

# Praxeology and Coping Mechanism of Mathematics Teachers to the Challenges Encountered in the New Normal

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## Abstract

The emergence of the new normal in the Philippines changed the educational landscape. Education amidst pandemic brings difficulties for learners, teachers, and parents. This study focuses on determining the challenges, praxeology, and coping mechanisms of Mathematics Teachers in new normal education.

A descriptive research design was used to determine the challenges encountered by mathematics teachers in new normal education and their praxeology and coping mechanisms in teaching Mathematics in public secondary school in the City of Biñan in the Academic year 2021-2022. Frequency Percentage Distribution used to determine the status of demographic profile of the respondents. To ascertain the level of praxeology and coping mechanism, weighted mean distribution were considered. Analysis of variance were ventured to test the difference between praxeology and coping mechanism with respect to their demographic profile. To examine the significant effect of challenges encountered to praxeology and coping mechanism, regression analysis was used.

From the data gathered, it was found that the performance rating of the teachers has significant differences with their Mathematics Praxeology in terms of skills. It implies that teachers' skills to perform and respond to the New Normal Education varies with their performance rating. Also, challenges experienced by mathematics teachers have a significant effect on their praxeology and coping mechanisms. It means that the challenges they encountered had an impact on their actions and coping mechanisms. From the findings it is recommended that teachers should continue to upskill to sustain their performance.

The division or school can create a development plan for teachers to sustain their praxeology and coping mechanisms addressed in the challenges they encountered and the possible shift to face-to-face classes. Future researchers may venture challenges, praxeology, and coping mechanisms of teachers from other subject areas or other coping strategies.

*Keywords:* Challenges Encountered; Praxeology; Coping Mechanism; Demographic Profile; New Normal

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## 1. Main text

### Introduction

The emergence of the new normal in the Philippines completely changed the educational landscape. Due to the call and necessity of the situation, the new normal mode of education transformed the teaching-learning process, giving up the standard and conventional approach. In the sphere of education, the

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established and conventional ways of doing things were suddenly modified.

Education amidst pandemic brings difficulties for learners, teachers, and parents. The Department of Education provides a solution which is blended learning. However, the lack of network infrastructures, computers, and internet access is challenging distance learning in developing countries, like the Philippines. Parents' involvement is important to make blended learning possible.

However, many parents are not themselves in school. Parents' experience is not the same as today which results in a challenge. Also, teachers experience challenges to provide quality education among the learners.

Teachers experience a paradigm shift on the usual way of education. Canonizado (2020) emphasized that teachers experience difficulties brought about by this pandemic. These problems may include teaching and enhancement of the skills of the learners. Conduct of classes was changed, assessing, and evaluating the learners need to be valid even in this time of pandemic and managing student's behavior virtually finds difficult on the part of the teacher. Access to computers and access to the internet is basic to successful distance teaching. Not all students are equipped with technology to supplement their learning. Not all parents have the capacity to provide these internet or gadgets due to financial aspects.

In face-to-face instruction, learning mathematics is not that easy. Students experience difficulties even with the guidance of the teacher. Because of this pandemic, students became independent learners. Limited time to collaborate or supervise by their teachers. Aldon et al (2021) cited the main challenges that teachers had to face during the time of lockdown: (a) managing distance learning to support students' learning through specific methodologies; (b) managing distance learning to develop assessment; (c) managing distance learning to support those students that face difficulties and/or are living a difficult situation/developing inclusive teaching; and (d) managing distance learning to exploit its potentialities for fostering typical mathematical processes. As an overall conclusion, they see that the pandemic has affected mathematics teaching intensely.

With these challenges, the researcher will assess the mathematics teachers' praxeology and coping mechanisms in the new normal. How the Mathematics Teachers' preparation, performance, and mechanism to adapt in this new normal education. Their capacity to understand in-depth the student's engagement and motivation, skills in delivering the lesson and assessing and evaluating student performance and strategies to involve the parents in the teaching and learning process of the students. This also concerns how the teachers prioritize and practice their own health and safety as individual to perform task related to school.

## **Theoretical Framework**

Distance Education adapted due to COVID-19 pandemic. New Normal Education provides an alternative mode of learning. The Department of Education adopted a blended learning setup, which combined different distance learning modalities such as the use of printed modules and materials delivered through television, radio, and the internet.

Distance education brings together the physically distant learners and the facilitators of the learning activity around planned and structured learning experiences via various two- or multi-way mediated media channels that allow interactions between/among learners, facilitators as well as between learners and educational resources (Saykili,2018).

Crisis Distance Education (CDE) is unique in its philosophies and procedures, being fundamentally different from typical distance education in several ways. CDE has been employed in schools out of an unforeseen need, with neither prior regulations nor preparation. It has been pushed into society without the necessary skills and knowledge. It has been rushed in to save the classroom and get educational institutions back on their feet. It is an exception that needs to be the norm over a short period of time (Abdulrahman (2020). From this crisis in distance education, challenges were experienced by the students, teachers, and parents. Teachers find ways to address it. They used to take action to adapt to the situation, a new normal.

Praxeology is practice which belongs to a certain human being influenced by his social and cultural milieu. The study of praxeology allows us to identify what happens in real life and how a certain abstract object, such as teaching competences, manifests itself in the real practice (Renata,2017). In this study, Mathematics Teachers' Praxeology include knowledge, skills, and strategies to adapt to a new environment. Teachers need to act, respond, and adjust to the new face of education. Mathematics Teachers not only adjust in their performance at school but also to their emotion concerning their health and safety to cope up with this new normal.

COVID-19 pandemic gave us the opportunity to extend our means of understanding and coping mechanisms to adapt to the situation. Problem-focused coping is an individuals' directly engaging and managing the cause of their discomfort. Individuals prefer to confront, control, or manage stressful situations directly (Lenz, 2010) The problem-focused coping is a type of active coping. In this study, the problem focused coping mechanism includes changing the behavior to adapt to the situation, the challenges in new normal education.

Through challenges encountered, teachers' ways to act and adapt to the situation needs to be emphasized and addressed.

### **Statement of the Problem**

This study attempts to determine the challenges, praxeology, and coping mechanisms of Mathematics Teachers in new normal education.

Specifically, it sought to answer the following questions.

1. What is the status of demographic profile of the respondents in terms of:
  - 1.1 Educational Attainment;
  - 1.2 Years in Service; and
  - 1.3 Performance Rating?
2. What is the level of challenges encountered by Mathematics Teachers in New Normal Education in terms of:
  - 2.1 Teachers Preparations and Performance;
  - 2.2 Assessment and Evaluation of Student Performance;
  - 2.3 Students Engagement and Motivation; and
  - 2.4 Parental Involvement?
3. What is the level of Praxeology of Mathematics Teachers in terms of:
  - 3.1 Knowledge;
  - 3.2 Skills; and
  - 3.3 Strategies?
4. What is the level of Coping Mechanism of Mathematics Teachers in terms of:
  - 4.1 Positive-well being;
  - 4.2 Time Management;
  - 4.3 Openness to change; and
  - 4.4 Peer Mentoring and Collaboration?
5. Is there a significant difference between the Praxeology and Coping Mechanism of Mathematics Teachers to their demographic profile?
6. Is there a significant effect on challenges encountered on the Praxeology and Coping Mechanism of the Mathematics Teachers?

### **Research Methodology**

The study was conducted in public secondary school in the City of Biñan for the Academic year 2021-2022. A descriptive research design was used to determine the challenges coping mechanisms in teaching Mathematics in public secondary school in the City of Biñan in the Academic year 2021-2022. In interpreting the results, the gathered data were organized, tabulated, and encoded for analysis.

Percentage Distribution was used to determine the status of demographic profile of the respondents. Standard Deviation formula for long method was used to know the variability or spread of data around the mean. The weighted mean formula will be used to determine the level of challenges encountered, praxeology and coping mechanism by Mathematics Teachers. Analysis of Variance (ANOVA) was used to determine if there was a significant difference of praxeology and coping mechanisms of the mathematics teachers to their demographic profile. Also, to determine the significant effect of praxeology of the mathematics teachers to the challenges they encounter. Regression Analysis of Variance (ANOVA) was used to determine if there was a significant effect of praxeology and coping mechanisms of the mathematics teachers to the challenges they encounter.

## Results and Discussion

Table 1. Difference on the Praxeology of Mathematics Teachers with Respect to Educational Attainment

Indicators	df	Mean Square	F value	P value	Analysis
Knowledge	1	.190	.894	.471	Not Significant
	105	.213			
	106				
Skills	1	.133	.500	.736	Not Significant
	105	.267			
	106				
Strategies	1	.052	.260	.903	Not Significant
	105	.201			
	106				

It reveals the Praxeology of Mathematics Teachers in terms of Knowledge (F=0.894, P=0.471), Skills (F=0.500, P=0.736), and Strategies (F=0.260, P=0.903) have no significant difference in demographic profile with respect to educational attainment.

Table 2. Difference on the Praxeology of Mathematics Teachers with Respect to Years in Service

Indicators	Df	Mean Square	F value	P value	Analysis
Knowledge	1	.369	1.793	.136	Not Significant
	105	.206			
	106				
Skills	1	.411	1.606	.179	Not Significant
	105	.256			
	106				
Strategies	1	.340	1.794	.136	Not Significant
	105	.189			
	106				

It shows the ANOVA Table of Mathematics Teachers Praxeology with respect to years in service. Mathematics Teachers praxeology in terms of Knowledge (F=1.793, P=0.136), Skills (F=1.606, P=0.179), and Strategies (F=1.794, P=0.136) have no significant difference in demographic profile with respect to years in service.

Table 3. Difference on the Praxeology of Mathematics Teachers with Respect to Performance Rating

Indicators	Df	Mean Square	F value	P value	Analysis
Knowledge	1	.008	.035	.852	Not Significant
	105	.214			
	106				
Skills	1	1.216	4.806	.031**	Significant
	105	.253			
	106				
Strategies	1	.244	1.256	.265	Not Significant
	105	.195			
	106				

It results the difference of Mathematics Teachers Praxeology with respect to performance rating. Mathematics Teachers praxeology in terms of Knowledge (F=0.035, P=0.852) and Strategies (F=1.256, P=0.265) have no significant difference in demographic profile with respect to performance rating. While mathematics teacher praxeology in terms of skills (F=4.806, P=0.031) have significant differences with respect to performance rating of the Individual Performance Commitment and Review Form (IPCRF).

Table 4. Difference on the Coping Mechanism of Mathematics Teachers with Respect to Educational Attainment

Indicators	df	Mean Square	F value	P value	Analysis
Positive Well Being	1	.260	1.719	.152	Not Significant
	105	.151			
	106				
Time Management	1	.145	1.004	.409	Not Significant
	105	.145			
	106				
Openness to Change	1	.143	.766	.550	Not Significant
	105	.187			
	106				
Peer Mentoring & Collaboration	1	.016	.091	.985	Not Significant
	105	.172			
	106				

The indicates the Mathematics Teachers Coping Mechanisms with respect to educational attainment. Mathematics Teachers Coping Mechanism in terms of Positive Well Being (F=1.719, P=0.152), Time Management (F=1.004, P=0.409), Openness to change (F=0.766, P=0.550) and Peer Mentoring and Collaboration (F=0.091, P=0.985) have no significant difference in demographic profile with respect to educational attainment.

Table 5. Difference on the Coping Mechanism of Mathematics Teachers with Respect to Years in Service

Indicators	df	Mean Square	F value	P value	Analysis
Positive Well Being	1	.105	.666	.617	Not Significant
	105	.157			
	106				
Time Management	1	.041	.275	.894	Not Significant
	105	.149			
	106				
Openness to Change	1	.069	.364	.834	Not Significant
	105	.190			
	106				
Peer Mentoring & Collaboration	1	.066	.386	.818	Not Significant
	105	.170			
	106				

The table shows the Mathematics Teachers Coping Mechanisms with respect to years of service. Mathematics Teachers Coping Mechanism in terms of Positive Well Being ( $F=0.666$ ,  $P=0.617$ ), Time Management ( $F=0.275$ ,  $P=0.894$ ), Openness to change ( $F=0.364$ ,  $P=0.834$ ) and Peer Mentoring and Collaboration ( $F=0.386$ ,  $P=0.818$ ) have no significant difference in demographic profile with respect to years of service.

Table 6. Difference on the Coping Mechanism of Mathematics Teachers with Respect to Performance Rating

Indicators	df	Mean Square	F value	P value	Analysis
Positive Well Being	1	.033	.209	.648	Not Significant
	105	.157			
	106				
Time Management	1	.011	.077	.782	Not Significant
	105	.146			
	106				
Openness to Change	1	.244	1.317	.254	Not Significant
	105	.185			
	106				
Peer Mentoring & Collaboration	1	.009	.054	.816	Not Significant
	105	.167			
	106				

The table indicates the Mathematics Teachers Coping Mechanisms with respect to performance rating. Mathematics Teachers Coping Mechanism in terms of Positive Well Being ( $F=0.209$ ,  $P=0.648$ ), Time Management ( $F=0.077$ ,  $P=0.782$ ), Openness to change ( $F=1.317$ ,  $P=0.254$ ) and Peer Mentoring and Collaboration ( $F=0.054$ ,  $P=0.816$ ) have no significant difference in demographic profile with respect to performance rating.

Table 7. Effect of Challenges Encountered to the Praxeology of Mathematics Teachers in terms of Knowledge

Indicators	Beta	t value	p value	Analysis
(Constant)		5.345	0.000	
Teachers Preparation and Performance	0.017	0.147	0.883	Not Significant
Assessment and Evaluation of Student Performance	0.402	2.890	0.005**	Significant
Students Engagement and Motivation	0.233	1.474	0.144	Not Significant
Parental Involvement	0.078	0.583	0.561	Not Significant
Adjusted R Square = 0.475 F = 23.033      p = 0.000				

Challenges on assessment and evaluation of student's performance have the t-value of 2.890 is significant with p value of 0.005 as influence by Praxeology of Mathematics Teachers in terms of Knowledge. The beta coefficient of 0.402 indicates that every standard deviation unit in student assessment and evaluation of performance, there is a 0.402 unit increase with praxeology of Mathematics Teachers. The adjusted R-square indicates the 47.5% variation. It implies that majority of the Mathematics Teacher demonstrate competence in creating and implementing assessment and evaluation to the students' performance.

However, teachers' preparation, student engagement and motivation, and parental involvement have no significant effect on the teacher's depth understanding in Basic Education Learning Continuity Plan which focused on Most Essential Learning Competencies (MELCS) and Learning Modality. It means that the difficulties they faced in terms of preparation, engagement, and parental participation does not address the praxeology of mathematics teachers in terms of knowledge.

Table 8. Effect of Challenges Encountered to the Praxeology of Mathematics Teachers in terms of Skills

Indicators	Beta	t value	p value	Analysis
(Constant)		3.504	.001	
Teachers Preparation and Performance	0.236	2.238	.027**	Significant
Assessment and Evaluation of Student Performance	0.123	.909	.366	Not Significant
Students Engagement and Motivation	0.093	.644	.521	Not Significant
Parental Involvement	0.282	2.240	.027**	Significant
Adjusted R-square= 0.497 F = 25.186      p = 0.000				

Challenges encountered in teachers' preparation and performance have t-value of 2.238 is significant, having 0.027 p value to the Praxeology of Mathematics Performance in terms of Skills. Also, challenges encountered of Mathematics Teachers in involving parents have significant effect on their praxeology in terms of skills with t value of 2.240 and p value of 0.027. In which, the beta coefficient of Teachers Preparation and Performance (B=0.236) and Parental Involvement (B=0.282) indicates the standard deviation unit increase corresponds to 0.236 and 0.282 units with Praxeology of Mathematics teachers in terms of skills, respectively. The adjusted R-square signify the 49.7 % variation.

Table 9. Effect of Challenges Encountered to the Praxeology of Mathematics Teachers in terms of Strategies

Indicators	Beta	t-value	p-value	Analysis
(Constant)		5.515	.000	
Teachers Preparation and Performance	0.101	1.157	.250	Not Significant
Assessment and Evaluation of Student Performance	0.172	1.536	.128	Not Significant
Students Engagement and Motivation	0.236	1.994	.049**	Significant
Parental Involvement	0.147	1.416	.160	Not Significant
Adjusted R-square =0.541 F = 30.009 p = 0.000				

Challenges on students' engagement and motivation influence the Praxeology of Mathematics Teachers in terms of strategies. The beta coefficient of 0.236 indicates the standard deviation unit increase in students' engagement and motivation, that there is a 0.236 unit increase in teachers' praxeology. The t-value of 1.994 is significant having the p-value of 0.049. The adjusted R-square indicates the 54.1% variation.

Table 10. Effect of Challenges Encountered to the Coping Mechanism of Mathematics Teachers in terms of Positive Well Being

Indicators	Beta	t value	p value	Analysis
(Constant)		9.070	.000	
Teachers Preparation and Performance	-1.174	-1.974	.051**	Significant
Assessment and Evaluation of Student Performance	0.540	4.742	.000**	Significant
Students Engagement and Motivation	-1.60	-1.327	.188	Not Significant
Parental Involvement	0.253	2.402	.018**	Significant
Adjusted R-square =0.404 F = 17.293 p = 0.000				

Challenges on Teachers Preparation and Performance ( $t=-1.974$ ,  $p=0.51$ ), Assessment and Evaluation of Student Performance ( $t=4.742$ ,  $p=0.000$ ) and Parental Involvement ( $t=2.402$ ,  $p=0.018$ ) are significant predictors of Mathematics Teachers Coping Mechanism in terms of Positive Well-being. The beta coefficient of -1.74, 0.540 and 0.253 respectively indicates that for every standard deviation unit increase in the challenges encountered, there is corresponding unit increase with the Coping Mechanism of Mathematics Teachers in terms of Positive Well-Being. The adjusted R-square signify the 40.4% variation. It means that teachers' positive well-being had an impact on preparing, assessing, evaluating students' performance, and involving them into parents. So, teacher's ability to be optimistic help to address the challenges they encountered.

Table 11. Effect of Challenges Encountered to the Coping Mechanism of Mathematics Teachers in terms of Time Management

Indicators	Beta	t value	p value	Analysis
(Constant)		8.504	.000	
Teachers Preparation and Performance	0.037	.453	.651	Not Significant
Assessment and Evaluation of Student Performance	0.239	2.276	.025**	Significant
Students Engagement and Motivation	.094	-.840	.403	Not Significant
Parental Involvement	0.336	3.451	.001**	Significant
Adjusted R-square =0.454 F = 21.211 p = 0.000				

Challenges experienced by mathematics teachers in Assessment and Evaluation of student's performance ( $t=2.276$ ,  $p=0.025$ ) and Parental involvement ( $t=3.451$ ,  $p=0.001$ ) had a significant effect on teacher's time management. The beta coefficient of Assessment and Evaluation of Students Performance and Parental involvement have the value of 0.239 and 0.336 respectively, indicates that in every standard deviation unit increase, there is corresponding 0.239 and 0.336 unit increase in teachers coping mechanisms. The adjusted R-square indicates the 45.4% of variation.

Table 12. Effect of Challenges Encountered to the Coping Mechanism of Mathematics Teachers in terms of Openness to Change

Indicators	Beta	t value	p value	Analysis
(Constant)		6.989	.000	
Teachers Preparation and Performance	-0.123	-1.337	.184	Not Significant
Assessment and Evaluation of Student Performance	0.449	3.792	.000**	Significant
Students Engagement and Motivation	-0.121	-.964	.338	Not Significant
Parental Involvement	0.362	3.307	.001**	Significant
Adjusted R-square =0.460 F = 21.725 p = 0.000				

Assessment and Evaluation of students' performance ( $t=3.792$ ,  $p=0.000$ ) and parental involvement ( $t=3.307$ ,  $p=0.001$ ) had a significant effect on coping mechanisms in terms of openness to change. The beta coefficient of 0.449 and 0.362 indicates that in every unit increase, there is a corresponding 0.449 and 0.362 unit increase to coping mechanisms in terms of openness to change, respectively. The adjusted R-square indicates the 46% variation. It means that openness to change as part of a coping mechanism had an impact on the challenges encountered in terms of assessment and evaluation of students' performance and parental involvement.

Table 13. Effect of Challenges Encountered to the Coping Mechanism of Mathematics Teachers in terms of Peer Mentoring and Collaboration

Indicators	Beta	t value	p value	Analysis
(Constant)		7.412	.000	
Teachers Preparation and Performance	0.056	.662	.510	Not Significant
Assessment and Evaluation of Student Performance	0.258	2.366	.020**	Significant
Students Engagement and Motivation	-0.141	-1.219	.226	Not Significant
Parental Involvement	0.399	3.954	.000**	Significant
Adjusted R-square = 0.487				
F = 24.217      p = 0.000				

Challenges Encountered on Assessment and Evaluation of students' performance ( $t=2.366$ ,  $p=0.020$ ) and parental involvement ( $t=3.954$ ,  $p=0.000$ ) had a significant effect on coping mechanisms in terms of peer monitoring and collaboration. The beta coefficient of 0.258 and 0.399 indicates that in every standard deviation unit increase, there is a corresponding unit with Coping Mechanism of Mathematics Teachers. The Adjusted R-square signify the 48.7% variations. It means that peer monitoring and collaboration had an impact on the challenges encountered by mathematics teachers in terms of assessment and evaluation of students' performance and parental involvement. Mathematics teachers' skills to mentor and collaborate with others help to address the challenges brought by the new normal education.

### Summary of Findings

Different significant points were found after the conduct of the research. Based on the different findings of the study, the following findings are hereby enumerated based on the statement of the problem:

1. Status of demographic profile of the respondents includes educational attainment, years in service and performance rating. In terms of educational attainment, almost half the respondents started to develop their education attainment as part of their professional development. Also, most of them are recent in service. Mathematics Teachers performance rating determines the adjectival rating of very satisfactory and outstanding. It means that mathematics teachers are well informed with regards to the procedure and competence of performance rating.
2. Level of challenges encountered by Mathematics Teachers includes teachers' preparation and performance, assessment and evaluation of student performance, student engagement and motivation, and parental involvement. These challenges are interpreted as very high which means that mathematics teachers experience challenges in preparing, assessing, evaluating, and establishing connection with the parents as brought by the changes and adjustment of the new normal education.
3. Level of praxeology of Mathematics Teachers pertains to knowledge, skills and strategies and interpreted as very high. This means that mathematics teachers are able have in depth understanding, manifestation their skills, and look for ways to adapt the competence of the new normal education.
4. Difference of praxeology and coping mechanism with respect to their demographic profile as educational attainment, years in service and performance rating. In coping mechanisms, mathematics teachers' capacity to cope with the new normal does not influence their status of demographic profile. Moreover, in praxeology of mathematics teachers in terms of knowledge and strategies have no significant difference when group according to their demographic profile. However, there is a significant difference in the mathematics teachers' praxeology and their performance rating. It implies that teachers' skills affect their work performance or performance rating as very satisfactory and outstanding teachers.
5. Challenges encountered by mathematics teachers affect their praxeology and coping mechanisms. It denotes the significant effect of the challenges encountered to their praxeology and coping

mechanism. It means that despite the challenges faced by mathematics teachers they were able to take actions and accept the changes in the new normal education.

## Conclusion

Based on the different findings of the study, the following conclusions are hereby drawn: Performance ratings of mathematics teachers have no significant difference in terms of their coping mechanisms. Also, teachers' highest educational attainment and years of experience or service have no significant difference in their praxeology and coping mechanisms. It means that mathematics teachers' educational background and teaching experience (in terms of years) had no significant impact on their actions and coping mechanisms.

However, teachers' adjectival performance ratings have significant differences to Mathematics Teachers Praxeology in terms of skills. It means that teachers gained skills that had an impact on their preparation, submission, and verification in their performance rating.

Mathematics Teachers have enough knowledge to understand the competence of the new normal education. They are skilled to adapt with the new learning and continue their professional development.

Additionally, challenges encountered by Mathematics Teachers in this time of pandemic have significant effect on their praxeology and coping mechanisms. It means that despite the challenges they encountered, mathematics teachers were able to act and cope with the adjustment in the new normal education.

## Recommendations

From the said conclusion, the following recommendations were presented:

1. It is recommended that learners should understand the praxeology and coping mechanism from their teacher to help them adapt with the new normal education.
2. It is highly encouraged that teachers should continue to take action to address the challenges they encounter. They can also explore other coping strategies to address the challenges they encounter.
3. It is advised to the parents to bind with the teacher to have hand-in-hand help and consistent communication for the betterment of the learners.
4. It is suggested that division or schools can continue uplifting their teacher to reiterate the updates of the performance rating through orientations, seminars, and workshops. They should also produce a development plan for teachers to sustain their praxeology and coping mechanisms addressed in the challenges they encountered and the possible shift to a face-to-face class.
5. Future researchers may venture challenges, praxeology, and coping mechanisms of teachers from other subject areas or other coping strategies.

## References

- Abdulrahman Essa Al Lily, Abdelrahim Fathy Ismail, Fathi Mohammed Abunasser, Rafdan Hassan Alhajhoj Alqahtani (2020) Distance education as a response to pandemics: Coronavirus and Arab culture, *Technology in Society*, Volume 63, 2020, 101317, ISSN 0160-791X, <https://doi.org/10.1016/j.techsoc.2020.101317>.
- Abellanosa, Rhoderick (2020): Teaching in the new normal: Panay News Press Reader-Digital Newspaper and Magazine: <https://www.pressreader.com/similar/281672552288861>
- ADEC Innovation Knowledge Management (2022). Engagement as a Challenge: Getting Student's Attention in the New Normal of Learning. <https://www.km.adec-innovations.com/resources/engagement-as-a-challenge-gettingstudent%E2%80%99s-attention-in-the-new-normal-of-learning/>
- Aggabao, Ambrose Hans (2002). Development of Individualized Self- Instructional Modules on Selected Topics in Basic Mathematics. *Journal of Research*, Xi (1)
- Aldon, G.; Cusi, A.; Schacht, F.; Swidan, O.(2021) Teaching Mathematics in a Context of Lockdown: A Study Focused on Teachers' Praxeologies. *Educ. Sci.* 2021, 11, 38. <https://files.eric.ed.gov/fulltext/EJ1288257.pdf>

- Atam, Wennzel Kenn G., Casiano Jennifer O. & Jaena, Girlie Joy P. (2012). graphic Profile and Work Ability of Teachers In the City of Koronadal. <http://www.ndmu.edu.ph/public/CED%202012-2013.pdf>
- Basilaia, G., & Kvavadze, D. (2020). Transition to Online Education in Schools during a SARS-CoV-2 Coronavirus (COVID-19) Pandemic in Georgia. *Pedagogical Research*, 5(4)
- Bunagan F. (2012), Strategic Intervention: Learning and Teaching Aid. <http://www.Slideshare.Net/Felixbunagan/Strategicinterventionhttp://84.22.166.132/Learning-And-Teaching-Guide/Deep-AndsurfaceapprochesLearning.Htm>
- Bolinao, Imelda C. et.al (2018). Level of Stress and Coping Mechanisms of Teacher Education Interns of the University of Bohol. Volume 12 March 2018 ACADEME University of Bohol, Graduate School and Professional Studies Journal. <https://pdfs.semanticscholar.org/978d/83f9257e817f680e286e06b3371365af3581.pdf>
- Caballes, Dennis & Panol, Rowena. (2021). Teachers' Readiness Level on Online Teaching: Embracing Distance Learning Modality.
- Calderon, J. (2006). *Methods of research and thesis writing* (2nd Ed.). Mandaluyong City: National Bookstore.
- Canonizado Isagani Costales (2020): Challenges that Teachers Are Facing Under the New Normal System in Education: Hub Page Article: Retrieved from <https://discover.hubpages.com/education/Challenges-that-Teachers-Are-Facing-Under-the-New-Normal-System-in-Education>
- Crawford, J., Butler-Henderson, K., Jurgen, R., Malkawi, B. H., Glowatz, M., Burton, R., Magni, P., & Lam, S. (2020). COVID-19: 20 countries' higher education intra-period digital pedagogy responses. *Journal of Applied Learning & Teaching*, 3. <https://doi.org/10.37074/jalt.2020.3.1.7>
- Capacio Leadean Jay A., Celesio, Gilbert A. & Naparan, Genesis B. (2021): Teachers' Experiences In Online Teaching and Learning Modality: EduLine: *Journal of Education and Learning Innovation*: <https://doi.org/10.35877/454RI.eduline399>
- CHED. (2020). Ched Covid-19 Advisory No. 3. Retrieved from <https://ched.gov.ph/wp-content/uploads/CHED-COVID-2019-Advisory-No.-3.pdf>
- Chin, Mean (2020): Students' New Normal: Modular Distance Learning: Unique Philippines <https://www.uniquephilippines.com/students-new-normal-modular-distance-learning/>
- Chevallard, Yves M. B., Sineae Kim. (2015) What is a theory according to the anthropological theory of the didactic? Konrad Krainer; Nada Vondrová. CERME 9 - Ninth Congress of the European Society for Research in Mathematics Education, Feb 2015, Prague, Czech Republic. pp.2614-2620. Proceedings of the Ninth Congress of the European Society for Research in Mathematics Education
- Christenbury, L. (2011, January ). The Flexible Teacher. <http://www.ascd.org/publications/educationalleadership/dec10/vol68/num04/The-Flexible-Teacher.aspx>
- Cortez, C. P. (2020). Blended, Distance, Electronic and Virtual-Learning for the New Normal of Mathematics Education: A Senior High School Student's Perception. *European Journal of Interactive Multimedia and Education*, 1(1), e02001. <https://doi.org/10.30935/ejimed/8276>
- Delgado, P. (2019, October 22). Institute for the Future of Education Observatorio Tecnológico de Monterrey. Retrieved from The Importance of Parental Involvement in Teaching. Observatorio of Educational Innovation. Tecnológico de Monterrey
- DepEd No. 2 s. 2015: Guidelines on the establishment and implementation of the Result-Based Performance Management (RPMS) in the Department of Education. [https://www.deped.gov.ph/wpcontent/uploads/2015/02/DO\\_s2015\\_02.pdf](https://www.deped.gov.ph/wpcontent/uploads/2015/02/DO_s2015_02.pdf)
- DepEd Order No. 36 s. 2013: Our Department of Education Vision, Mission and Core Values: <https://depedpines.com/2013/09/deped-order-no-36-s-2013-ourdepartment-of-education-vision-mission-and-core-values-deped-vmv/>
- DepEd Order No. 42 s. 2017: Philippine Professional Standards for Teachers <https://johnlucuin.wordpress.com/2018/04/28/philippine-professional-standards-for-teachers-deped-order-no-42s2017/#:~:text=As%20a%20framework%20of%20teacher%20quality%2C%20the%20National,and%20was%20facilitated%20by%20drawing%20on%20the%20learning>
- De Vera, Jayson. (2020). CHAPTER-11 Challenges and Teacher Resilience: The New Normal Classroom Instruction Using Social Media in Philippine Context.
- Dias-Lacy, Samantha & Guirguis, Ruth (2017). Challenges for New Teachers and Ways of Coping with Them. *Journal of Education and Learning*; Vol. 6, No. 3; 2017. <http://doi.org/10.5539/jel.v6n3p265>

- Dixit, Avinash. 2002. "Incentives and Organizations in the Public Sector: An Interpretative Review." *Journal of Human Resources* 37 (4): 696-727.
- Dhawan, S. (2020). Online learning: a panacea in the time of COVID-19 crisis. *Journal of Educational Technology Systems*, 49(1), 5-22. <https://journals.sagepub.com/doi/full/10.1177/0047239520934018>
- Downing, J. J., & Dymont, J. E. (2013). Teacher educators' readiness, preparation, and perceptions of preparing Preservice teachers in a fully online environment: An exploratory study. *The Teacher Educator*, 48(2), 96-109. <https://doi.org/10.1080/08878730.2012.760023>
- Fisher, M. J. (2022.). Vanderbilt's University. Retrieved from Student Assessment in Teaching and Learning: <https://cft.vanderbilt.edu/student-assessment-in-teaching-and-learning/>
- Hattie, John (2012). *Visible Learning for Teachers: Maintaining Impact on Learning*. New York: Routledge.
- Holmberg, B. 1985. The feasibility of a theory of teaching for distance education and a proposed theory. *ZIFF Papiere* 60. ERIC, ED 290013.
- Keegan, D. (2002). The future of learning: From eLearning to mLearning. Hagen: Zentrales Institut fur Fern Universitat Retrieved from [https://www.academia.edu/3442041/The\\_future\\_of\\_learning\\_From\\_eLearning\\_to\\_mLearning](https://www.academia.edu/3442041/The_future_of_learning_From_eLearning_to_mLearning).
- Irfan, Muhammad et.al (2020): Challenges during the Pandemic: Use of E-Learning in Mathematics Learning In Higher Education: *Infinity Journal*: <https://doi.org/10.22460/infinity.v9i2.p147-158>
- Kalman, Rebecca., Esparza, Monica Macias & Weston Christina (2020). Student Views of the Online Learning Process during the COVID-19 Pandemic: A Comparison of Upper-Level and Entry-Level Undergraduate Perspectives. *J. Chem. Educ.* 2020, 97, 9, 3353–3357 Publication Date: August 17, 2020 <https://doi.org/10.1021/acs.jchemed.0c00712>
- Kamal, S. (2015). Implementasi pendekatan scientific untuk meningkatkan kemandirian belajar matematika. *Math Didactic: Jurnal Pendidikan Matematika*, 1(1), 56-64. <https://doi.org/10.33654/math.v1i1.95>
- Kini, T., & Podolsky, A. Does Teaching Experience Increase Teacher Effectiveness? A Review of the Research (Palo Alto: Learning Policy Institute, 2016). <https://doi.org/10.54300/625.642>.
- Kloosterman, Vivian (2014) What is continuing professional development?: <https://continuingprofessionaldevelopment.org/what-is-continuing-professional-development/>
- Ko, Y. C., Chan, K. B., Lai, G., & Boey, K. W. (2000). Stress and coping of Singapore teachers: A quantitative and qualitative analysis. *Social Science and Medicine*, 181-200. <https://doi.org/10.1163/156852200512049>
- Kwaah, Christopher Yaw & Essilfie, Gabriel (2017) Stress and Coping Strategies among Distance Education Students at The University of Cape Coast, Ghana: *Turkish Online Journal of Distance Education-TOJDE* July 2017 ISSN 1302-6488 Volume: 18 Number: 3 Article 8
- Lagrisola, Vivian M. (2019): Implication of Action Research and Individual Performance Commitment Review Form (IPCRF) on the Performance Rating of Public Elementary and Secondary School Teachers in the Division of Laguna. Vol. 3 No. 2M (2019): *Ascendans Asia Journal of Multidisciplinary Research Abstracts*.
- Lenz, S. (2010). Exploring college students' perception of their coping styles. *LOGOS: A Journal of Undergraduate Research*, 3, 68-82. Retrieved from [http://www.missouristate.edu/assets/honors/Logos2010\\_text.pdf](http://www.missouristate.edu/assets/honors/Logos2010_text.pdf) in April 2022
- Linton, J. N. (2017). Institutional factors for supporting electronic learning communities. *Online Learning Journal* 21(1), 238-256.
- Loveless, E. (2020, July 31). Strategies for Building a Productive and Positive Learning Environment. <https://www.educationcorner.com/building-a-positive-learning-environment.html>
- Lumbre, Jose Andrey O. (2020). Coping Mechanisms of Novice Junior High School Mathematics Teachers. *European Journal of Education Studies*: ISSN: 2501-111. DOI 10.5281/zenodo.3660031
- Quimio, Jianzent & Angeles, Marisol & Mercado, Nessa & Obligar, Jojiemar. (2021). The challenges encountered by the students in online and modular distance learning modalities.
- Lapid, Jhanie R. (2021): Instructional Supervision under the New Normal In Education: Tenets Of Job-Embedded Learning: Website of Division of Bataan: [DepEdBataan.com](http://DepEdBataan.com) Publication:
- Makabenta, Sheila B. (2021). Challenges Met and Coping Mechanism of Teachers in the Implementation of Distance Learning. *International Journal Of Advanced Multidisciplinary Studies IJAMS* Volume 1, Issue 4, ISSN: 2782-893X

- Manalo, Franz & Villa, Jennilou. (2020). Secondary Teachers' Preparation, Challenges, and Coping Mechanism in the Pre - Implementation of Distance Learning in the New Normal. *International Multidisciplinary Research Journal*. 2. 144-154. 10.5281/zenodo.4072845.
- Graham. Linda J., Sonia L.J. White, Kathy Cologon, Robert C. Pianta,: Do teachers' years of experience make a difference in the quality of teaching?, *Teaching and Teacher Education*, Volume 96
- Mañalac, Melody C. (2021) The Challenges of Modular Distance Learning: The Official Website of Division of Bataan: DepEdBataan.com Publication [http://www.depedbataan.com/resources/4/the\\_challenges\\_of\\_modular\\_distance\\_learning.pdf](http://www.depedbataan.com/resources/4/the_challenges_of_modular_distance_learning.pdf)
- Meador, D. (2019, July 12). Retrieved from Thought Co.: <https://www.thoughtco.com/problems-for-teachers-that-limit-their-overall-effectiveness-3194679>
- Nagle, Y. K., & Sharma, U. (2018). Academic stress and coping mechanism among students: An Indian perspective. *Journal of Child Adolescence Psychology*, 2(1), 6-8.
- Nilson, L. B., & Goodson, L. A. (2018). In online teaching at its best: Merging instructional design with teaching and learning research. *Journal of Public Affairs Education*, 264.
- Okai-Ugbaje, S., Ardzejewska, K., & Imran, A. (2020). Readiness, roles, and responsibilities of stakeholders for sustainable mobile learning adoption in higher education. *Education Sciences* 10(3), 49.
- Pańkowsk, Małgorzata B.(2018): Business Autopoiesis Through Process Referencing: Handbook of Research on Autopoiesis and Self-Sustaining Processes for Organizational Success: DOI: 10.4018/978-1-7998-6713-5.ch011
- PEDIA (2020). What is coping mechanism? Pedia.com Retrieved on November 20,2021 <https://pediaa.com/what-is-coping-mechanism/>
- Penelope Kalogeropoulos et.al (2021): Learning Mathematics from Home During COVID-19: Insights From Two InquiryFocussed Primary Schools: *EURASIA Journal of Mathematics, Science and Technology Education*, 2021, 17(5), em1957: <https://doi.org/10.29333/ejmste/10830>
- Pertiwi, Citra & Rohaeti, Euis & Hidayat, Wahyu. (2020). The Students' Mathematical Problem-Solving Abilities, Self-Regulated Learning, And Vba Microsoft Word In New Normal: A Development Of Teaching Materials. *Infinity Journal*. 10. 17. 10.22460/infinity.v10i1.p17-30.\
- Philippine Star Article (2020): Math teachers: Bracing for the new normal September 23,2020):<https://www.philstar.com/other-sections/letters-to-theeditor/2020/09/23/2044408/math-teachers-bracing-new-normal>
- Putri, Irma Amelia. (2021). The Impact of Covid 19 on Students' 4C Thinking Ability in Mathematics Learning in the New Normal Era.
- Raines, D. A. (2011, January 24). Be Efficient, not busy: Time management strategies for onlineteaching. <https://www.facultyfocus.com/articles/online-education/be-efficient-not-busy-time-management-strategies-for-online-teaching/>
- Ramos, Dritas Therese T. (2020): Learning Modalities In The New Normal Education Setting: Sun Star Pampanga Press Reader-Digital Newspaper and Magazine <https://www.pressreader.com/philippines/sunstar-pampanga/20200805/281663962349944>
- Rasmitadila, Rusi Rusmiati Aliyyah & et al (2020). The Perceptions of Primary School Teachers of Online Learning during the COVID-19 Pandemic Period: A Case Study in Indonesia. *Journal of Ethnic and Cultural Studies* 2020, Vol. 7, No. 2, 90-109 <http://dx.doi.org/10.29333/ejecs/388>
- Renata Jonina. From Teaching Competences to Teaching Praxeologies: The Case of the Problem-Centred Education. *Education. University of Strasbourg*, 2017. English.fftel-02123588f:<https://tel.archives-ouvertes.fr/tel-02123588/document>
- Rex Education Article (2021): Digital, printed learning materials complement each other in new normal—Rex Education: ManilaStandard.net
- Roberto, Johnny & Madrigal, D.V. (2019). Teacher Quality in the Light of the Philippine Professional Standards for Teachers. *Philippine Social Science Journal*. 1. 67.
- Sagales, Jeaneth G., Gonzaga Edgar J., Gonzaga, Deborah T. and Marilyn Miranda (2020). Coping mechanisms of public teachers during the pandemic: an evaluative review?, *International Journal of Current Research*, 12, (09), 13836-13839. Retrieved on Nov. 20, 2021, <http://mail.journalcra.com/sites/default/files/issue-pdf/39805.pdf>
- Saykili, A. (2018). Distance education: Definitions, generations, key concepts, and future directions. *International Journal of Contemporary Educational Research*, 5(1), 2-17. <http://ijcer.net/en/download/article-file/498240>
- Selvanathan, M., Hussin, N. A. M., & Azazi, N. A. N. (2020). Students learning experiences during COVID-19: Work from home period in Malaysian higher learning institutions, *Teaching Public Administration*, 1-10. DOI:101177/0144739420977900

- Shale, D. 1988. Toward a reconceptualization of distance education. *The American Journal of Distance Education* 2 (3): 25-35.
- Sung, Y. T., Chang, K. E., & Liu, T. C. (2016). The effects of integrating mobile devices with teaching and learning on students' learning performance: A meta-analysis and research synthesis. *Computers&Education*,94, 252-275. <https://bit.ly/2Xnz0yH>
- Toquero, C. M. (2020). Challenges and Opportunities for Higher Education amid the COVID-19 Pandemic: The Philippine Context. *Pedagogical Research*, 5(4). <https://doi.org/10.29333/pr/7947>
- Treacy, Páraic, Prendergast, Mark & O'Meara, Niamh (2020). A "new normal": Teachers' experiences of the day-to-day impact of incentivizing the study of advanced mathematics. *Research in Mathematics Education*. <https://doi.org/10.1080/14794802.2019.1668832>
- Umar Abdullahi, et. al. "Stay-At-Home Order and Challenges of Online Learning Mathematics during Covid-19 Case in Nigeria." *IOSR Journal of Research & Method in Education (IOSR JRME)*, 10(4), (2020): pp. 10-17 <http://103.135.36.202/iosr-jrme/papers/Vol-10%20Issue-4/Series-6/B1004061017.pdf>
- Varkey Foundation Changing lives through Education. (2019). Retrieved from Parent-Teacher Partnership: The Need for Renewed Collaboration in the Time of COVID-19: <https://www.varkeyfoundation.org/what-we-do/research/parent-teacher-partnerships>
- Yang, Y., & Cornelius, L. F. (2004). Students' perceptions towards the quality of online education: A qualitative approach. *Association for Educational Communications and Technology*.<https://bit.ly/2XsiXPX>
- Wahyudi, W., Ambarwati, M., & Indarini, E. (2019). Development Of Web Game Learning Materials for Primary School Students. *Infinity Journal*, 8(2), 199-208. <https://doi.org/10.22460/infinity.v8i2.p199-208>
- Williamson, Ben, Eynon, Rebecca & Potter, John (2020). Pandemic politics, pedagogies and practices: digital technologies and distance education during the coronavirus emergency. *Learning, Media, and Technology*. Taylor Francis Online. Volume 45, 2020 - Issue 2. doi: Retrieved on November 11, 2021. 10.1080/17439884.2020.1761641.
- Winthrop, R. (2020) Top 10 risks and opportunities for education in the face of COVID-19. Brookings. Retrieved from <https://www.brookings.edu/blog/education-plus-development/2020/04/10/top-10-risks-and-opportunities-for-education-in-the-face-of-covid-19/>
- Yazon, A. D., Ang-Manaig, K., & Tesoro, J. F. B. (2018). Coping Mechanism and Academic Performance Among Filipino Undergraduate Students. *KnE Social Sciences*, 3(6), 30-42. <https://doi.org/10.18502/kss.v3i6.2372>
- Zhang, X. (2020). Thoughts on Large-Scale Long-Distance Web-Based Teaching in Colleges and Universities Under Novel Coronavirus Pneumonia Epidemic: A Case of Chengdu University. In *Proceedings of the 4th International Conference on Culture, Education and Economic Development of Modern Society (ICCESE 2020)* (pp. 1222-1225). Amsterdam: Atlantis Press.