Proficiency in Modular Teaching in Mathematics in the New Normal

Khrisna Mae A. Sotea
Bahi-an Elementary School, Bayawan City, Negros Oriental, Philippines
https://orcid.org/0009-0007-8616-7256

Dr. Mario A. Dejito
Education Program Supervisor, DepEd Canlaon City, Philippines
https://orcid.org/0009-0008-0028-2171

Dr. Renante A. Juanillo
Education Program Supervisor, DepEd Canlaon City, Philippines
https://orcid.org/0009-0003-7086-5886

Abstract:

The study aimed to assess the proficiency in modular teaching in mathematics during the new normal at District 10, Division of Bayawan, School Year 2020-2021, for in-service training. Employing a descriptive research design, the study effectively described proficiency levels across Modular Instructional Delivery, Handling Feedback, and Assessment. Data analysis utilized descriptive and comparative analytical schemes, employing frequency, percentage, mean, and Mann-Whitney U test. Respondents' profile revealed an equal distribution by age, with a majority married and holding bachelor's degrees, and a significant proportion with fewer years in teaching. Overall, a very high level of proficiency was observed in modular teaching, consistent across instructional delivery, feedback handling, and learner assessment. Comparative analyses across demographic variables showed no statistically significant differences in proficiency levels.

Keywords: Modular teaching, Mathematics education, Proficiency assessment, New normal education, Descriptive research, Comparative analysis, Mann-Whitney U test, In-service training, Educational assessment, Teacher proficiency

Introduction:

Nature of the Problem

The COVID-19 pandemic has drastically altered traditional educational methods, necessitating a shift to various forms of distance learning to ensure the continuity of education. Among these, modular learning has emerged as the most prevalent in the Philippines. The Department of Education (DepEd) reported that learning through printed and digital modules is the most preferred distance learning method for parents of children enrolled in the current academic year (Bernard, 2020). This method is particularly crucial for learners in rural areas where internet access is limited. However, the effectiveness of this method relies heavily on the proficiency of teachers in delivering modular instruction and managing the associated challenges.

Current State of Knowledge

Modular learning empowers students to engage in self-directed study, developing a sense of responsibility and independence. Studies highlight several advantages of modular instruction, such as enhanced self-pacing, increased variety and flexibility, and the potential for better self-study skills among students (Nardo, 2017). Moreover, parents play a significant role as home facilitators, aiding their children in navigating the modules and establishing a connection with teachers (FlipScience, 2020). However, despite these benefits, teachers face numerous challenges in implementing modular teaching effectively, particularly in subjects like mathematics, where conceptual understanding and problem-solving skills are critical.

The proficiency of teachers in modular teaching is influenced by various factors, including their basic teaching skills, curriculum knowledge, and attitudes toward teaching. Teachers' competence significantly affects students' academic performance, especially in mathematics, where developing a positive mathematical identity is crucial for student success (Darkis, 2020). Observations in the District 10, Division of Bayawan, have shown that despite efforts to implement modular teaching in mathematics, teachers struggle with various challenges, highlighting the need for targeted in-service training to enhance their proficiency.

Theoretical Underpinnings

The study is grounded in the Theory of Proficiency by Harsch (2017), which posits that proficiency encompasses both the ability to use the language ('knowing how') and the knowledge of the language ('knowing what'). This concept is applicable to teaching proficiency, where effective teaching involves not only the knowledge of content but also the ability to deliver it effectively and adaptively. The theory emphasizes the importance of communicative capacities, knowledge systems, and skills, all of which are essential for teachers to successfully implement modular teaching.

Objectives

The study aimed to determine the level of proficiency in modular teaching in mathematics in the new normal at District 10, Division of Bayawan during the School Year 2020-2021 as basis for an in-service training. Furthermore, this study seeks to answer the following specific questions: 1. What is the profile of the respondents in terms of the following variables? a. Age, b. Civil Status c. Highest Educational Attainment, and d. Number of years in teaching mathematics 2.What is the level of proficiency in modular teaching in mathematics in the new normal in the following areas? a. Modular Instructional delivery, b. Handling Feedbacks, and c. Assessments of learning. 3. What is the level of proficiency in modular teaching in mathematics in the new normal when grouped according to aforementioned variables? 4. Is there a significant difference in the level of proficiency in modular teaching in mathematics in the new normal when grouped and compared according to aforementioned variables? 5. Based the results of the study, what in-service training plan can be formulated?

Methodology:

The study's methodology-related components, such as the research design, respondents, procedure, data collection, data analysis and statistical treatment, and ethical consideration, are described in this part.

Research Design

This study employs a descriptive research design to explore the proficiency in modular teaching in Mathematics among teachers at Bayawan City District 10, Division of Bayawan, during the School Year 2020-2021. Descriptive research aims to identify and describe characteristics within the field of investigation, aligning with the study's objectives to assess teaching competence.

Respondents

The study involves 30 Mathematics teachers from District 10, Bayawan City Division, Negros Oriental, selected through total enumeration due to the manageable sample size.

Data Collection

Data is collected using a self-made questionnaire divided into two parts. Part 1 gathers demographic information, while Part 2 assesses proficiency in modular teaching with 30 items rated on a five-point Likert scale.

Data Analysis and Statistical Treatment

In the data analysis, various analytical schemes and statistical tools are employed based on the study's objectives.

Objective No. 1 utilizes frequency counts and percentages to establish the demographic profile of respondents, including age, civil status, highest educational attainment, and years of teaching experience in mathematics.

Objective No. 2 employs mean to assess proficiency levels in modular teaching across instructional delivery, feedback handling, and assessments, interpreting scores into categories ranging from Very High Level to Very Low Level.

Objective No. 3 applies mean analysis to determine proficiency levels in modular mathematics teaching across different demographic groups. Finally,

Objective No. 4 employs the Mann-Whitney U test to ascertain significant differences in modular teaching proficiency among these groups, with decisions based on a p-value threshold of 0.05.

Ethical Considerations

The study adheres to ethical standards including voluntary participation, informed consent, confidentiality, and anonymity to ensure participant welfare and data integrity.

Results and Discussion

Profile of the Respondents according to Age, Civil Status, Highest Educational Attainment, and Number of Years in Teaching

Table 2
Profile of Respondents

Variables	Categories	Frequency	Percentage
Age	Younger (below 33 years old)	15	50.00
	Older (33 years old and above)	15	50.00
	Total	**30**	**100**
Civil Status	Single	10	33.3
	Married	20	66.7
	Total	**30**	**100**
Highest Educational Attainment	Lower (Bachelors)	19	63.3
	Higher (Masters)	11	36.7
	Total	**30**	**100**
Number of Years in Teaching	Lower (less than 6 years)	19	63.30
	Higher (6 years and more)	11	36.70
	Total	**30**	**100**

Table 2 provides a demographic overview of the study's respondents: 50% were younger (33 years old or below), and 50% were older (33 years old and above). Regarding civil status, 33% were single, and 67% were married. In terms of educational attainment, 63.3% held bachelor's degrees, while 36.7% held master's degrees. Regarding teaching experience, 63.3% had fewer than six years of experience, and 36.7% had more than six years. Overall, the study found an equal distribution of younger and older respondents, a majority of married participants, a dominance of bachelor's degree holders, and a higher representation of teachers with fewer years of experience.

Level of Proficiency in Modular Teaching in Mathematics in the New Normal based on Modular Instructional Delivery, Handling Feedback, and Assessment

Table 3
Proficiency in Modular Teaching in Mathematics on Modular Instructional Delivery

Items	Mean	Interpretation
As a Math Teacher, I ...		
1. Make simple and understandable mathematics lessons	4.70	Very High Level
2. Provide key words for easy reference/understanding	4.70	Very High Level
3. Introduce new concepts in mathematics	4.60	Very High Level
4. Assist my learners in discovering new ideas	4.57	Very High Level
5. Create a system-based instruction	4.90	Very High Level
6. See to it that math modules are relevant	4.70	Very High Level
7. Check lessons based on MELC listing	4.80	Very High Level
8. Arouse their knowledge through simple questioning	4.67	Very High Level
9. Allow my learners to ask questions as a feedback mechanism	4.67	Very High Level
10. Introduce fresh ideas based on their individual background	4.57	Very High Level
Over-all Mean	**4.79**	**Very High Level**

Item no. 5, which states, "create a systems-based instruction," received the highest score of 4.90, while the lowest mean score was 4.57, also interpreted as a very high level, for items 4 and 10, which state, "Assist my learners in discovering new ideas" and "Introduce fresh ideas based on their individual background." The uniformity in the high scores, all interpreted as very high, suggests an impressively high level of proficiency among subject teacher-respondents, presumably acquired through diligent training and practice. This finding is supported by Naumovski et al. (2016), who stated that the Department of Education should organize regular interactive sessions for principals and teachers to exchange and discover new ideas, enhancing their collaborative decision-making on students' affairs.

Table 4
Proficiency in Modular Teaching in Mathematics on Feedbacking

Items	Mean	Interpretation
As a Math Teacher, I ...		
1. Revisit feedback for clear understanding	4.70	Very High Level
2. Clarify feedbacks	4.63	Very High Level
3. Open new concepts on how feedback can be understood	4.50	Very High Level
4. Appreciate feedback as a means of positive growth	4.57	Very High Level

5. Learn how to recognize feedback for improvement	4.60	Very High Level
6. Encourage learners to give feedback	4.60	Very High Level
7. See to it that feedback are responded to	4.63	Very High Level
8. Manifest my interest on learners feedback	4.57	Very High Level
9. Demonstrate a positive attitude on any feedback	4.60	Very High Level
10. Consider feedback as an extension of lesson learned	4.70	Very High Level
Over-all Mean	**4.61**	**Very High Level**

At this point, Table 4 illustrates an overall mean score of 4.61, indicating a very high level of proficiency among mathematics teachers, particularly in their feedback tasks. Items 1 and 10 obtained the highest identical mean score of 4.70, a towering mean on a scale of 5, revealing the strongest asset of mathematics teachers in providing feedback that ensures students' clear understanding and extends lessons learned. The operative word in this section is feedbacking, the starting point for further improvement in the teaching and learning of mathematics. The disparity, if any, between and among the results shown is minimal since all scores were uniformly interpreted as very high level. of teaching proficiency in mathematics.

Table 5
Proficiency in Modular Teaching in Mathematics on Assessment

Items	Mean	Interpretation
As a Math Teacher, I ...		
1. provide simple module materials containing basic math test	4.63	Very High Level
2. Increase their knowledge by returning their assessment results	4.57	Very High Level
3. Give relevant interpretation for their understanding	4.57	Very High Level
4. Evaluate assessment through basic concept in Math	4.73	Very High Level
5. Review math concepts in the assessment	4.77	Very High Level
6. Profile my learners assessment results	4.63	Very High Level
7. Make sure that all activities and assessment are update	4.67	Very High Level
8. Manifest a sense of responsibility over my learner's result	4.70	Very High Level
9. Develop a simple Math problem for the learners	4.77	Very High Level
10. Reinforce assessment through reviewed of the lessons	4.70	Very High Level
Over-all Mean	**4.67**	**Very High Level**

Table 5 shows an overall mean score of 4.67, indicating a very high level of proficiency in modular teaching in mathematics in the new normal, particularly in assessment tasks. Items 5 and 9 obtained the highest identical mean score of 4.77, another towering mean on a scale of 5, demonstrating mathematics teachers' adeptness in modular teaching, especially in reviewing mathematics concepts in assessments and developing simple math problems for learners. The disparity, if any, among the results is minimal since all scores were uniformly interpreted as very high levels of proficiency in modular teaching, with an emphasis on learning assessment. This is supported by a study by Papanthymou and Darra (2019) in the Journal of Education and Learning, which suggests the immense potential of self-assessment in enhancing learning motivation among learners.

Level of Proficiency in Modular Teaching in Mathematics in the New Normal based on Modular Instructional Delivery, Feedbacking, and Assessment and Groupings by Age, Civil Status, Educational Attainment, and Number of Years in Teaching

Table 6
Proficiency in Modular Teaching in Mathematics based on Modular Instructional Delivery and Groupings by Age

Items	Younger		Older	
As a Math Teacher, I ...	Mean	Interpretation	Mean	Interpretation
1. Make simple and understandable mathematics lessons	4.73	Very High Level	4.67	Very High Level
2. Provide key words for easy reference/understanding	4.73	Very High Level	4.67	Very High Level
3. Introduce new concepts in mathematics	4.67	Very High Level	4.53	Very High Level
4. Assist my learners in discovering new ideas	4.60	Very High Level	4.53	Very High Level
5. Create a system-based instruction	4.60	Very High Level	7.20	Very High Level
6. See to it that math modules are relevant	4.73	Very High Level	4.67	Very High Level
7. Check lessons based on MELC listing	4.80	Very High Level	4.80	Very High Level
8. Arouse their knowledge through simple questioning	4.73	Very High Level	4.60	Very High Level
9. Allow my learners to ask questions as a feedback mechanism	4.73	Very High Level	4.60	Very High Level

**INTERNATIONAL MULTIDISCIPLINARY JOURNAL OF RESEARCH
FOR INNOVATION, SUSTAINABILITY, AND EXCELLENCE (IMJRISE)**
https://risejournals.org/index.php/imjrise
Volume 1, Issue no. 6 (2024)
ISSN: 3028-032X (online) | ISSN: 3028-0370 (print)

1095

10. Introduce fresh ideas based on their individual background	4.60	Very High Level	4.53	Very High Level
Over-all Mean	**4.69**	**Very High Level**	**4.88**	**Very High Level**

Table 6 illustrates the level of proficiency in modular teaching in mathematics in the new normal, based on modular instructional delivery and groupings by age. The sub-mean scores were 4.69 for younger teachers and 4.88 for their older counterparts, both interpreted as a very high level of teaching proficiency. Further analysis revealed that both younger and older groups obtained the highest identical scores of 4.80 in item no. 7, which addresses the need to check lessons based on the MELC listing. The minimal disparity between the results, uniformly interpreted as very high, indicates a consistent level of modular teaching proficiency in mathematics. Older teachers, or seasoned teachers, lead with a sub-mean of 4.88, closely followed by their younger counterparts with a sub-mean of 4.69. These scores highlight the high level of skills in modular teaching in mathematics across different age groups.

Table 7
Proficiency in Modular Teaching in Mathematics based on Handling Feedbacks and Groupings by Age

Items	Younger		Older	
As a Math Teacher, I …	**Mean**	**Interpretation**	**Mean**	**Interpretation**
1. Revisit feedback for clear understanding	4.67	Very High Level	4.73	Very High Level
2. Clarify feedbacks	4.67	Very High Level	4.60	Very High Level
3. Open new concepts on how feedback can be understood	4.47	High Level	4.53	Very High Level
4. Appreciate feedback as a means of positive growth	4.47	High Level	4.67	Very High Level
5. Learn how to recognize feedback for improvement	4.60	Very High Level	4.60	Very High Level
6. Encourage learners to give feedback	4.60	Very High Level	4.60	Very High Level
7. See to it that feedback are responded to	4.60	Very High Level	4.67	Very High Level
8. Manifest my interest on learners feedback	4.33	High Level	4.80	Very High Level
9. Demonstrate a positive attitude on any feedback	4.53	Very High Level	4.67	Very High Level
10. Consider feedback as an extension of lesson learned	4.60	Very High Level	4.80	Very High Level
Over-all Mean	**4.55**	**Very High Level**	**4.67**	**Very High Level**

Table 7 illustrates the level of proficiency in modular teaching in mathematics in the new normal, based on feedback and age groupings, with younger teachers scoring a sub-mean of 4.55 and older (seasoned) teachers scoring 4.67, both interpreted as a very high level of teaching proficiency. The younger group scored highest at 4.67 in items 1 and 2, which deal with revisiting and clarifying feedback, while the seasoned group scored highest at 4.80 in item 10, emphasizing the importance of considering feedback as an extension of lessons learned. The minimal disparity among results indicates consistent proficiency in modular teaching in mathematics, particularly in feedback. Older teachers lead with a sub-mean of 4.67, closely followed by their younger counterparts at 4.55, underscoring the high level of skills in modular teaching across age groups.

Table 8
Proficiency in Modular Teaching in Mathematics based on Assessment and Groupings by Age

Items	Younger		Older	
As a Math Teacher, I …	**Mean**	**Interpretation**	**Mean**	**Interpretation**
1. provide simple module materials containing basic math test	4.47	High Level	4.80	Very High Level
2. Increase their knowledge by returning their assessment results	4.47	High Level	4.67	Very High Level
3. Give relevant interpretation for their understanding	4.47	High Level	4.67	Very High Level
4. Evaluate assessment through basic concept in Math	4.60	Very High Level	4.87	Very High Level
5. Review math concepts in the assessment	4.80	Very High Level	4.73	Very High Level
6. Profile my learners assessment results	4.60	Very High Level	4.67	Very High Level
7. Make sure that all activities and assessment are update	4.60	Very High Level	4.73	Very High Level
8. Manifest a sense of responsibility over my learner's result	4.60	Very High Level	4.80	Very High Level
9. Develop a simple Math problem for the	4.73	Very High Level	4.80	Very High Level

learners				
10. Reinforce assessment through reviewed of the lessons	4.67	Very High Level	4.73	Very High Level
Over-all Mean	**4.60**	**Very High Level**	**4.75**	**Very High Level**

Table 8 demonstrates the level of proficiency in modular teaching in mathematics in the new normal, focusing on assessment and age groupings, with younger teachers scoring a sub-mean of 4.60 and older (seasoned) teachers scoring 4.75, both interpreted as a very high level of modular teaching proficiency. Among the younger group, the highest score of 4.80 was achieved in item 5, emphasizing the review of math concepts in assessments, while the seasoned group scored highest at 4.87 in item 4, which highlights evaluating assessments through fundamental math concepts. Conversely, the younger group scored lowest at 4.47 in items 1, 2, and 3, which discuss providing module materials, returning assessment results to increase learners' knowledge, and interpreting results for learner understanding. Similarly, seasoned teachers scored lowest at 4.67 in items 2, 3, and 6, focusing on returning assessment results, interpreting lessons, and profiling learner results. These findings suggest a reliance on traditional assessment methods among teachers, reflecting findings from Nabie, Akayuure & Sofo (2013) that many teachers favor traditional over alternative assessment techniques in their teaching practices.

Table 9
Proficiency in Modular Teaching in Mathematics based on Modular Instructional Delivery and Groupings by Civil Status

Items	Single		Married	
As a Math Teacher, I ...	**Mean**	**Interpretation**	**Mean**	**Interpretation**
1. Make simple and understandable mathematics lessons	4.80	Very High Level	4.65	Very High Level
2. Provide key words for easy reference/understanding	4.80	Very High Level	4.65	Very High Level
3. Introduce new concepts in mathematics	4.70	Very High Level	4.55	Very High Level
4. Assist my learners in discovering new ideas	4.60	Very High Level	4.55	Very High Level
5. Create a system-based instruction	4.60	Very High Level	6.55	Very High Level
6. See to it that math modules are relevant	4.80	Very High Level	4.65	Very High Level
7. Check lessons based on MELC listing	4.90	Very High Level	4.75	Very High Level
8. Arouse their knowledge through simple questioning	4.80	Very High Level	4.60	Very High Level
9. Allow my learners to ask questions as a feedback mechanism	4.70	Very High Level	4.65	Very High Level
10. Introduce fresh ideas based on their individual background	4.60	Very High Level	4.55	Very High Level
Over-all Mean	**4.73**	**Very High Level**	**4.82**	**Very High Level**

Table 9 outlines the proficiency in modular teaching in mathematics in the new normal, categorized by modular instructional delivery and civil status. The sub-mean scores are 4.73 for the unmarried group and 4.82 for the married group, both indicating a very high level of proficiency. Both groups scored highest at 4.90 in item 7, focusing on checking lessons based on the MELC listing. However, the younger group scored lowest at 4.60 in item 10, concerning the introduction of fresh ideas based on individual backgrounds. In contrast, the married group scored lowest at 4.55 in items 3, 4, and 5, related to introducing new concepts, assisting learners in discovering ideas, and implementing systems-based instruction. While these scores reflect high proficiency levels, they also highlight areas for potential improvement in teaching strategies.

Table 10
Proficiency in Modular Teaching in Mathematics based on Handling Feedbacks and Groupings by Civil Status

Items	Single		Married	
As a Math Teacher, I ...	**Mean**	**Interpretation**	**Mean**	**Interpretation**
1. Revisit feedback for clear understanding	4.70	Very High Level	4.70	Very High Level
2. Clarify feedbacks	4.70	Very High Level	4.60	Very High Level
3. Open new concepts on how feedback can be understood	4.50	Very High Level	4.50	Very High Level
4. Appreciate feedback as a means of positive growth	4.40	High Level	4.65	Very High Level
5. Learn how to recognize feedback for improvement	4.50	Very High Level	4.65	Very High Level
6. Encourage learners to give feedback	4.50	Very High Level	4.65	Very High Level
7. See to it that feedback are responded to	4.50	Very High Level	4.70	Very High Level
8. Manifest my interest on learners feedback	4.30	High Level	4.70	Very High Level

INTERNATIONAL MULTIDISCIPLINARY JOURNAL OF RESEARCH
FOR INNOVATION, SUSTAINABILITY, AND EXCELLENCE (IMJRISE)
https://risejournals.org/index.php/imjrise
Volume 1, Issue no. 6 (2024)
ISSN: 3028-032X (online) | ISSN: 3028-0370 (print)

1097

9. Demonstrate a positive attitude on any feedback	4.50	Very High Level	4.65	Very High Level
10. Consider feedback as an extension of lesson learned	4.50	Very High Level	4.80	Very High Level
Over-all Mean	**4.51**	**Very High Level**	**4.66**	**Very High Level**

Table 10 summarizes the analysis of proficiency in modular teaching in mathematics in the new normal, focusing on feedback and civil status. The sub-mean scores are 4.51 for the single group and 4.66 for the married group, both interpreted as very high levels of proficiency. The single group scored highest at 4.70 in items 1 and 2, emphasizing the importance of revisiting and clarifying feedback for learners' understanding. Conversely, the married group achieved the highest score of 4.80 in item 10, highlighting the integration of feedback as an extension of lessons learned. The lowest score for the single group was on item 9, regarding teachers' interest in learners' feedback, while the married group scored lowest at 4.50 on item 3, addressing new concepts in understanding feedback. Feedback, as emphasized by Elawar and Corno (1985) in their study on teachers' written feedback, plays a crucial role in enhancing students' mathematics achievement and attitude toward the subject, supporting the findings of this analysis.

Table 11
Proficiency in Modular Teaching in Mathematics based on Assessment and Groupings by Civil Status

Items	Single		Married	
As a Math Teacher, I ...	**Mean**	**Interpretation**	**Mean**	**Interpretation**
1. provide simple module materials containing basic math test	4.50	Very High Level	4.70	Very High Level
2. Increase their knowledge by returning their assessment results	4.50	Very High Level	4.60	Very High Level
3. Give relevant interpretation for their understanding	4.50	Very High Level	4.60	Very High Level
4. Evaluate assessment through basic concept in Math	4.60	Very High Level	4.80	Very High Level
5. Review math concepts in the assessment	4.80	Very High Level	4.75	Very High Level
6. Profile my learners assessment results	4.60	Very High Level	4.65	Very High Level
7. Make sure that all activities and assessment are update	4.70	Very High Level	4.65	Very High Level
8. Manifest a sense of responsibility over my learner's result	4.70	Very High Level	4.70	Very High Level
9. Develop a simple Math problem for the learners	4.80	Very High Level	4.75	Very High Level
10. Reinforce assessment through reviewed of the lessons	4.70	Very High Level	4.70	Very High Level
Over-all Mean	**4.64**	**Very High Level**	**4.69**	**Very High Level**

Table 11 summarizes the proficiency analysis of modular teaching in mathematics in the new normal, focusing on learners' assessment and civil status groupings. The sub-mean scores are 4.64 for the single group and 4.69 for the married group, both interpreted as very high levels of proficiency. The single group scored highest at 4.80 in items 5 and 9, emphasizing the review of math concepts in assessments and creating suitable math problems for learners. Similarly, the married group achieved the highest score of 4.80 in item 4, highlighting the evaluation of assessments through fundamental math concepts. Conversely, the single group scored items 1, 2, and 3 with a mean score of 4.50, focusing on providing module materials, enhancing knowledge through assessment results, and interpreting lessons for learner understanding. For the married group, items 2 and 3 scored lowest at 4.60, addressing similar aspects. These results underscore the importance of addressing specific areas where both groups scored lower in their teaching practices.

Table 12
Level of Proficiency in Modular Teaching in Mathematics in the New Normal based on Modular Instructional Delivery and Groupings by Highest Educational Attainment

Items	Lower		Higher	
As a Math Teacher, I ...	**Mean**	**Interpretation**	**Mean**	**Interpretation**
1. Make simple and understandable mathematics lessons	4.58	Very High Level	4.91	Very High Level
2. Provide key words for easy reference/understanding	4.68	Very High Level	4.73	Very High Level
3. Introduce new concepts in mathematics	4.68	Very High Level	4.45	High Level
4. Assist my learners in discovering new ideas	4.68	Very High Level	4.36	High Level
5. Create a system-based instruction	6.79	Very High Level	4.36	High Level
6. See to it that math modules are relevant	4.63	Very High Level	4.82	Very High Level

**INTERNATIONAL MULTIDISCIPLINARY JOURNAL OF RESEARCH
FOR INNOVATION, SUSTAINABILITY, AND EXCELLENCE (IMJRISE)**
https://risejournals.org/index.php/imjrise
Volume 1, Issue no. 6 (2024)
ISSN: 3028-032X (online) | ISSN: 3028-0370 (print)

1098

Items	Lower		Higher	
7. Check lessons based on MELC listing	4.79	Very High Level	4.82	Very High Level
8. Arouse their knowledge through simple questioning	4.63	Very High Level	4.73	Very High Level
9. Allow my learners to ask questions as a feedback mechanism	4.63	Very High Level	4.73	Very High Level
10. Introduce fresh ideas based on their individual background	4.63	Very High Level	4.45	High Level
Over-all Mean	**4.87**	**Very High Level**	**4.64**	**Very High Level**

Table 12 presents an analysis of proficiency in modular teaching in mathematics in the new normal, categorized by modular instructional delivery and educational attainment. The sub-mean scores were 4.87 for math teachers with lower educational attainment and 4.64 for those with higher educational attainment, both interpreted as very high levels of proficiency. The group with lower educational attainment scored highest at 4.79 in items 5 and 7, emphasizing the creation of systems-based instructions, checking lessons against MELC listings, and simplifying mathematics lessons with keywords for clarity. Conversely, the higher educational attainment group scored highest in item 1, focusing on making mathematics lessons simple and understandable. In contrast, the lower educational attainment group scored lowest at 4.58 in item 1, still interpreted as a very high level, while the higher educational attainment group scored lowest in items 4 and 5 at 4.36, highlighting the need to assist learners in discovering new ideas and implementing systems-based instruction. These results indicate a high level of proficiency in modular teaching across educational attainment levels, with specific areas for improvement identified.

Table 13
Proficiency in Modular Teaching in Mathematics based on Handling Feedbacks and Groupings by Educational Attainment

Items	Lower		Higher	
	Mean	**Interpretation**	**Mean**	**Interpretation**
As a Math Teacher, I …				
1. Revisit feedback for clear understanding	4.68	Very High Level	4.73	Very High Level
2. Clarify feedbacks	4.58	Very High Level	4.73	Very High Level
3. Open new concepts on how feedback can be understood	4.53	Very High Level	4.45	High Level
4. Appreciate feedback as a means of positive growth	4.63	Very High Level	4.45	High Level
5. Learn how to recognize feedback for improvement	4.58	Very High Level	4.64	Very High Level
6. Encourage learners to give feedback	4.53	Very High Level	4.73	Very High Level
7. See to it that feedback are responded to	4.58	Very High Level	4.73	Very High Level
8. Manifest my interest on learners' feedback	4.53	Very High Level	4.64	Very High Level
9. Demonstrate a positive attitude on any feedback	4.47	High Level	4.82	Very High Level
10. Consider feedback as an extension of lesson learned	4.63	Very High Level	4.82	Very High Level
Over-all Mean	**4.57**	**Very High Level**	**4.67**	**Very High Level**

Table 13 analyzes the proficiency in modular teaching in mathematics in the new normal, categorized by feedback and educational attainment. The sub-mean scores were 4.57 for mathematics teachers with lower educational attainment and 4.64 for those with the highest educational attainment, both interpreted as very high levels of proficiency. Teachers with lower educational attainment scored highest at 4.68 in item 1, focusing on revisiting feedback for learner understanding, while those with the highest educational attainment scored highest at 4.82 in items 9 and 10, emphasizing a positive attitude toward feedback and considering it an extension of learning. The lower educational attainment group scored lowest at 4.47 in item 9, regarding demonstrating a positive attitude toward feedback, still interpreted at a high level. Conversely, the highest educational attainment group scored lowest in items 3 and 4 at a mean score interpreted as high level, highlighting the need to introduce new concepts for understanding feedback and appreciate feedback for growth. These findings underscore a consistently high level of proficiency in modular teaching across different educational attainment levels, with specific areas identified for further enhancement.

Table 14
Proficiency in Modular Teaching in Mathematics based on Assessment and Groupings by Highest Educational Attainment

Items	Lower		Higher	
	Mean	**Interpretation**	**Mean**	**Interpretation**
As a Math Teacher, I …				
1. provide simple module materials containing basic math test	4.63	Very High Level	4.64	Very High Level
2. Increase their knowledge by returning their assessment results	4.58	Very High Level	4.55	Very High Level

**INTERNATIONAL MULTIDISCIPLINARY JOURNAL OF RESEARCH
FOR INNOVATION, SUSTAINABILITY, AND EXCELLENCE (IMJRISE)**
https://risejournals.org/index.php/imjrise
Volume 1, Issue no. 6 (2024)
ISSN: 3028-032X (online) | ISSN: 3028-0370 (print)

1099

Items	Mean	Interpretation	Mean	Interpretation
3. Give relevant interpretation for their understanding	4.63	Very High Level	4.45	High Level
4. Evaluate assessment through basic concept in Math	4.68	Very High Level	4.82	Very High Level
5. Review math concepts in the assessment	4.79	Very High Level	4.73	Very High Level
6. Profile my learners assessment results	4.63	Very High Level	4.64	Very High Level
7. Make sure that all activities and assessment are update	4.63	Very High Level	4.73	Very High Level
8. Manifest a sense of responsibility over my learner's result	4.74	Very High Level	4.64	Very High Level
9. Develop a simple Math problem for the learners	4.74	Very High Level	4.82	Very High Level
10. Reinforce assessment through reviewed of the lessons	4.63	Very High Level	4.82	Very High Level
Over-all Mean	**4.67**	**Very High Level**	**4.68**	**Very High Level**

Table 14 summarizes the analysis of proficiency in modular teaching in mathematics in the new normal, categorized by learners' assessment and educational attainment. The sub-mean scores were 4.67 for mathematics teachers with lower educational attainment and 4.68 for those with higher educational attainment, both interpreted as very high levels of proficiency. Teachers with lower educational attainment scored highest at 4.79 in item 5, focusing on reviewing math concepts in assessments, while those with the highest educational attainment scored highest at 4.82 in items 9 and 10, emphasizing the development of simple math problems for learners and reinforcing assessment through lesson review. The lower educational attainment group recorded the lowest score at 4.58 in item 2, regarding increasing knowledge through assessment results, still interpreted at a very high level. Conversely, the highest educational attainment group scored lowest at 4.45 in item 3, highlighting the need to give relevant interpretations using basic math concepts, also interpreted at a high level. These results highlight a high level of proficiency in modular teaching across different educational attainment levels, with specific areas identified for further improvement.

Table 15
Proficiency in Modular Teaching in Mathematics based on Modular Instructional Delivery and Groupings by Number of Years in Teaching

Items	Shorter		Longer	
As a Math Teacher, I …	**Mean**	**Interpretation**	**Mean**	**Interpretation**
1. Make simple and understandable mathematics lessons	4.74	Very High Level	4.64	Very High Level
2. Provide key words for easy reference/understanding	4.74	Very High Level	4.64	Very High Level
3. Introduce new concepts in mathematics	4.68	Very High Level	4.45	High Level
4. Assist my learners in discovering new ideas	4.53	Very High Level	4.64	Very High Level
5. Create a system-based instruction	4.53	Very High Level	8.27	Very High Level
6. See to it that math modules are relevant	4.74	Very High Level	4.64	Very High Level
7. Check lessons based on MELC listing	4.79	Very High Level	4.82	Very High Level
8. Arouse their knowledge through simple questioning	4.74	Very High Level	4.55	Very High Level
9. Allow my learners to ask questions as a feedback mechanism	4.74	Very High Level	4.55	Very High Level
10. Introduce fresh ideas based on their individual background	4.58	Very High Level	4.55	Very High Level
Over-all Mean	**4.68**	**Very High Level**	**4.97**	**Very High Level**

Table 15 summarizes the proficiency analysis of modular teaching in mathematics in the new normal, categorized by modular instructional delivery and years of teaching experience. The sub-mean scores were 4.68 for mathematics teachers with shorter years of teaching and 4.97 for those with longer years, both interpreted as very high levels of proficiency. Both groups scored highest at 4.79 in item 7, emphasizing the importance of checking lessons against the MELC listing. However, the shorter years group scored lowest at 4.53 in items 4 and 5, also interpreted at a very high level, while the longer years group scored lowest at 4.27 in item 5, similarly interpreted at a very high level. These results underscore a consistent high level of proficiency in modular teaching across different levels of teaching experience, with specific areas identified for potential improvement.

Table 16
Proficiency in Modular Teaching in Mathematics based on Handling Feedbacks and Groupings by Number of Years in Teaching

Items	Shorter		Longer	
As a Math Teacher, I …	**Mean**	**Interpretation**	**Mean**	**Interpretation**

1. Revisit feedback for clear understanding	4.63	Very High Level	4.82	Very High Level
2. Clarify feedbacks	4.68	Very High Level	4.55	Very High Level
3. Open new concepts on how feedback can be understood	4.47	High Level	4.55	Very High Level
4. Appreciate feedback as a means of positive growth	4.47	High Level	4.73	Very High Level
5. Learn how to recognize feedback for improvement	4.58	Very High Level	4.64	Very High Level
6. Encourage learners to give feedback	4.58	Very High Level	4.64	Very High Level
7. See to it that feedback are responded to	4.58	Very High Level	4.73	Very High Level
8. Manifest my interest on learners' feedback	4.42	High Level	4.82	Very High Level
9. Demonstrate a positive attitude on any feedback	4.58	Very High Level	4.64	Very High Level
10. Consider feedback as an extension of lesson learned	4.63	Very High Level	4.82	Very High Level
Over-all Mean	**4.56**	**Very High Level**	**4.69**	**Very High Level**

Table 16 provides a summary of the proficiency analysis of modular teaching in mathematics in the new normal, focusing on handling feedback and years of teaching experience. The sub-mean scores were 4.56 for mathematics teachers with shorter years of teaching and 4.69 for those with longer years, both interpreted as very high levels of proficiency. Teachers with shorter years of teaching scored highest at 4.68 in item 2, emphasizing the clarity of feedback. Conversely, teachers with longer years of teaching scored highest across items 1-8 and 10 with a mean of 4.82, also interpreted as a very high level. In contrast, teachers with shorter years of teaching scored lowest at 4.42 in item 8, regarding demonstrating interest in learners' feedback, still interpreted at a high level. Meanwhile, teachers with longer years of teaching scored lowest at 4.55 in items 2 and 3, interpreted as very high levels, focusing on clarifying feedback. These findings underscore the importance of revisiting and considering feedback for enhancing student achievement, aligning with research highlighting the efficacy of feedback in improving student learning processes and understanding (Hattie and Temperley, 2014).

Table 17
Proficiency in Modular Teaching in Mathematics based on Assessment and Groupings by Number of Years in Teaching

Items	Shorter		Longer	
As a Math Teacher, I …	**Mean**	**Interpretation**	**Mean**	**Interpretation**
1. provide simple module materials containing basic math test	4.53	Very High Level	4.82	Very High Level
2. Increase their knowledge by returning their assessment results	4.47	High Level	4.73	Very High Level
3. Give relevant interpretation for their understanding	4.47	High Level	4.73	Very High Level
4. Evaluate assessment through basic concept in Math	4.68	Very High Level	4.82	Very High Level
5. Review math concepts in the assessment	4.74	Very High Level	4.82	Very High Level
6. Profile my learners assessment results	4.63	Very High Level	4.64	Very High Level
7. Make sure that all activities and assessment are update	4.68	Very High Level	4.64	Very High Level
8. Manifest a sense of responsibility over my learner's result	4.63	Very High Level	4.82	Very High Level
9. Develop a simple Math problem for the learners	4.74	Very High Level	4.82	Very High Level
10. Reinforce assessment through reviewed of the lessons	4.68	Very High Level	4.73	Very High Level
Over-all Mean	**4.63**	**Very High Level**	**4.75**	**Very High Level**

Table 17 summarizes the proficiency analysis of modular teaching in mathematics in the new normal, categorized by learners' assessment and years of teaching experience. The sub-mean scores were 4.53 for mathematics teachers with shorter years of teaching and 4.63 for those with longer years, both interpreted as very high levels of proficiency. Teachers with shorter years of teaching scored highest at 4.74 in items 5 and 9, focusing on developing simple math problems for learners. Conversely, teachers with longer years of teaching scored highest with an identical mean of 4.82 across items 1, 4, 5, 8, and 9, emphasizing providing simple module materials, evaluating assessments through basic math concepts, reviewing math concepts in assessments, demonstrating responsibility over learners' assessment results, and developing simple math problems for learners. On the other hand, teachers with shorter years of teaching scored lowest at 4.47 in items 2 and 3, still interpreted at a high level, while those with longer years scored lowest at 4.64 in item 6 and 7, similarly interpreted at very

high levels. These findings suggest potential adjustments in teaching strategies, particularly in enhancing assessment feedback and knowledge dissemination practices.

A Comparative Analysis in the Level of Proficiency in Modular Teaching in Mathematics in the New Normal based on Modular Instructional Delivery, Handling Feedbacks, and Assessment when grouped and compared by Age, Civil Status, Educational Attainment, and Number of Years in Teaching

Table 18
Difference in the Level of Proficiency in Modular Teaching in Mathematics in the New Normal based on Modular Instructional Delivery and Selected Variables Groupings

Variable	Category	N	Mean Rank	Mann Whitney U test	p-value	Sig. level	Interpretation
Age	Younger	15	15.77	108.50	0.865		Not Significant
	Older	15	15.23				
Civil Status	Single	10	16.60	89.00	0.619		Not Significant
	Married	20	14.95				
Highest Educational Attainment	Lower	19	16.32	89.00	0.493	0.05	Not Significant
	Higher	11	14.09				
Number of Years in Teaching	Shorter	19	15.47	85.50	0.396		Not Significant
	Longer	11	15.55				

Table 18 presents the results of the Mann-Whitney U test examining differences in proficiency levels of modular teaching in mathematics in the new normal across various groupings: age, civil status, educational attainment, and years in teaching. For younger versus older teachers, the test yielded a Mann-Whitney U value of 108.50, with mean scores of 15.77 and 15.23, respectively, and a non-significant p-value of 0.865 (> 0.05), indicating no statistically significant difference in proficiency levels between these groups. Similarly, comparisons between single and married teachers resulted in a Mann-Whitney U of 89.00, mean scores of 16.60 and 14.95, and a non-significant p-value of 0.619 (> 0.05), suggesting no significant difference in proficiency based on civil status. Educational attainment comparisons also showed a non-significant difference (p = 0.493), with the null hypothesis of no significant difference accepted. Lastly, comparisons based on years in teaching had a Mann-Whitney U of 85.50, mean scores of 15.47 and 15.55, and a non-significant p-value of 0.396 (> 0.05), indicating no significant difference in proficiency levels between teachers with shorter versus longer teaching stints. Thus, the study concludes that these demographic factors do not significantly affect proficiency in modular teaching in mathematics.

Table 19
Difference in the Level of Proficiency in Modular Teaching in Mathematics in the New Normal based on Handling Feedbacks and Selected Variable Groupings

Variable	Category	N	Mean Rank	Mann Whitney U test	p-value	Sig. level	Interpretation
Age	Younger	15	14.43	96.50	0.496		Not Significant
	Older	15	16.57				
Civil Status	Single	10	13.55	80.50	0.379		Not Significant
	Married	20	16.48				
Highest Educational Attainment	Lower	19	14.66	88.50	0.480	0.05	Not Significant
	Higher	11	16.95				
Number of Years in Teaching	Shorter	19	14.61	87.50	0.453		Not Significant
	Longer	11	17.05				

Table 19 summarizes the results of the Mann-Whitney U test examining differences in proficiency levels of modular teaching in mathematics, specifically on feedback, across various groupings: age, civil status, educational attainment, and years in teaching. Comparing younger and older teachers, the test yielded a Mann-Whitney U value of 96.50, with mean scores of 14.43 and 16.57, respectively, and a non-significant p-value of 0.496 (> 0.05), indicating no statistically significant difference in feedback proficiency between these age groups. Similarly, comparisons between unmarried and married teachers resulted in a Mann-Whitney U of 80.50, mean scores of 13.55 and 16.48, and a non-significant p-value of 0.379 (> 0.05), suggesting no significant difference in feedback proficiency based on civil status. Educational attainment comparisons also showed a non-significant difference (p = 0.480), with the null hypothesis of no significant difference accepted. Lastly, comparisons based on years in

teaching had a Mann-Whitney U of 88.50, mean scores of 14.66 and 17.05, and a non-significant p-value of 0.453 (> 0.05), indicating no significant difference in feedback proficiency between teachers with shorter versus longer teaching stints. Therefore, the study concludes that these demographic factors do not significantly affect proficiency in modular teaching in mathematics, specifically regarding feedback.

Table 20
Difference in the Level of Proficiency in Modular Teaching in Mathematics in the New Normal based on Assessment and Selected Variable Groupings

Variable	Category	N	Mean Rank	Mann Whitney U test	p-value	Sig. level	Interpretation
Age	Younger	15	13.83	87.50	0.282		Not Significant
	Older	15	17.17				
Civil Status	Single	10	14.15	86.50	0.538		Not Significant
	Married	20	16.18				
Highest Educational Attainment	Lower	19	15.29	100.50	0.858	0.05	Not Significant
	Higher	11	15.86				
Number of Years in Teaching	Shorter	19	14.50	104.00	0.982		Not Significant
	Longer	11	17.23				

Table 20 presents the results of the Mann-Whitney U test examining differences in proficiency levels of modular teaching in mathematics, specifically on learner assessment, across various groupings: age, civil status, educational attainment, and years in teaching. Comparing younger and older teachers, the test yielded a Mann-Whitney U value of 87.50, with mean scores of 13.33 and 17.17, respectively, and a non-significant p-value of 0.282 (> 0.05), indicating no statistically significant difference in assessment proficiency between these age groups. Similarly, comparisons between unmarried and married teachers resulted in a Mann-Whitney U of 86.50, mean scores of 14.15 and 16.18, and a non-significant p-value of 0.538 (> 0.05), suggesting no significant difference in assessment proficiency based on civil status. Educational attainment comparisons also showed a non-significant difference (p = 0.858), with the null hypothesis of no significant difference accepted. Lastly, comparisons based on years in teaching had a Mann-Whitney U of 104.00, mean scores of 14.50 and 17.23, and a non-significant p-value of 0.982 (> 0.05), indicating no significant difference in assessment proficiency between teachers with shorter versus longer teaching stints. Therefore, the study concludes that these demographic factors do not significantly affect proficiency in modular teaching in mathematics, specifically regarding learner assessment.

Conclusion

The findings indicate that despite most mathematics teachers being married and relatively new to teaching without extensive graduate education, they have demonstrated impressive proficiency in modular teaching during the pandemic. This underscores their potential for further professional development through well-planned human resource initiatives. Across all demographic variables examined, mathematics teachers consistently achieved a 'very high level' of proficiency in modular instructional delivery, feedback handling, and learner assessment, with only a few achieving a 'high level'. Improvement opportunities lie in introducing fresh instructional ideas tailored to individual learner backgrounds, fostering a more receptive approach to feedback, and enhancing the effectiveness of learner assessments. Moving forward, sustaining this high proficiency level requires continuous adaptation and innovation in teaching practices

Acknowledgment

References

Besser, E. D., & Newby, T. J. (2019). Exploring the role of feedback and its impact within a digital badge system from student perspectives. *TechTrends*, *63*(4), 485-495.

Black, L., Williams, J., Hernandez-Martinez, P., Davis, P., Pampaka, M., & Wake, G. (2010). Developing a 'leading identity': The relationship between students' mathematical identities and their career and higher education aspirations. *Educational Studies in Mathematics*, *73*(1), 55-72.

Blömeke, S., Kaiser, G., König, J., & Jentsch, A. (2020). Profiles of mathematics teachers' competence and their relation to instructional quality. *ZDM*, *52*(2), 329-342.

Chavez, J. D., & Maguate, G. S. ANALYSIS OF PUPILS' MISCONCEPTIONS IN SOLVING NON-ROUTINE WORD PRONLEMS. International Journal of Advance Research and Innovative Ideas in Education (IJARIIE), 09(04), 1938-1944.

De Vries, S., van de Grift, W. J., & Jansen, E. P. (2014). How teachers' beliefs about learning and teaching relate to their continuing professional development. *Teachers and Teaching*, *20*(3), 338-357.

DepEd. (2013). D.O. No. 43, s. 2017. OUR DEPARTMENT OF EDUCATION VISION, MISSION AND CORE VALUES (DEPED VMV) https://www.deped.gov.ph/2013/09/04/do-36-s-2013-our-department-of-education-vision-mission-and-core-values-deped-vmv/

Elawar, M. C., & Corno, L. (1985). A factorial experiment in teachers' written feedback on student homework: Changing teacher behavior a little rather than a lot. *Journal of educational psychology*, *77*(2), 162.

Jayme, R., & Maguate, G. Issues and Concerns of Teachers towards Modular Distance Learning Approach. International Journal of Scientific Research and Management (IJSRM), 11(08), 2848-2857.

Mastul, A. R. H., & Hajilan, K. O. (2017). Secondary School Teachers' Classroom Management Practices: Their Implications for the Academic Performance of Grade 10 Students. *Journal of Social Sciences (COES&RJ-JSS)*, *6*(3), 558-583.

Nabie, M. J., Akayuure, P. & Sofo, S. (2013). Integrating Problem Solving and Investigations in Mathematics: Ghanaian Teachers' Assessment Practices. *International Journal of Humanities and Social Science, 3(15),* 46-

Ochieng, K. R., Kiplagat, P. & Nyongesa, S. (2017). Influence of teacher competence on mathematics performance in KCSE Examinations among public schools in Nyatike Subcounty, Migori County Kenya.

Paniagua, A. & Istance, D. (2017). Educational Research and Innovation Teachers as Designers of Learning Environments THE IMPORTANCE OF INNOVATIVE PEDAGOGIES.

Papanthymou, A. & Darra, M. (2019). The Contribution of Learner Self-Assessment for Improvement of Learning and Teaching Process: A Review. *Journal of Education and Learning*, *8(1),* 48-64.

Schoenfeld, A. H., & Kilpatrick, J. (2008). Toward a theory of proficiency in teaching mathematics. In *International handbook of mathematics teacher education: volume 2* (pp. 321-354). Brill Sense.

Sotto, N. A. B., Geroso, M. J. S., Hofileña, H. S., Geroso, P. J. M. S., & Maguate, G. S. GAMES: Gamification and Mathematics Education synergy. International Journal of applied Science and Technology (IJAST), 13(02), 41-48.

Sulistyowati, T., & Kurniati, D. (2017). PRE-SERVICE TEACHING PROGRAM FOR EDUCATING STUDENT-TEACHERS IN MANAGING THEIR CLASS. *Refleksi Edukatika: Jurnal Ilmiah Kependidikan*, *8*(1).

Villena, M. G., & de Mesa, M. C. (2015). Teaching styles of the classroom managers in one basic primary school in the Philippines. *Asia Pacific Journal of Multidisciplinary Research*, *3*(2), 113-119.