interpretation
Facilitate students' small-group discussions online (in addition to in person).	3.38	0.52	High Level of Readiness
Facilitate students' small-group collaboration on projects online (in addition to in person).	3.50	0.52	High Level of Readiness
Strengthen students' sense of belonging to the classroom community using online communication.	3.48	0.53	High Level of Readiness
Monitor students' online interactions with each other to ensure quality participation.	3.46	0.53	High Level of Readiness
Create opportunities for students to teach each other inside and outside of class using online technology.	3.47	0.53	High Level of Readiness
Overall mean = 3.46 *Standard Deviation = 0.41* *Verbal Interpretation = High Level of Readiness*			

Point	Weighted Mean	Verbal Interpretation
4	3.26-4.00	High Level of Readiness
3	2.51-3.25	Moderate Level of Readiness
2	1.76-2.50	Low Level of Readiness
1	1.00-1.75	Not Ready

Table 8 presents the Level of Readiness of Mathematics Teachers in terms of Instructional Methods and Strategies with regards to Facilitating Student-Student Interaction. As revealed in the above table, it shows that the statement Facilitate students' small-group discussions online (in addition to in person) (M = 3.38, SD = 0.52) with a verbal interpretation of High Level of Readiness. It also shows that the statement Facilitate students' small-group collaboration on projects online (in addition to in person) (M = 3.50, SD = 0.52) with a verbal interpretation of High Level of Readiness. It also shows in the statement Strengthen students' sense of belonging to the classroom community using online communication (M = 3.48, SD = 0.53) with a verbal interpretation of High Level of Readiness. It shows in the statement Monitor students' online interactions with each other to ensure quality participation (M = 3.46, SD = 0.53) with a verbal interpretation of High Level of Readiness. It also shows in the statement Create opportunities for students to teach each other inside and outside of class using online technology (M = 3.47, SD = 0.53) with a verbal interpretation of High Level of Readiness.

It can be observed from the table that the Level of Readiness of Mathematics Teachers in terms of Instructional Methods and Strategies with regards to Facilitating Student-Student Interaction is 3.46 with High Level of Readiness as verbal interpretation. The results suggested that teachers have the adeptness to cater students' online interactions with the view of opening opportunities for peer teaching. The result provides evidence for the study of Tayebinik (2013) in which it determines that blended learning foster the sense of belongingness and elimination of frustration due to online environment. This is given more emphasis in the CABLS framework in which the learner transforms from being passive to becoming active participants in the process of learning.

Table 9. Level of Readiness of Mathematics Teachers in terms of Instructional Methods and Strategies with regards to Facilitating Teacher-Student Interaction

Statement	Mean (x)	Standard Deviation	Verbal Interpretation
Determine when it is most effective to interact with students online versus in person.	3.43	0.53	High Level of Readiness
Strengthen caring relationships with students via online communication.	3.54	0.52	High Level of Readiness
Convey your personality in online text-based communication with students.	3.34	0.53	High Level of Readiness

Ensure students are comfortable communicating with you online.	3.48	0.52	High Level of Readiness
Promptly respond to student inquiries online in addition to in person).	3.42	0.50	High Level of Readiness

Overall mean = 3.44
Standard Deviation = 0.40
Verbal Interpretation = High Level of Readiness

Point	Weighted Mean	Verbal Interpretation
4	3.26-4.00	High Level of Readiness
3	2.51-3.25	Moderate Level of Readiness
2	1.76-2.50	Low Level of Readiness
1	1.00-1.75	Not Ready

Table 9 presents the Level of Readiness of Mathematics Teachers in terms of Instructional Methods and Strategies with regards to Facilitating Teacher-Student Interaction. It shows that the statement Determine when it is most effective to interact with students online versus in person (M = 3.43, SD = 0.53) with a verbal interpretation of High Level of Readiness. It also shows that the statement Strengthen caring relationships with students via online communication (M = 3.54, SD = 0.52) with a verbal interpretation of High Level of Readiness.

It also shows in the statement Convey your personality in online text-based communication with students (M = 3.34, SD = 0.53) with a verbal interpretation of High Level of Readiness. It shows in the statement Ensure students are comfortable communicating with you online (M = 3.48, SD = 0.52) with a verbal interpretation of High Level of Readiness. It also shows in the statement Promptly respond to student inquiries online in addition to in person) (M = 3.42, SD = 0.50) with a verbal interpretation of High Level of Readiness.

It can be observed that the Level of Readiness of Mathematics Teachers in terms of Instructional Methods and Strategies with regards to Facilitating Teacher-Student Interaction is 3.44 with High Level of Readiness as verbal interpretation.

The result contradicts the study of Krishan et al. (2020) in which it posed that the most significant challenge in the conduct of distance learning is having control of students' attitude towards learning and being able to facilitate active communication and collaboration. In addition to this, CABLS framework has illustrated how learner and teacher interact and co-evolve to become transformed learners and multi-disciplined professional, respectively.

Table 10. Level of Readiness of Mathematics Teachers in terms of Instructional Methods and Strategies with regards to Facilitating Student-Content Interactions

Statement	Mean (x)	Standard Deviation	Verbal Interpretation
Ensure that students can navigate online educational materials.	3.40	0.54	High Level of Readiness
Use the learning management system to monitor student activity with online educational materials to determine if they are on task.	3.53	0.53	High Level of Readiness
Use data to monitor student progress in subject-specific software programs.	3.46	0.53	High Level of Readiness
Help students to select online and offline materials that are relevant to them.	3.48	0.52	High Level of Readiness
Encourage student persistence with independent online learning activities (in addition to in-person activities).	3.46	0.53	High Level of Readiness

Overall mean = 3.47
Standard Deviation = 0.41
Verbal Interpretation = High Level of Readiness

Point	Weighted Mean	Verbal Interpretation
4	3.26-4.00	High Level of Readiness
3	2.51-3.25	Moderate Level of Readiness
2	1.76-2.50	Low Level of Readiness
1	1.00-1.75	Not Ready

Table 10 presents the Level of Readiness of Mathematics Teachers in terms of Instructional Methods and Strategies with regards to Facilitating Student-Content Interactions. It shows that the statement Ensure that students can navigate online educational materials (M = 3.40, SD = 0.54) with a verbal interpretation of High Level of Readiness. It also shows that the statement Use the learning management system to monitor student activity with online educational materials to determine if they are on task (M = 3.53, SD = 0.53) with a verbal interpretation of High Level of Readiness.

It also shows in the statement Use data to monitor student progress in subject-specific software programs (M = 3.46, SD = 0.53) with a verbal interpretation of High Level of Readiness. It shows in the statement Help students to select online and offline materials that are relevant to them (M = 3.48, SD = 0.52) with a verbal interpretation of High Level of Readiness. It also shows in the statement Encourage student persistence with independent online learning activities (in addition to in-person activities) (M = 3.46, SD = 0.53) with a verbal interpretation of High Level of Readiness.

It revealed that the Level of Readiness of Mathematics Teachers in terms of Instructional Methods and Strategies with regards to Facilitating Student-Content Interactions is 3.47 with High Level of Readiness as verbal interpretation. The findings suggested that teachers can assist students in accessing and navigating online learning materials in order to foster their development as independent learners.

The result supports the findings with the study of Owusu-Agyeman and Larbi-Siaw (2018) which states that students can interact with content in online environment effectively and develop own understanding through expansive learning. Moreover, CABLS framework has shown the engagement between the learner and content which bring about effective blending learning practice.

Table 11. Level of Readiness of Mathematics Teachers in terms of Evaluation and Assessment with regards to Implementing Blended Assessments

Statement	Mean (x)	Standard Deviation	Verbal Interpretation
Administer performance-based assessments online (in addition to offline assessments).	3.44	0.57	High Level of Readiness
Use online tools to provide students with opportunities for reflective self-assessment.	3.49	0.53	High Level of Readiness
Use online and traditional grading rubrics to clearly identify individual student performance gaps.	3.46	0.52	High Level of Readiness
Use data from online and offline assessments to identify patterns in group and whole class learning gaps.	3.47	0.52	High Level of Readiness
Help students use online and offline assessment data to guide their own learning progress.	3.50	0.56	High Level of Readiness

Overall mean = 3.47
Standard Deviation = 0.41
Verbal Interpretation = High Level of Readiness

Point	Weighted Mean	Verbal Interpretation
4	3.26-4.00	High Level of Readiness
3	2.51-3.25	Moderate Level of Readiness
2	1.76-2.50	Low Level of Readiness
1	1.00-1.75	Not Ready

Table 11 presents the Level of Readiness of Mathematics Teachers in terms of Evaluation and Assessment with regards to Implementing Blended Assessments. The results show that the statement Administer performance-based assessments online (in addition to offline assessments) (M = 3.40, SD = 0.57) with a verbal interpretation of High Level of Readiness. It also shows that the statement Use online tools to provide students with opportunities for reflective self-assessment (M = 3.49, SD = 0.53) with a verbal interpretation of High Level of Readiness. It also shows in the statement Use online and traditional grading rubrics to clearly identify individual student performance gaps (M = 3.46, SD = 0.52) with a verbal interpretation of High Level of Readiness. It shows in the statement Use data from online and offline assessments to identify patterns in group and whole class learning gaps (M = 3.47, SD = 0.52) with a verbal interpretation of High Level of Readiness. It also shows in the statement Help students use online and offline assessment data to guide their own learning progress (M = 3.50, SD = 0.56) with a verbal interpretation of High Level of Readiness.

It can be observed that the Level of' Readiness of Mathematics Teachers in terms of Evaluation and Assessment with regards to Implementing Blended Assessments is 3.47 with High Level of Readiness as verbal interpretation. This means that teachers can carry out and ensure the use of both online and offline evaluations, which makes blended learning more successful, especially in monitoring progress. Moreover, high level of preparedness of the teachers involve specify a clear indication that the quality and reliability of the evaluation process is not neglected, but instead given emphasis and importance, especially in this changing environment of the learning modality. Considering blended learning modality as the modality to use in the academe adds up more challenges to this area.

This backs up the assertions made by Koç, Liu, and Wachira (2015) that, because of the complexity of this non-traditional learning environment, evaluations have emerged as a pertinent issue. However, doing assessment activities has been simpler because to advanced technologies, such LMS software (Nguyen, 2017). Additionally, teachers must choose and use assessment techniques that are appropriate for blended learning, which involves realizing the potential of a range of technological tools for tracking student progress and enhancing instructional efficiency. It is essential that the teachers are well-informed of the level of students and their progress for continuous development.

Table 12. Level of Readiness of Mathematics Teachers in terms of Evaluation and Assessment with regards to Evaluating and Reflecting

Statement	Mean (x)	Standard Deviation	Verbal Interpretation
Use student performance data to evaluate the effectiveness of teachers' online instruction.	3.42	0.51	High Level of Readiness
Use student performance data to evaluate the effectiveness of online educational materials and assessments.	3.53	0.52	High Level of Readiness
Use student performance data to evaluate the effectiveness of how online and in-person activities and assessments were blended together.	3.40	0.51	High Level of Readiness
Provide students with multiple opportunities to provide input about the effectiveness of the online and in-person teaching strategies.	3.51	0.53	High Level of Readiness

Collaborate with other teachers to evaluate the effectiveness of units that blend online and in-person instruction.	3.47	0.52	High Level of Readiness

Overall mean = 3.47
Standard Deviation = 0.41
Verbal Interpretation = High Level of Readiness

Point	Weighted Mean	Verbal Interpretation
4	3.26-4.00	High Level of Readiness
3	2.51-3.25	Moderate Level of Readiness
2	1.76-2.50	Low Level of Readiness
1	1.00-1.75	Not Ready

Table 12 presents the Level of Readiness of Mathematics Teachers in terms of Evaluation and Assessment with regards to Evaluating and Reflecting. It shows that the statement Use student performance data to evaluate the effectiveness of teachers' online instruction (M = 3.42, SD = 0.51) with a verbal interpretation of High Level of Readiness. It also shows that the statement Use student performance data to evaluate the effectiveness of online educational materials and assessments (M = 3.53, SD = 0.52) with a verbal interpretation of High Level of Readiness. It also shows in the statement Use student performance data to evaluate the effectiveness of how online and in-person activities and assessments were blended together (M = 3.40, SD = 0.51) with a verbal interpretation of High Level of Readiness. It shows in the statement Provide students with multiple opportunities to provide input about the effectiveness of the online and in-person teaching strategies (M = 3.51, SD = 0.53) with a verbal interpretation of High Level of Readiness. It also shows in the statement Collaborate with other teachers to evaluate the effectiveness of units that blend online and in-person instruction (M = 3.47, SD = 0.52) with a verbal interpretation of High Level of Readiness.

It is revealed that Level of Readiness of Mathematics Teachers in terms of Evaluation and Assessment with regards to Evaluating and Reflecting is 3.47 with High Level of Readiness as verbal interpretation. This meant that teachers may increase their efficiency in their role as learning facilitators by continuously evaluating their performance and providing opportunities, in addition to helping students learn and grow.

The result supports the evidences shown by the study of De Vera et al. (2021) where the teachers appear to be very competent in preparation for evaluating and reflecting. However, the result disproves the notion that difficulties regarding this matter happen due to lack of practice and unfamiliarity of blended learning modalities. More so, Khan's Octagonal Framework has illustrated evaluation as one of its dimension which deals with the assessment of the capability and effectiveness of blended learning environment and observation of functionality and improvements of the specific learning modality. Furthermore, this imply that the teachers possess evaluation and reflection of themselves and of their students through the use of available and relevant data. It may be much helpful if teachers show collaboration among the peer groups to achieve better results.

Table 13. Level of Readiness of Mathematics Teachers in terms of Management with regards to Managing the Blended Learning Environment

Statement	Mean (x)	Standard Deviation	Verbal Interpretation
Configure the classroom space as needed to support the planned in-person and online classroom-based activities.	3.43	0.57	High Level of Readiness
Develop strategies for organizing and maintaining online learning materials (e.g., online documents, hyperlinks, resources, etc.).	3.38	0.54	High Level of Readiness
Develop procedures for the online submission and management of student created products (e.g., projects, reports, assignments, etc.).	3.43	0.56	High Level of Readiness
Establish clear procedures to help students manage the use of individual and/or classroom devices (laptops, tablets, headphones, etc.).	3.44	0.56	High Level of Readiness
Help students to manage their class-related online accounts and passwords.	3.42	0.57	High Level of Readiness

Overall mean = 3.42
Standard Deviation = 0.43
Verbal Interpretation = High Level of Readiness

Point	Weighted Mean	Verbal Interpretation
4	3.26-4.00	High Level of Readiness
3	2.51-3.25	Moderate Level of Readiness
2	1.76-2.50	Low Level of Readiness
1	1.00-1.75	Not Ready

Table 13 presents the Level of Readiness of Mathematics Teachers in terms of Management with regards to Managing the Blended Learning Environment. Based from the table, the level of Teachers' Readiness with regards to Managing the Blended Learning Environment. It shows that the statement Configure the classroom space as needed to support the planned in-person and online classroom-based activities w (M = 3.43, SD = 0.57) with a verbal interpretation of High Level of Readiness. It also shows that the statement Develop strategies for organizing and maintaining online learning materials (e.g., online documents, hyperlinks, resources, etc.) (M = 3.38, SD = 0.54) with a verbal interpretation of High Level of Readiness. It also shows in the statement Develop procedures for the online submission and management of student created products (e.g., projects, reports, assignments, etc.) (M = 3.43, SD = 0.56) with a verbal interpretation of High Level of Readiness. It shows in the statement Establish clear procedures to help students manage the use of individual and/or classroom devices (laptops, tablets, headphones, etc.) (M = 3.44, SD = 0.56) with a verbal interpretation of High Level of Readiness. It also shows in the statement Help students to manage their class-related online accounts and passwords (M = 3.42, SD = 0.57) with a verbal interpretation of High Level of Readiness.

It can be observed that the Level of Readiness of Mathematics Teachers in terms of Management with regards to Managing the Blended Learning Environment is 3.42 with High Level of Readiness as verbal interpretation. It suggests that teachers are able to create and implement clear processes that are beneficial for students' ability to successfully adapt to the learning environment. If the environment is not favorable for learning to occur, this vital role for learning wouldn't be as effective.

This supports the findings of Saboowala and Manghirmalani Mishra's study from 2021, which came to the conclusion that teachers would benefit from a mixed learning environment's flexibility in terms of accessibility and time and location. Further, teachers' active involvement will create a supportive environment that will improve engagement and learning. The rise of web applications, mobile devices, and telecommunications are just a few examples of how information technology (IT) advancements have inevitably affected how the curriculum is designed and delivered. While there are many difficulties, particularly for the teachers, it is important to emphasize that there are also many chances and areas for growth in this industry.

Table 14. Level of Readiness of Mathematics Teachers in terms of Management with regards to Managing Blended Learning Routines

Statement	Mean (x)	Standard Deviation	Verbal Interpretation
Provide clear classroom for transitioning between online and in-person learning activities.	3.48	0.55	High Level of Readiness
Establish procedures for how students should seek help when learning with online technology.	3.48	0.52	High Level of Readiness
Manage a classroom where students pursue mastery at their own pace.	3.44	0.57	High Level of Readiness
Establish guidelines that help students use online time wisely.	3.45	0.57	High Level of Readiness
Constructively intervene to address student use of technology that interferes with learning.	3.48	0.60	High Level of Readiness

Overall mean = 3.47
Standard Deviation = 0.46
Verbal Interpretation = High Level of Readiness

Point	Weighted Mean	Verbal Interpretation
4	3.26-4.00	High Level of Readiness
3	2.51-3.25	Moderate Level of Readiness
2	1.76-2.50	Low Level of Readiness
1	1.00-1.75	Not Ready

Table 14 presents the Level of Readiness of Mathematics Teachers in terms of Management with regards to Managing Blended Learning Routines. It shows that the statement Provide clear classroom for transitioning between online and in-person learning activities (M = 3.48, SD = 0.55) with a verbal interpretation of High Level of Readiness. It also shows that the statement Establish procedures for how students should seek help when learning with online technology (M = 3.48, SD = 0.52) with a verbal interpretation of High Level of Readiness. It also shows in the statement Manage a classroom where students pursue mastery at their own pace (M = 3.44, SD = 0.57) with a verbal interpretation of High Level of Readiness. It shows in the statement Establish guidelines that help students use online time wisely (M = 3.45, SD = 0.57) with a verbal interpretation of High Level of Readiness. It also shows in the statement Constructively intervene to address student use of technology that interferes with learning (M = 3.48, SD = 0.60) with a verbal interpretation of High Level of Readiness.

It is revealed that the Level of Readiness of Mathematics Teachers in terms of Management with regards to Managing Blended Learning Routines is 3.47 with High Level of Readiness as verbal interpretation. This suggest that teachers are able to make transitions of routines that adapt the blended learning modality without interventions of technology.The findings are consistent with the research conducted by Kundu et al. in 2021, which emphasizes the importance of blended routines for education in the context of merging online environments with face-to-face interactions. Additionally, the teaching function is permitted for both professors and students, as shown in Community of Inquiry used by Fiock (2020).

Level of Efficacy of Mathematics Teachers

The level of efficacy of Mathematics teachers were determined in terms of student engagement, instructional strategies, and classroom management.

Table 15. Level of Efficacy of Mathematics Teachers in terms of Student Engagement

Statement	Mean (x)	Standard Deviation	Verbal Interpretation
How much can you do to motivate students who show low interest in school work?	7.93	0.86	Extremely Efficient
How much can you do to get students to believe they can do well in school work?	8.02	0.85	Extremely Efficient
How much can you do to help your students value learning?	8.02	0.82	Extremely Efficient

How much can you assist families in helping their children do well in school?	7.90	0.92	Extremely Efficient

Overall mean = 7.97
Standard Deviation = 0.76
Verbal Interpretation = Extremely Efficient

Point	Weighted Mean	Verbal Interpretation
8-9	7.41-9.00	Extremely Efficient
6-7	5.81-7.40	Very Efficient
4-5	4.21-5.80	Moderately Efficient
2-3	2.61-4.20	Slightly Efficient
1	1.00-2.60	Not at all Efficient

Table 15 presents the level of teachers' efficacy with regards to Student Engagement. It shows that the statement How much can you do to motivate students who show low interest in school work? (M = 7.93, SD = 0.86) with a verbal interpretation of Extremely Efficient. It also shows that the statement How much can you do to get students to believe they can do well in school work? (M = 8.02, SD = 0.85) with a verbal interpretation of Extremely Efficient. It also shows in the statement How much can you do to help your students value learning? (M = 8.02, SD = 0.82) with a verbal interpretation of Extremely Efficient. It shows in the statement How much can you assist families in helping their children do well in school? (M = 7.90, SD = 0.92) with a verbal interpretation of Extremely Efficient.

It can be observed that the level of teachers' efficacy with regards to Student Engagement is 7.97 with Extremely Efficient as verbal interpretation. This suggested that they had a high level of success motivating pupils to participate in the learning process by encouragement, support, and faith in each learner's individual skills. This examines whether teachers understand the value of learning and how to influence students to value it as well. The outcome is consistent with Papa's (2015) research conclusions, which state that high levels of teacher efficacy attributes are necessary for students to successfully learn new skills and to meet their educational goals. This could mean that in order for students to achieve full potential in learning, teachers must also do their part in the best and most efficient that they can be in order to make sure that the learning process is not hindered by such factors. And student engagement also suggests important part of ensuring that learning take place in the most effective way possible.

Table 16. Level of Efficacy of Mathematics Teachers in terms of Instructional Strategies

Statement	Mean (x)	Standard Deviation	Verbal Interpretation
To what extent can you craft good questions for your students?	7.95	0.79	Extremely Efficient
How much can you use a variety of assessment strategies?	7.94	0.83	Extremely Efficient
To what extent can you provide an alternative explanation or example when students are confused?	8.03	0.78	Extremely Efficient
How well can you implement alternative strategies in your classroom?	8.00	0.84	Extremely Efficient

Point	Weighted Mean	Verbal Interpretation
8-9	7.41-9.00	Extremely Efficient
6-7	5.81-7.40	Very Efficient
4-5	4.21-5.80	Moderately Efficient
2-3	2.61-4.20	Slightly Efficient
1	1.00-2.60	Not at all Efficient

Overall mean = 7.98
Standard Deviation = 0.74
Verbal Interpretation = Extremely Efficient

Table 16 presents the Level of Efficacy of Mathematics Teachers in terms of Instructional Strategies. The results reveal that the statement To what extent can you craft good questions for your students? (M = 7.95, SD = 0.79) with a verbal interpretation of Extremely Efficient. It also shows that the statement How much can you use a variety of assessment strategies? (M = 7.94, SD = 0.83) with a verbal interpretation of Extremely Efficient. It also shows in the statement To what extent can you provide an alternative explanation or example when students are confused? (M = 8.03, SD = 0.78) with a verbal interpretation of Extremely Efficient. It shows in the statement How well can you implement alternative strategies in your classroom? (M = 8.00, SD = 0.84) with a verbal interpretation of Extremely Efficient.

It can be observed that the Level of Efficacy of Mathematics Teachers in terms of Instructional Strategies is 7.98 with Extremely Efficient as verbal interpretation. This has indicated positive results in the effectivity of the teacher. Additionally, it means that the teachers can do and use variety of instructional strategies for effective learning experiences. This supports the notion of Hood (2020) which highlighted that a self-efficacious teacher foster student growth in deeper learning, welcome student error and willingly experiment with new teaching strategies. Similarly, the study if Mireles-Rios et al. (2019) mentioned the benefits of feedback when it comes to the discussion of instructional strategies, especially when concrete suggestions were successfully applied and built into practice. This is better illustrated from one of the theories where the present study is anchored, Teacher Efficacy with three dimensions. It can therefore be implied that the efficacy in instructional strategies has a direct effect to improving teacher efficacy.

Table 17. Level of Efficacy of Mathematics Teachers in terms of Classroom Management

Statement	Mean (x)	Standard Deviation	Verbal Interpretation

How much can you do to control disruptive behavior in the classroom?	7.95	0.83	Extremely Efficient
How much can you do to get children to follow classroom rules?	8.04	0.95	Extremely Efficient
How much can you do to calm a student who is disruptive or noisy?	8.00	0.87	Extremely Efficient
How well can you establish a classroom management system with each group of students?	8.04	0.87	Extremely Efficient

Overall mean = 8.01
Standard Deviation = 0.81
Verbal Interpretation = Extremely Efficient

Point	Weighted Mean	Verbal Interpretation
8-9	7.41-9.00	Extremely Efficient
6-7	5.81-7.40	Very Efficient
4-5	4.21-5.80	Moderately Efficient
2-3	2.61-4.20	Slightly Efficient
1	1.00-2.60	Not At All Efficient

Table 17 presents the Level of Efficacy of Mathematics Teachers in terms of Classroom Management. The table shows that the statement How much can you do to control disruptive behavior in the classroom? (M = 7.95, SD = 0.83) with a verbal interpretation of Extremely Efficient. It also shows that the statement How much can you do to get children to follow classroom rules? (M = 8.04, SD = 0.95) with a verbal interpretation of Extremely Efficient. It also shows in the statement How much can you do to calm a student who is disruptive or noisy? (M = 8.00, SD = 0.87) with a verbal interpretation of Extremely Efficient. It shows in the statement How well can you establish a classroom management system with each group of students? (M = 8.04, SD = 0.87) with a verbal interpretation of Extremely Efficient.

It is shown that the Level of Efficacy of Mathematics Teachers in terms of Classroom Management is 8.01 with Extremely Efficient as verbal interpretation. This further indicate that the teachers can establish appropriate classroom management that controls students in a way that they are able to grasp the learning opportunities more effectively.

This supports the findings in the study of Mireles-Rios et al. (2019) which determined the beneficial results of having feedback for effective classroom management. It is noteworthy to note that the result has indicated the highest mean score among the three scales which imply that the teachers in the study have perceived the significance of classroom management for teacher efficacy, which is illustrated from teacher efficacy with three dimensions.

Relationship Between the Readiness and of Efficacy of Mathematics Teachers

The relationship between the readiness and efficacy of Mathematics Teachers was determined in terms of the five major factors of readiness and the three subscales of efficacy, which indicates the computed Pearson r correlation.

Table 18. Significant Relationship between the Readiness of Mathematics Teachers in terms of Foundations and Efficacy

Readiness Foundations	Efficacy	r	Degree of Correlation	p
Technical Literacy	Student Engagement	0.428**	Moderate	0.000
	Instructional Strategies	0.474**	Moderate	0.000
	Classroom Management	0.487**	Moderate	0.000
Digital Citizenship	Student Engagement	0.447**	Moderate	0.000
	Instructional Strategies	0.543**	Moderate	0.000
	Classroom Management	0.550**	Moderate	0.000
Dispositions	Student Engagement	0.464**	Moderate	0.000
	Instructional Strategies	0.446**	Moderate	0.000
	Classroom Management	0.526**	Moderate	0.000

**Correlation is significant at the 0.01 level (2-tailed).

Table 18 presents the Relationship between the Readiness of Mathematics Teachers in terms of Foundations (Technical Literacy, Digital Citizenship and Dispositions) and efficacy in terms of Student Engagement, Instructional Strategies and Classroom Management. At 0.01 level of significance ($p < 0.01$), it showed that Technical Literacy has a moderate relationship with student engagement (r = 0.428), instructional strategies (r =0.474) and classroom management (r = 0.478); Digital Citizenship has a moderate relationship with student engagement (r = 0.447), instructional strategies (r = 0.543) and classroom management (r = 0.550); and Dispositions has a moderate relationship with student engagement (r = 0.464), instructional strategies (r = 0.446) and classroom management (r = 0.526). This implied that the there is a moderate level of significant relationship between the levels of readiness with regards to foundations and efficacy of Mathematics teachers. This means that readiness directly affects the efficacy.

To support the result, Ventayen et al. (2019) have determined readiness and practices of Philippine teachers for Open and Distance education in which technological knowledge and skills is one of the key components. The result supported the statement of Graham et al. (2019) which highlights the importance of foundations to achieve better and greater comfort level when implementing blended learning. In addition to this, it can be observed based on the results, though they all resulted to a moderate degree of relationship, that the subscale for teacher efficacy, classroom management, have yielded the highest score when the relationship among them are being tested with the teacher readiness with regards to foundations and to more specific, technical literacy, digital citizenship and dispositions. This implied that the teachers have perceived classroom management to be the most evident indication of readiness and efficacy for blended learning with regards to foundations.

Table 19. Significant Relationship between the Readiness of Mathematics Teachers in terms of Planning and Efficacy

Readiness Planning	Efficacy	r	Degree of Correlation	p
Planning Blended Activities	Student Engagement	0.480**	Moderate	0.000
	Instructional Strategies	0.520**	Moderate	0.000
	Classroom Management	0.538**	Moderate	0.000
Planning Blended Assessments	Student Engagement	0.434**	Moderate	0.000
	Instructional Strategies	0.464**	Moderate	0.000
	Classroom Management	0.468**	Moderate	0.000

**Correlation is significant at the 0.01 level (2-tailed).

Table 19 presents the relationship between the Readiness of Mathematics Teachers in terms of Planning (Planning Blended Activities and Planning Blended Assessments) and Efficacy (Student Engagement, Instructional Strategies and Classroom Management). At 0.01 level of significance ($p < 0.01$), it revealed that Planning Blended Activities has a moderate relationship with student engagement ($r = 0.480$), instructional strategies ($r = 0.520$) and classroom management ($r = 0.538$); and Planning Blended Assessments has a moderate relationship with student engagement ($r = 0.434$), instructional strategies ($r = 0.464$) and classroom management ($r = 0.468$). This implied that the there is a moderate level of significant relationship between the levels of teachers' readiness with regards to planning and teachers' efficacy. Also, it is notable to see that the results have shown the degree of significant relationship which indicates that there is a direct effect in teachers' readiness with regards to planning and teachers' efficacy. The quality of planning reflects the efficacy of the teachers in the learning environment.

This is in accordance to Eytan (2016), where he categorizes the teacher as the one who plans and implement the lesson, program or course which means that there is a need for teachers to learn and work new methods of providing activities and constructing assessment tools that are both responsive to the changes in education, especially to blended learning environment. In addition to this, in order to increase the effectiveness of students' learning processes, motivation, and engagement, teachers must employ well-designed blended learning activities (Bahri et al., 2021). Because they demonstrate a high degree of preparation when it comes to developing blended activities, high school teachers in the Philippines are taking a positive move.

Table 20. Significant Relationship between the Readiness of Mathematics Teachers in terms of Instructional Methods and Strategies and Efficacy

Readiness Instructional Methods and Strategies	Efficacy	r	Degree of Correlation	p
Personalized Instruction	Student Engagement	0.465**	Moderate	0.000
	Instructional Strategies	0.440**	Moderate	0.000
	Classroom Management	0.495**	Moderate	0.000
Facilitating Student-Student Interaction	Student Engagement	0.431**	Moderate	0.000
	Instructional Strategies	0.423**	Moderate	0.000
	Classroom Management	0.540**	Moderate	0.000
Facilitating Student-Teacher Interaction	Student Engagement	0.464**	Moderate	0.000
	Instructional Strategies	0.459**	Moderate	0.000

	Classroom Management	0.505**	Moderate	0.000
Facilitating Student-Content Interactions	Student Engagement	0.419**	Moderate	0.000
	Instructional Strategies	0.482**	Moderate	0.000
	Classroom Management	0.505**	Moderate	0.000

**Correlation is significant at the 0.01 level (2-tailed).

Table 20 presents the relationship between the readiness of Mathematics teachers in terms of Instructional Methods and Strategies (Personalized Instruction, Facilitating Student-Student Interaction, Facilitating Student-Teacher Interaction, Facilitating Student-Content Interactions) and efficacy (Student Engagement, Instructional Strategies and Classroom Management). At 0.01 level of significance ($p < 0.01$), it revealed that Personalized Instruction has a moderate relationship with student engagement ($r = 0.465$), instructional strategies ($r = 0.440$) and classroom management ($r = 0.495$); Facilitating Student-Student Interaction has a moderate relationship with student engagement ($r = 0.431$), instructional strategies ($r = 0.423$) and classroom management ($r = 0.540$); Facilitating Student-Teacher Interaction has a moderate relationship with student engagement ($r = 0.464$), instructional strategies ($r = 0.459$) and classroom management ($r = 0.505$); and Facilitating Student-Content Interactions has a moderate relationship with student engagement ($r = 0.419$), instructional strategies ($r = 0.482$) and classroom management ($r = 0.505$). This implied that the there is a moderate level of significant relationship between the levels of teachers' readiness with regards to Instructional Methods and Strategies and teachers' efficacy.

The result has shown a direct moderate relationship between the two variables and has set clear indication that the way instructional methods and strategies are employed affects the efficacy of teachers in blended learning environment. This enhances the social presence shown in Community of Inquiry (Fiock, 2020) which shows the interconnectedness of the components of the learning environment.

Table 21. Significant Relationship between the Readiness of Mathematics Teachers in terms of Evaluation and Assessment and Efficacy

Readiness Evaluation and Assessment	Efficacy	r	Degree of Correlation	p
Implementing Blended Assessments	Student Engagement	0.426**	Moderate	0.000
	Instructional Strategies	0.471**	Moderate	0.000
	Classroom Management	0.525**	Moderate	0.000
Evaluating and Reflecting	Student Engagement	0.470**	Moderate	0.000
	Instructional Strategies	0.489**	Moderate	0.000
	Classroom Management	0.546**	Moderate	0.000

**Correlation is significant at the 0.01 level (2-tailed).

Table 21 presents the relationship between Readiness of Mathematics Teachers in terms of Evaluation and Assessment (Implementing Blended Assessments and Evaluating and Reflecting) and efficacy (Student Engagement, Instructional Strategies and Classroom Management). At 0.01 level of significance ($p < 0.01$), it revealed that Implementing Blended Assessments has a moderate relationship with student engagement ($r = 0.426$), instructional strategies ($r = 0.471$) and classroom management ($r = 0.525$); and Evaluating and Reflecting has a moderate relationship with student engagement ($r = 0.470$), instructional strategies ($r = 0.489$) and classroom management ($r = 0.546$). This implied that the there is a moderate level of significant relationship between the levels of teachers' readiness with regards to evaluation and assessment and teachers' efficacy. This indicates that the evaluation and assessment has a direct effect on their efficacy level.

The result supports the claims of De Vera et al. (2021) and the notion of Evaluation in Khan's Octagonal Framework which states the importance of effectiveness, fairness and validity of evaluation and efficacy of teachers in implementing the assessment processes.

Table 22. Significant Relationship between the Readiness of Mathematics Teachers in terms of Management and Efficacy

Readiness Management	Efficacy	r	Degree of Correlation	p
Managing Blended Environments	Student Engagement	0.514**	Moderate	0.000

	Instructional Strategies	0.537**	Moderate	0.000
	Classroom Management	0.565**	Moderate	0.000
Managing Blended Routines	Student Engagement	0.513**	Moderate	0.000
	Instructional Strategies	0.512**	Moderate	0.000
	Classroom Management	0.529**	Moderate	0.000

**Correlation is significant at the 0.01 level (2-tailed).

Table 22 presents the relationship between Readiness of Mathematics Teachers in terms of Management (Managing Blended Environments and Managing Blended Routines) and Efficacy (Student Engagement, Instructional Strategies and Classroom Management). At 0.01 level of significance ($p < 0.01$), it revealed that Managing Blended Environments has a moderate relationship with student engagement ($r = 0.514$), instructional strategies ($r = 0.537$) and classroom management ($r = 0.565$); and Managing Blended Routines has a moderate relationship with student engagement ($r = 0.513$), instructional strategies ($r = 0.512$) and classroom management ($r = 0.529$). This implied that the there is a moderate level of significant relationship between the readiness of Mathematics teachers in terms of Management and efficacy. Further, it shows that the implication of managing blended learning directly affects the efficacy level of teachers. Thus, the process of managing the environment and routines in the blended learning must be taken in careful consideration to ensure achievement of effective learning.

According to Abbacan-Tuguic (2021), professional teachers tend to process the ability of managing activities both in the online and offline learning environment. One of the essential part of this process is having the readiness of preparing and testing the use of technology and getting accustomed with the kind of environment. As illustrated in the Khan's Octagonal Framework, Management is considered to be one key components for the effectivity of blended learning. With that and the results shown, it can be implied that the higher the management skills the teachers have, the higher efficacy they can also have.

Summary of Findings

The aim of this study is to determine the levels and significant relationship between the readiness and efficacy of Mathematics teachers on blended learning in the new normal.

Specifically, it ought to answer the following questions: 1. What is the level of readiness of Mathematics teachers on blended teaching in the new normal in terms of foundations, planning, instructional methods and strategies, evaluation and assessment, and management? 2. What is the level of efficacy of Mathematics teachers on blended teaching in the new normal in terms of: student engagement; instructional strategies; and classroom management? 3. Is there a significant relationship between the readiness and efficacy of Mathematics teachers on blended teaching in the new normal?

The study revealed that the readiness of Mathematics teachers on blended learning in terms of foundations, planning, instructional methods and strategies, evaluation and assessment, and management was verbally interpreted as "High Level of Readiness." On the other hand, the efficacy of Mathematics teachers in terms of classroom management, instructional strategies, and student engagement has resulted to a verbal interpretation of "Extremely Efficient". Further, the statistical analysis of data made resulted to moderate relationship between the readiness of Mathematics teachers and efficacy.

In conclusion, the study evaluating the effectiveness and preparation of secondary mathematics teachers has produced encouraging data. The study's conclusions will have a big impact on teachers' careers because they will inspire more of them to actively participate in training programs that involve knowledge improvement and technological development. Along with this, administrators are now aware of the variables to take into account while conducting evaluations, trainings, and interventions.

Conclusion

Based from the findings of the study, the researcher came to the conclusion that the secondary Mathematics teachers were highly ready for blended teaching and they were extremely efficient in their teaching roles. Therefore, the hypothesis stating that there is no significant relationship between the readiness and efficacy of secondary Mathematics teachers for blended learning was rejected. Thus, the level of readiness affects the level of efficacy of the teachers.

Recommendations

Based on the findings and conclusions of the study, the following recommendations were hereby given as follows:

1. Curriculum planners and developers should carefully consider the evidences gathered in the study in their preparation towards an efficient and effective progression of blended learning modality.
2. School heads should realize that the results in this study may help them in giving guidance for professional development and in providing assistance and training to teachers.
3. Teachers under this study can enhance their knowledge about themselves with regards to their levels on readiness and efficacy, and they can also model and promote positive attitudes towards blended learning among their peers.
4. Other stakeholders of education, such as students, parents and other members of the community, may consider the results of the study as a supporting evidence that ensures the quality of education implemented in blended learning modality.
5. The future researchers may use this research as their reference and may conduct a further study focusing on other subject specializations.

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