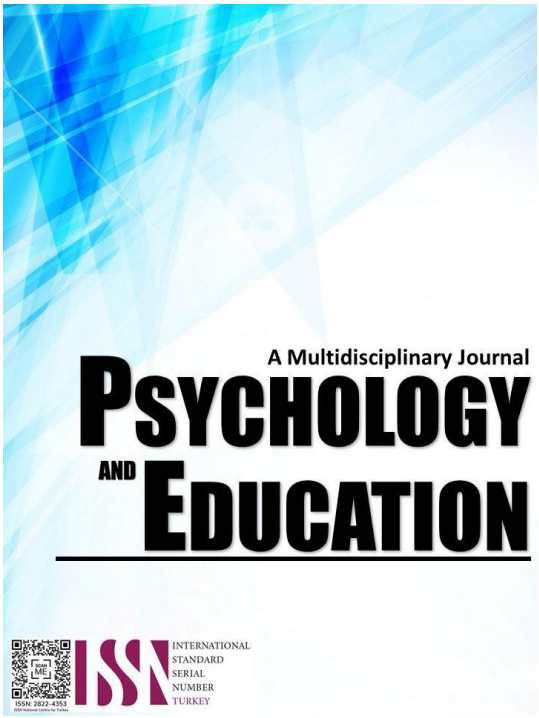
LEARNING CONTINUITY IN TIMES OF EMERGENCIES AND SUSPENSIONS OF IN-PERSON CLASSES: A METACOGNITION STUDY



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Research Article

Learning Continuity in Times of Emergencies and Suspensions of In-Person Classes: A Metacognition Study

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Abstract

This study determined the impacts of metacognition in terms of Metacognitive Knowledge and Metacognitive Regulation on the mastery level of Grade 5 learners in Eugenio Llido Rañada Elementary School in Mathematics, English, and Science in times of emergencies and suspensions of in-person classes. This quantitative study employed a descriptive-correlational research design. This study used probability sampling in the selection of the respondents. The instruments utilized were questionnaires, modules, and lesson plans. The study found that the level of metacognition of the Grade 5 learners in modular distance learning continuity modality is a High Level. The mastery level of the learners in Mathematics is Approaching Proficiency. Also, the mastery level of English is Approaching Proficiency. In addition, the mastery level of the in Science is Approaching Proficiency. However, the metacognition of the Grade 5 learners is not related to their mastery level in Mathematics, English, and Science. Finally, an enhanced learning continuity plan in strengthening the learning continuity of the learners was developed in the study.

Keywords: *metacognition, learning continuity, emergencies, suspensions, in-person classes, learners*

Introduction

Learning continuity modalities are the numerous strategies and tactics used to ensure that learners keep learning, especially in the face of disruptions of classes. These disruptions may be caused by a variety of factors, such as pandemics, natural and manmade disasters, economic challenges, and technology developments. The learning continuity approach is to maintain continual access to education and skill development regardless of calamities (Dayagbil, 2021). This is crucial to maintaining education's effectiveness and accessibility in a range of contexts. Employing innovative teaching strategies, educators and learners can continue to seek the growth of knowledge and skills in spite of challenges. This enables them to adapt to evolving conditions.

Along the way, a fundamental aspect of human cognition known as metacognition allows humans to understand, monitor, and regulate their own mental processes. Gaining knowledge and abilities in metacognition can improve a person's ability to learn, solve issues, and make judgments in a range of contexts. Metacognition is essential for learning and problem-solving in many areas, allows individuals to identify areas for improvement, better understand their learning style, and make the appropriate modifications (Abdelrahman, 2020).

In the Philippines, particularly in the Division of South Cotabato, schools are suspending the face-to-face classes and shift to alternative learning modalities because of specific reasons such as the heat index and weather forecast. Public schools mostly used the modular distance learning when these times come. In order not to disrupt the learning of the learners, teachers provide them modules that they can study at home. Hence, during the completion of the modules the learners may use their metacognitive abilities to answer it.

Department of Education's continuity plan is supported by a combination of national laws, executive orders, Department of Education policies that highlights resilience, adaptability, and the prioritization of education services during emergencies or disruptions. Chua (2019) discussed that the Republic Act Number 9155 or the Governance of Basic Education Act of 2001 mandated that in keeping with its mission of providing equal access to education, DepEd will make sure that high-quality instruction is delivered even during disruptive periods. Furthermore, Preña and Labayo (2024) reiterated that Executive Number 66 series of 2012 explained that Department of Education has the power and guidance to put policies in place that safeguard learners and maintain educational continuity in the event of disasters.

Hence, study on the topic is sparse in the context of elementary learners in the Division of South Cotabato prompting the proponent to pursue the study to fill the existing gap in the literature. At Eugenio Llido Rañada Elementary School, teachers shift to modular distance learning continuity modality if there is an announcement of emergency in-person class suspension. Teachers provide the learners modules for them to study and answer at home. Teachers rely on those modules to assess if the learners really understood, mastered and developed the competency. It is in vantage that the researcher intends to go deeper study. Teachers wonder about how do the learners learn the competency on their own. They tend to ask: do they answer it on their own? Do they really master the competency? Therefore, it is essential to look into how various metacognitive skills affect their mastery level in completing the given modules.

Research Questions

The study focused on the impact of the level of metacognition of Grade 5 learners of Eugenio Llido Rañada Elementary School to their mastery level in time of emergencies and suspensions of in-person classes. Specifically, this sought answers to the following questions:

1. What is the level of the metacognition of Grade 5 learners of Eugenio Llido Rañada Elementary School in modular distance learning continuity modality in terms of:

1.1. metacognitive knowledge; and
1.2. metacognitive regulation?
2. What is the mastery level of Grade 5 learners of Eugenio Llido Rañada Elementary School in modular distance learning continuity modality in:
2.1. mathematics;
2.2. english; and
2.3. science?
3. Is there a significant relationship between the level of metacognition of the Grade 5 learners and their mastery level in:
3.1. mathematics;
3.2. english; and
3.3. science?
4. Based on the findings of the study, what enhanced learning continuity plan can be developed?

Methodology

Research Design

This study employed the descriptive correlational research design to find out the relationship between the level of metacognition of Grade 5 learners and the mastery level in Mathematics, English and Science in times of emergencies and suspensions of in-person classes. According to McGurney and White (2009), research investigations that seek to both demonstrate the link between various variables and present static depictions of events employ the descriptive correlational design.

Furthermore, Fowler (2013) discussed that descriptive statistics are data that have been examined to highlight the fundamental characteristics of data that were gathered or utilized in a study. They provide researchers with summaries and other critical information regarding study samples and measures.

With correlational designs, it can predict results and highlight the link between variables. The correlation statistical test is used by researchers in correlational study designs to characterize and quantify the degree of connection between two or more variables or sets of scores. In this design, the researchers link two or more scores for each individual using the correlation statistic rather than trying to control or manipulate the variables as they would in an experiment (Creswell, 2016).

Respondents

The respondents of this study were the Grade 6 learners of Eugenio Llido Rañada Elementary School. All learners from each section will be selected.

The table presents the distribution of respondents per section.

Table 1. *Respondents of the Study*

Sections	*No. of Respondents*
Grade 5 Jupiter	46
Grade 5 Mercury	43
Total	89

Instrument

This study utilized a modified questionnaire to gather the needed quantitative information. In addition, this study also used modules and lesson plans for that specific day when there is emergency in-person class suspension. The questionnaire that was developed by Schraw & Dennison (1994) was used. The questionnaire entitled Metacognitive Awareness Inventory has a 52-item inventory. Items were classified into 8 subcomponents subsumed under 2 broader categories, knowledge of cognition and regulation of cognition. Data collected were interpreted using a five-point Likert scale with the following descriptions:

Quantitative Description	*Qualitative Description*
5	*Lubos na Sumasang-ayon* (Strongly Agree)
4	*Sumasang-ayon* (Agree)
3	*Katamtamang Sumasang-ayon* (Moderately Agree)
2	*Hindi Sumasang-ayon* (Disagree)
1	*Lubos na Hindi Sumasang-ayon* (Strongly Disagree)

Procedure

The data collection procedure of this study involved approval letters, consent forms, selection of respondents, administration of survey, conduct of interview, data treatment, and analysis. The researcher primarily sent a letter of request for approval to conduct the study to the South Cotabato Division addressed to the Schools Division Superintendent and Public Schools District Supervisor of Polomolok 1

District. When the request for approval was signed, the researcher sent a letter addressed to the school head of Eugenio Llido Rañada Elementary School.

Upon the approval of the consent, the researcher determined the respondents per section in corresponding sample size. When the respondents were identified, the researcher commenced the data collection procedure. During the suspension of in-person classes, the researcher gave and sent modules to the learners through printed modules or through group chat in Messenger. In the actual conduct of the study, the researcher gave questionnaires for the quantitative data. In order to facilitate efficient process, the researcher explained the objectives of this study and administered the questionnaire personally to the learners. The researcher facilitated the learners in answering the questionnaire. The researcher read the content of the questionnaire to the respondents.

After collecting the data from the survey, it was treated using a statistical computation. From the results and findings, a contingency plan was developed in order to propose actions that might help during emergency suspension of in-person classes.

Results and Discussion

This chapter deals with the results and discussion of the data gathered in this study. The various results are presented in the succeeding tables with corresponding discussions and explanations. It also answers specific problems stated in the previous chapter.

Level of Metacognition of Grade 5 learners

Metacognitive Knowledge

As shown in Table 2.1, the level of metacognitive knowledge is High Level (M=3.54). Anchored to the Self-regulated Theory, this suggests that learners are able to determine which strategies are most effective for them and modify their methods in response to task requirements. They are able to identify when a solution isn't working and switch to different strategies.

Accordingly, learners responded that knowing something helps them learn more effectively in High Level (M=4.08). They also replied that they know their intellectual advantages and disadvantages in High Level (M=3.90). In addition, they know what the teacher hopes they will learn in High Level (M=3.86).

On the other hand, they answered that having a strong memory for knowledge is in Moderately High (M=2.95). Hence, trying to employ tactics that have been effective in the past is in Moderately High (M=3.06). Furthermore, having a strong ability to arrange information is in Moderately High (M=3.14).

The results of this study support the ideas of Asy'ari et al. (2019), that out of the three experimental groups, their study revealed that Group A possesses a high degree of metacognitive knowledge. Therefore, the inquiry learning approach can be said to be successful in raising the metacognition awareness and knowledge of the three experimental groups of future teachers in this study.

This further affirms the studie s of Özçakmak et al. (2021) that the metacognitive knowledge of pre-service teachers is high level. They can successfully control their learning techniques and are typically conscious of their cognitive processes. This awareness includes abilities like organizing, observing, and assessing their educational journeys. Their ability to model successful learning practices for their learners makes this information essential for their future teaching job.

Table 2.1 *Level of Metacognitive Knowledge of Grade 5 learners*

Indicator	*WM*	*Description*
Metacognitive Knowledge		
1. Naiintindihan ko ang aking mga intelektwal na lakas at kahinaan.	3.90	High Level
2. Alam ko kung anong uri ng impormasyon ang pinakamahalagang matutunan.	3.81	High Level
3. Ako ay mahusay sa pag-aayos ng impormasyon.	3.14	Moderately High Level
4. Alam ko kung ano ang inaasahan ng guro na matutuhan ko.	3.86	High Level
5. Ako ay mahusay sa pag-alala ng impormasyon.	2.95	Moderately High Level
6. May kontrol ako sa kung gaano ako natuto.	3.47	Moderately High Level
7. Ako ay isang mahusay na hukom kung gaano ko naiintindihan ang isang bagay.	3.59	High Level
8. Mas natututo ako kapag interesado ako sa paksa.	3.62	High Level
9. Sinusubukan kong gumamit ng mga estratehiya na nagtrabaho sa nakaraan.	3.06	Moderately High Level
10. Mayroon akong tiyak na layunin para sa bawat diskarte na aking ginagamit.	3.48	Moderately High Level
11. Alam ko kung anong mga estratehiya ang ginagamit ko kapag nag-aaral ako.	3.80	High Level
12. Mas natututo ako kapag may alam ako tungkol sa paksa.	4.08	High Level
13. Gumagamit ako ng iba't ibang estratehiya sa pagkatuto depende sa	3.15	Moderately High Level

	sitwasyon.		
14.	*Maaari kong udyukan ang aking sarili na matuto kapag kailangan ko.*	3.47	Moderately High Level
15.	*Ginagamit ko ang aking mga intelektwal na lakas upang mabayaran ang aking mga kahinaan.*	3.77	High Level
16.	*Awtomatikong gumagamit ako ng mga nakakatulong na diskarte sa pag-aaral.*	3.71	High Level
17.	*Alam ko kung kailan magiging pinakamabisa ang bawat diskarte na gagamitin ko.*	3.27	Moderately High Level
	Composite Mean	3.54	High Level

***Legend**: 4.50– 5.00 Very High; 3.50 – 4.49 High Level; 2.50 – 3.49 Moderately High Level; 1.50 – 2.49 Low Level; 1.00 – 1.499 Very Low Level*

Metacognitive Regulation

The level of metacognitive regulation was found out to be in High Level (m=3.46). This implicates that learners actively and successfully maintain, manage, and reflect on their own thought and learning processes. They can improve their overall flexibility by applying the information and abilities they have acquired in one situation to another.

Table 2.2 shows that the learners attentively read the instructions before starting a work in High Level (M=4.27). Also, taking into account a number of potential solutions before responding is in High Level (M=3.98). In addition, learners consider multiple approaches to an issue and select the most effective one is in High Level (M=3.91).

Conversely, the data showed that pacing oneself to ensure sufficient time for learning is in Moderately High Level (M=2.70). Moreover, creating illustrations or diagrams to aid in their understanding while they study is in Moderately High Level (M=3.03). Furthermore, studying on a regular basis to assist them in comprehending significant relationships is in Moderately High Level (M=3.09).

Findings of this study are relevant to the study of Hashmi et al. (2019) which revealed that high level of teaching performance was demonstrated by aspiring teachers who scored highly on the Metacognitive Awareness Inventory and metacognitive regulation. They were adept at organizing and arranging their lesson plans, interacting more socially with their learners during practice sessions, employing a variety of instructional techniques, and managing their class time.

On the contrary, Bakar and Ismail (2020), revealed that metacognitive regulation skills of learners are in moderate level. This implies that learners' capacity to control and direct their own learning is average. By improving these abilities, learners can go from moderate to high levels of metacognitive control, which promotes more independence and effectiveness in their education.

Table 2.2 *Level of Metacognitive Regulation of Grade 5 learners*

Indicator		*WM*	*Description*
Metacognitive Knowledge			
1.	*Pinapabilis ko ang aking sarili habang nag-aaral upang magkaroon ng sapat na oras.*	2.70	Moderately High Level
2.	*Iniisip ko kung ano talaga ang kailangan kong matutunan.*	3.83	High Level
3.	*Nagtakda ako ng mga tiyak na layunin bago ako magsimula ng isang gawain.*	3.45	Moderately High Level
4.	*Tinatanong ko ang aking sarili tungkol sa bago ako magsimula.*	3.15	Moderately High Level
5.	*Nag-iisip ako ng ilang paraan upang malutas ang isang problema at piliin ang pinakamahusay.*	3.91	High Level
6.	*Binabasa kong mabuti ang mga tagubilin bago ako magsimula ng isang gawain.*	4.27	High Level
7.	*Inaayos ko ang aking oras upang maisakatuparan ang aking mga layunin.*	3.48	Moderately High Level
8.	*Pana-panahong tinatanong ko ang aking sarili kung natutugunan ko ang aking mga layunin.*	3.10	Moderately High Level
9.	*Isinasaalang-alang ko ang ilang alternatibo sa isang problema bago ako sumagot.*	3.98	High Level
10.	*Tinatanong ko ang aking sarili kung napag-isipan ko na ba ang lahat ng mga opsyon sa paglutas ng isang problema.*	3.31	Moderately High Level
11.	*Pana-panahon akong nagsusuri para matulungan akong maunawaan ang mahahalagang relasyon.*	3.09	Moderately High Level
12.	*Nakita ko ang aking sarili na sinusuri ang pagiging kapaki-pakinabang ng mga estratehiya habang nag-aaral ako.*	3.40	Moderately High Level
13.	*Nakita ko ang aking sarili na regular na humihinto upang suriin ang aking pag-unawa.*	3.37	Moderately High Level
14.	*Tinatanong ko ang aking sarili tungkol sa kung gaano ako kahusay habang nag-aaral ako ng bago.*	3.60	High Level
15.	*Nagdadahan-dahan ako kapag nakatagpo ako ng mahalagang impormasyon.*	3.80	High Level
16.	*Sinasadya kong itinuon ang aking atensyon sa mahahalagang impormasyon.*	3.5	High Level

17.	*Nakatuon ako sa kahulugan at kahalagahan ng bagong impormasyon.*	3.35	Moderately High Level
18.	*Gumagawa ako ng sarili kong mga halimbawa upang gawing mas makabuluhan ang impormasyon.*	3.17	Moderately High Level
19.	*Gumuhit ako ng mga larawan o diagram upang matulungan akong maunawaan habang nag-aaral.*	3.03	Moderately High Level
20.	*Sinusubukan kong isalin ang bagong impormasyon sa sarili kong mga salita.*	3.47	Moderately High Level
21.	*Ginagamit ko ang istruktura ng organisasyon ng teksto upang matulungan akong matuto.*	3.52	High Level
22.	*Tinatanong ko sa sarili ko kung may kaugnayan ba ang binabasa ko sa alam ko na.*	3.42	Moderately High Level
23.	*Sinisikap kong hatiin ang pag-aaral sa maliliit na hakbang.*	3.41	Moderately High Level
24.	*Nakatuon ako sa pangkalahatang kahulugan sa halip na mga detalye.*	3.14	Moderately High Level
25.	*Humihingi ako ng tulong sa iba kapag hindi ko naiintindihan ang isang bagay.*	3.85	High Level
26.	*Nagbabago ako ng mga estratehiya kapag hindi ko naiintindihan.*	3.24	Moderately High Level
27.	*Muli kong sinusuri ang aking mga pagpapalagay kapag nalilito ako.*	3.66	High Level
28.	*Huminto ako at bumabalik sa bagong impormasyon na hindi malinaw.*	3.44	Moderately High Level
29.	*Huminto ako at muling nagbabasa kapag nalilito ako.*	3.38	Moderately High Level
30.	*Alam ko kung gaano kahusay ang ginawa ko kapag natapos ko ang isang pagsusulit.*	3.38	Moderately High Level
31.	*Tinatanong ko ang aking sarili kung may mas madaling paraan upang gawin ang mga bagay pagkatapos kong matapos ang isang gawain.*	3.69	High Level
32.	*Ibinubuod ko ang aking natutunan pagkatapos kong matapos.*	3.28	Moderately High Level
33.	*Tinatanong ko ang aking sarili kung gaano ko kahusay nagagawa ang aking mga layunin kapag natapos na ako.*	3.48	Moderately High Level
34.	*Tinatanong ko ang aking sarili kung napag-isipan ko na ang lahat ng mga opsyon pagkatapos kong malutas ang isang problema.*	3.47	Moderately High Level
35.	*Tinatanong ko sa aking sarili kung natuto na ba ako sa abot ng aking makakaya kapag natapos ko ang isang gawain.*	3.78	High Level
	Composite Mean	3.46	Moderately High Level

***Legend**: 4.50– 5.00 Very High; 3.50 – 4.49 High Level; 2.50 – 3.49 Moderately High Level; 1.50 – 2.49 Low Level; 1.00 – 1.499 Very Low Level*

Level of Metacognition of Grade 5 learners

The level of metacognition of the Grade 5 learners was found to be in High Level (M=3.948). Based on the Self-Regulated Theory, this implies that learners are able to recognize when they are drifting off track and modify their methods or expectations accordingly. Learners may make thoughtful, fact-based judgments by reflecting on their own cognitive processes.

Results of this study are in conformity with the study of Nguyen et al. (2023) that revealed that the metacognition of Vietnam Military Medical University medical learners was likely to be high. A high score of metacognitive awareness could predict high academic performance. Being a military student, playing sports, reading books, and searching English documents were predictors of better metacognitive awareness.

However, Krisdianata and Kuswandono (2022) negate to the result of the study. They disclosed that high school learners displayed low metacognitive awareness and regulation when writing descriptive texts. Learners seemed unaware of metacognitive knowledge and metacognitive regulation.

Table 2.3 *Level of Metacognition of Grade 5 learners*

Indicator	*WM*	*Description*
Metacognitive Knowledge	3.54	High Level
Metacognitive Regulation	3.46	High Level
Composite Mean	3.50	High Level

***Legend**: 4.50– 5.00 Very High; 3.50 – 4.49 High Level; 2.50 – 3.49 Moderately High Level; 1.50 – 2.49 Low Level; 1.00 – 1.499 Very Low Level*

Mastery level of Grade 5 learners

Mathematics

The mastery level of Grade 5 learners of Eugenio Llido Rañada Elementary School in modular distance learning continuity modality in Mathematics is in Approaching Proficiency (M=11.87). Aligned with the Mastery Learning Theory, this implies that if gaps keep happening, learners may struggle to understand more complex mathematical topics. Although they can complete mathematical exercises and show a basic grasp, they might not be able to apply their abilities in new situations or have a deeper understanding. To pinpoint the specific areas in which learners struggle, regular assessment is essential.

Table 3.1 shows that the mastery level of the learners in Module 1 is in Approaching Proficiency (M=12.06). Also, in Module 2 the

mastery level of the learners is Approaching Proficiency (M=11.38). In addition, the mastery level of the learners in Module 3 is Approaching Proficiency (M=12.16).

Findings of the study affirms the study of Quiano and Avila (2023) that revealed that in applied mathematics, the learners' proficiency level was rated as average. It is noteworthy that the results revealed a significant improvement in the learners' ability to solve problems in probability and statistics. Enhancing their problem-solving and decision-making skills is a significant accomplishment for the said set of learners. Problem-solving fosters analytical thinking, where learners learn to break down problems into manageable parts, identify patterns, and explore solutions systematically.

On the contrary, the ideas and presentations of Kandeel (2021) showed that learners who began kindergarten when they were three or four years old do better than others and have high levels of mathematical competency. In order to enhance mathematics competence levels and get strong scores on international math examinations like the PISA test, it is thus better to start kindergarten for kids no older than three or four. While starting kindergarten at three or four years old can be advantageous for mathematics competency and other cognitive skills, the focus should be on creating high-quality, balanced, and inclusive early education programs rather than simply lowering the starting age.

Table 3.1 *Mastery level of Grade 5 learners in Mathematics*

Indicator	*WM*	*Description*
Module 1	12.06	Approaching Proficiency
Module 2	11.38	Approaching Proficiency
Module 3	12.16	Approaching Proficiency
Composite Mean	11.87	Approaching Proficiency

Legend: *0-4 – Beginning; 5-8 – Developing ; 9-12- Approaching Proficiency; 13-16 – Proficient1; 7 – 20 – Advanced*

English

The mastery level of Grade 5 learners of Eugenio Llido Rañada Elementary School in modular distance learning continuity modality in English is in Approaching Proficiency (M=7.79). Anchored to the Mastery Learning Theory, this implies that learners can manage activities requiring fundamental vocabulary, grammar use, and comprehension because they have a fundamental understanding of English. They could also be able to articulate concepts more clearly, although they still make mistakes from time to time.

Table 3.2 shows that the mastery level of the learners in Module 1 is in Developing (M=6.72). Also, in Module 2 the mastery level of the learners is Approaching Proficiency (M=7.87). In addition, the mastery level of the learners in Module 3 is Approaching Proficiency (M=8.78).

Results of this study are similar to the findings of Dipay (2023) that learners' writing abilities in the first module are at a satisfactory level. This suggests that the learners can do their write-up independently and with little assistance from the instructor.

Furthermore, English-speaking skills among senior high school learners found outstanding ratings in areas like grammar, vocabulary, pronunciation, and interaction. However, it recommended consistent remedial programs to sustain and improve these skills over time (Eslit & Valderama, 2023).

Table 3.2 *Mastery level of Grade 5 learners in English*

Indicator	*WM*	*Description*
Module 1	12.06	Approaching Proficiency
Module 2	11.38	Approaching Proficiency
Module 3	12.16	Approaching Proficiency
Composite Mean	11.87	Approaching Proficiency

Legend: *0-4 – Beginning; 5-8 – Developing; 9-12- Approaching Proficiency; 13-16 – Proficient1; 7 – 20 – Advanced*

Science

The mastery level of Grade 5 learners of Eugenio Llido Rañada Elementary School in modular distance learning continuity modality in Science is in Approaching Proficiency (M=12.81). Based on the Mastery Learning Theory, this implies that learners have a relatively small understanding of scientific ideas, which forms the basis for deeper thought and skill development. This suggests room for improvement with further assistance.

Table 3.3 shows that the mastery level of the learners in Module 1 is in Proficient (M=14.38). Also, in Module 2 the mastery level of the learners is Approaching Proficiency (M=11.44). In addition, the mastery level of the learners in Module 3 is Approaching Proficiency (M=12.59).

Findings of the study are consistent and relevant to the ideas of Quesea and Elisa (2020) that the learners' performance fell into the Approaching Proficiency level in terms of their scientific literacy knowledge and skills, including critical thinking and decision-making. They still need to work on their critical thinking abilities in order to increase their understanding of scientific concepts, even though their proficiency level was Approaching Proficiency.

The level of mastery of learners in Chemistry is in Average Mastery (Ely, 2019). When learners in Chemistry are classified as having Average Mastery, it suggests that their level of understanding and skills falls within a middle range. They possess a reasonable grasp of fundamental concepts but may struggle with more advanced or complex topics.

Table 3.3 *Mastery level of Grade 5 learners in Science*

Indicator	*WM*	*Description*
Module 1	14.38	Proficiency
Module 2	11.44	Approaching Proficiency
Module 3	12.59	Approaching Proficiency
Composite Mean	12.81	Approaching Proficiency

Legend: *0-4 – Beginning; 5-8 – Developing; 9-12- Approaching Proficiency; 13-16 – Proficient1; 7 – 20 – Advanced*

Relationship between the level of metacognition and Mastery Level in Mathematics

Apart from looking into the level of metacognition of the learners in terms of Metacognitive Knowledge and Metacognitive Regulation and the mastery level of Grade 5 learners in modular distance learning continuity modality in Mathematics, English and Science, this study also attempted to investigate the relationship between the level of metacognition of the learners and the mastery level of Grade 5 learners in modular distance learning continuity modality in Mathematics, English and Science.

Table 4.1 shows the significance of the relationship between the level of metacognition of the learners and the mastery level of Grade 5 learners in modular distance learning continuity modality in Mathematics. The findings reveal no significant relationship between the level of metacognition of the learners and the mastery level of Grade 5 learners in modular distance learning continuity modality in Mathematics.

Since the p-value (0.2319) is greater than 0.05 there is no significant relationship between the level of metacognition of the learners and the mastery level of Grade 5 learners in modular distance learning continuity modality in Mathematics. The correlation coefficient of -0.1284 indicates that there is a negative very weak relationship between the two variables.

Findings of the study are consistent with the study of Chytry et al. (2020), which revealed that there is no correlation between metacognition and mathematics because they are completely independent of one another. Mathematical intelligence and metacognition were discovered to be two distinct traits. The findings indicate that there is no correlation between mathematical intelligence and metacognitive understanding, which are two distinct realms.

Moreover, the significant relations between metacognitive knowledge over time confirmed that both concepts contributed to increases in mathematics performance (Desoete & De Craene, 2019). Hence, metacognition contributes to improving mathematical abilities. Learners may become more proficient learners and solve mathematical problems more quickly and accurately as they get more conscious of their own thought processes.

Table 4.1 *Relationship between the level of metacognition and the Mastery Level in Mathematics*

	Mean	*Correlation Coefficient (r)*	*Degree of Relationship*	*p-value*	*Remarks*
Level of metacognition	3.50	-0.1284	Negative Very Weak	0.2319	Not Significant
Mastery level in Mathematics	11.87				

** Tested at 0.05 level of significance.*

English

Table 4.2 shows the significance of the relationship between the level of metacognition of the learners and the mastery level of Grade 5 learners in modular distance learning continuity modality in English. The findings reveal no significant relationship between the level of metacognition of the learners and the mastery level of Grade 5 learners in modular distance learning continuity modality in English.

Since the p-value (0.3964) is greater than 0.05 there is no significant relationship between the level of metacognition of the learners and the mastery level of Grade 5 learners in modular distance learning continuity modality in English. The correlation coefficient of -0.0911 indicates that there is a negative very weak relationship between the two variables.

Results of this study conform to the presentations of Darjito (2019) that the learners' academic English reading comprehension and metacognitive reading awareness do not significantly correlate. There has been little research on the actual metacognitive reading awareness that learners employ and how it relates to their reading comprehension, even if learners may have employed some metacognitive awareness for reading methods to comprehend the assigned readings.

On the contrary, Teng and Yang (2023) argued that there was a significant and positive correlation between metacognition and English learning. It implies that that learners who can successfully regulate their learning techniques and are more conscious of their learning style typically do better when learning English. This highlights how crucial it is to teach metacognitive techniques like goal-setting, self-monitoring, and progress reflection in order to enhance language learning.

Table 4.2 *Relationship between the level of metacognition of the Grade 5 learners and their mastery level in English*

	Mean	*Correlation Coefficient (r)*	*Degree of Relationship*	*p-value*	*Remarks*
Level of metacognition	3.50	-0.0911	Negative Very Weak	0.3962	Not Significant
Mastery level in English	7.79				

** Tested at 0.05 level of significance.*

Science

Table 4.3 shows the significance of the relationship between the level of metacognition of the learners and the mastery level of Grade 5 learners in modular distance learning continuity modality in Science. The findings reveal no significant relationship between the level of metacognition of the learners and the mastery level of Grade 5 learners in modular distance learning continuity modality in Science.

Since the p-value (0.1009) is greater than 0.05 there is no significant relationship between the level of metacognition of the learners and the mastery level of Grade 5 learners in modular distance learning continuity modality in English. The correlation coefficient of -0.1751 indicates that there is a negative very weak relationship between the two variables.

Findings of this study are in corollary to the ideas of Acar (2024) which found out that both low-achieving and high-achieving schools' strategies for teaching science showed negative and significant effects on cognitive control and knowledge. Both metacognitive knowledge and metacognitive regulation are unrelated to learners' success in science, regardless of whether they attend high- or low-achieving schools.

Hence, the understanding of science teachers in regards to metacognition in science teaching is important and gives a positive impact towards teaching and learning in primary science teaching (Sulaiman et al., 2021). A thorough grasp of metacognition gives science instructors the means to improve their instruction while also enabling learners to take charge of their education, which eventually results in a more successful and fulfilling scientific curriculum in elementary schools.

Table 4.3 *Relationship between the level of metacognition of the Grade 5 learners and their mastery level in Science*

	Mean	*Correlation Coefficient (r)*	*Degree of Relationship*	*p-value*	*Remarks*
Level of metacognition	3.50	-0.1751	Negative Very Weak	0.1009	Not Significant
Mastery level in Science	12.81				

** Tested at 0.05 level of significance.*

ENHANCED LEARNING CONTINUITY PLAN

A. Introduction

Eugenio Llido Rañada Elementary School, formerly Polomolok Cenral Elementary School Annex was established in 1982. Its existence came from the conceived ideas of Purok Nasidlangan officials headed by Purok Chairman Jesus Rasul who passed a resolution to the Schools Division of Superintendent through channel to the District Supervisor dated February 10,1978. It is part of Polomolok 1 District, South Cotabato Division. This school is situated at Brgy. Poblacion, Polomolok, South Cotabato with map coordinates 6°13'07.9"N 125°04'10.3"E. Eugenio Llido Rañada Elementary School offers Kindergarten-Grade 6 education. Presently, the school has 22 teachers serving more or less 500 learners every year.

One important alternative educational strategy that is intended to maintain learning continuity in the face of possible disruptions brought on by unanticipated dangers is modular distance learning. This teaching strategy supports learners' intellectual development by combining self-study modules with recurring tests. But there are risks associated with putting modular distance learning into practice, including natural disasters, technical issues, and social or economic variables that could make it less successful.

In this study, it was found out that learners lack a strong memory for knowledge and a strong ability to arrange information. They also need to try to employ tactics that have been effective in the past. Learners are moderately pacing oneself to ensure sufficient time for learning. They sometimes create illustrations or diagrams to aid in their understanding while they study. Lastly, they moderately study on a regular basis to assist them in comprehending significant relationships.

In addition, in Mathematics, learners got a mastery level of Approaching Proficiency in the competency solving routine involving multiplication with or without addition or subtraction of decimals and whole numbers using appropriate problem- solving strategies and tools. Also, learners scored a mastery level of Developing in the competency in English which is identifying point of view. While in Science, their mastery level is in Approaching Proficiency for the competency reproductive parts of a flower and their functions.

In the worst-case scenario, characterized by natural disasters, health hazards, and social and economic hazards, the consequences escalate to a catastrophic level. With five fatalities, ten missing individuals, and twenty injured learners, the school would be overwhelmed by the scale of the disaster. The loss of life, injuries, and trauma experienced by learners, school personnel, and families would be profound, necessitating a coordinated and sustained response effort from emergency services, local authorities, and

humanitarian organizations.

Overall, these scenarios highlight the critical importance of modular distance learning preparedness, including strong contingency plans, regular drills, and outlay in resilient infrastructure, to mitigate the impact of seismic events and safeguard the lives and well-being of everyone within the school community.

B. Objectives

The objectives of the enhanced learning continuity plan are as follows:

1. To prepare instructional materials ready to use during suspension of classes;

2. To prepare the needed learning materials to help the learners have a strong memory for knowledge, a strong ability to arrange information, and to employ tactics that have been effective in the past;

3. To devise learning strategies to assist the learners in creating illustrations or diagrams to aid in their understanding while they study;

4. To compose additional learning materials that may help learners as they study on their own about the competencies such as solving routine involving multiplication with or without addition or subtraction of decimals and whole numbers using appropriate problem- solving strategies and tools, identifying point of view, and reproductive parts of a flower and their functions.

C. Distribution and Retrieval of Learning Materials in times of Emergencies and Suspensions of In-person Classes

First thing to do is the planning and preparation, the school may identify the required learning materials for each subject or course for the whole school year. Then, determine if additional resources are necessary for remote learning.

Second, distribution of learning materials, the school may gather physical and digital copies of textbooks, workbooks, modules, and other resources. Ensure materials align with curriculum standards and are accessible to all learners. Organize and package materials based on class or student levels. Convert physical materials to digital formats where feasible. Maintain a record of distributed materials to avoid duplication or shortages.

Third, distribution process, the school may create a staggered schedule for learners or guardians to collect materials to avoid overcrowding. For Physical Distribution, there should have points in schools, drop-off locations, or delivery to homes. For Digital Distribution, upload materials to online platforms or share via email, messenger, or school apps. Then, inform parents and learners about the collection process, schedule, and emergency protocols.

Fourth, monitoring and support, the school may monitor the status of distributed materials and ensure all learners have access. Provide hotlines, email support, or virtual meetings to assist with accessing materials. Address technical issues for digital platforms.

Fifth, retrieval of learning materials, the school may organize drop-off points or times for returning physical materials, ensuring safety protocols are followed. Check the condition of returned materials and document their retrieval. Reintegrate usable materials into the inventory for future use.

Sixth, feedbacking about the performance of the learners in times of emergencies and suspensions of in-person classes. Teachers may hold a conference to tackle about the performance of the leaners. They may talk about the strengths and weaknesses of the learners and other solutions that may help the learners in mastering the competencies.

Lastly, the post-emergency evaluation, the school collect feedback from learners, parents, and staff about the efficiency of the process. Then, identify gaps and improve future emergency protocols.

Conclusions

Based on the results of the study, the following conclusions were drawn. The level of metacognition of the Grade 5 learners was found to be in High Level. It can be concluded that learners are able to recognize when they are drifting off track and modify their methods or expectations accordingly. Learners may make thoughtful, fact-based judgments by reflecting on their own cognitive processes. The mastery level of Grade 5 learners of Eugenio Llido Rañada Elementary School in modular distance learning continuity modality in Mathematics is in Approaching Proficiency. It can be concluded that if gaps keep happening, learners may struggle to understand more complex mathematical topics. Although they can complete mathematical exercises and show a basic grasp, they might not be able to apply their abilities in new situations or have a deeper understanding. To pinpoint the specific areas in which learners struggle, regular assessment is essential. The mastery level of Grade 5 learners of Eugenio Llido Rañada Elementary School in modular distance learning continuity modality in English is in Approaching Proficiency. It can be concluded that learners can manage activities requiring fundamental vocabulary, grammar use, and comprehension because they have a fundamental understanding of English. They could also be able to articulate concepts more clearly, although they still make mistakes from time to time. The mastery level of Grade 5

learners of Eugenio Llido Rañada Elementary School in modular distance learning continuity modality in Science is in Approaching Proficiency. It can be concluded that learners have a relatively small understanding of scientific ideas, which forms the basis for deeper thought and skill development. This suggests room for improvement with further assistance. There is no significant relationship between the level of metacognition of the learners and the mastery level of Grade 5 learners in modular distance learning continuity modality. It can be concluded that learners are depending on factors other than their capacity to manage and monitor their own learning. Even though this might not have a negative impact on academic performance right away, it does emphasize the necessity of initiatives that promote metacognitive abilities for long-term academic and personal development. An enhanced learning continuity plan for modular distance learning in times of emergencies and suspensions of in-person classes was developed. This may help in the learning continuity of the learners.

Based on the findings and conclusions of the study, the following recommendations are hereby given. Teachers may provide instruction on how to organize, track, and assess one's own learning. Encourage learners to consider how they think when they solve problems. To improve mastery level in Mathematics, English, and Science, teachers may encourage learners to solve problems, participate in conversations, and do practical experiments in order to raise their competence levels in Mathematics, English, and Science. Before moving on, develop core abilities by breaking down difficult subjects into smaller, more accessible steps. Give prompt, helpful criticism to help direct development. To effectively relate metacognition and mastery level of learners, teachers may help learners regularly assess their understanding of concepts and adjust their strategies, enhancing self-regulation in all subjects. For continuity of learning in times of emergency suspension of in-person classes, teachers may provide learners with alternative materials, printed copies or online resources, in case of technical issues. Establish reliable means for learners to reach teachers by email, phone, or messaging platforms. Offer extended submission deadlines for learners facing difficulties in completing modules on time. School administrators should conduct training on how to navigate the learning platform and access learning materials effectively. Future researchers may investigate more on the delivery of instruction most especially during emergency suspension of in-person classes so that continuity of learning will not be interrupted. Also, they should seek answers to how or if metacognition can help learners improve their own learning.

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