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Unveiling the Nexus: Most Essential Learning Competencies and Critical Thinking Skills of Students

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Abstract. Knowledge and critical thinking (CT) play vital roles and serve as foundational pillars for effective learning and intellectual development. This study aimed to identify the relationship between students' knowledge of the Most Essential Learning Competencies (MELCs) in English 7 and their CT skills. The descriptive-correlational approach was used, and survey questionnaires were utilized as the main data collection tool. Using the systematic sampling technique, 145 students from two secondary schools in Zamboanguita District 2 were selected as the respondents for this study. The results showed that the students' level of knowledge of the MELCs is predominantly categorized as "outstanding." The data also reflects that the students generally perceive a "somewhat high" extent of CT skills in the following areas: analyzing relevance, evaluating sources, and using evidence to formulate an argument. Additionally, a significant and strong correlation is evident between the level of knowledge of the MELCs and the previously mentioned constructs of CT skills. In conclusion, students' knowledge of the MELCs significantly influences their perception of the MELCs' importance in enhancing their CT skills. When students have a thorough grasp of a particular competency, they are more inclined to utilize it in their critical thinking processes. Hence, it is recommended to consider alternative research methods, such as longitudinal studies, to track students' development of CT skills over time, as they gain deeper knowledge of the MELCs. Furthermore, employing qualitative research approaches to delve deeper into the connections between knowledge of the MELCs and CT skills could be beneficial.

Keywords: Level of knowledge; CT skills; Critical thinking skills; MELCs; English 7; Academic achievement; Descriptive correlational.

1.0 Introduction

In the vast realm of human intellectual pursuit, knowledge stands as the cornerstone upon which progress and understanding are built. Educators and philosophers alike agree that knowledge serves as a tool that cultivates CT skills (Yuldashevna, 2019). Knowledge is a complex topic, with definitions ranging from the simplest to the most complicated. According to Oxford Languages (2023), knowledge refers to the accumulation of facts, information, and skills obtained through both experience and education. It is an understanding, whether in theory or practice, of a particular subject. Meanwhile, CT is a "cognitive activity, associated with using the mind" (Cottrell, 2017). This involves subskills such as observation, analysis, interpretation, explanation, evaluation, and metacognition (Indrasiene et al., 2021; Sato, 2021).

In 2020, when COVID-19 shook the entire world and temporarily halted education almost globally, the educational system in the Philippines suffered greatly due to the change in the mode of learning (Gunaban & Panolong, 2021). Within this span of time, the learning of a number of learners and the development of their CT skills have been impaired due to the absence of teacher facilitation and the major adjustment from the traditional

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in-person instruction to virtual instruction. To address this concern, the Department of Education (DepEd) developed the Basic Education Learning Continuity Plan (BE-LCP) through DepEd Order No. 12, s. 2020. As part of this effort, the plan identified the MELCs in all subject areas. The MELCs, designed to respond to the changes in the educational landscape due to the global crisis, guides the curriculum and instruction in both public and private schools. It lists the competencies that are integral for lifelong learning, where instruction and learning activities are tailored to meet the demands of distance learning while making the learning experience worthwhile for pupils and students (DepEd Order No. 12, s. 2020).

While recent studies, such that of Ravina and Mendoza (2021), Gunaban and Panolong (2021), and Soliman and Marasigan (2021), have explored the effectiveness of MELCs distribution and MELCs assessment, the topic on determining the relationship between learners' knowledge about the individual competencies and their CT skills remains unexplored. This gap can be attributed to the novelty of the MELCs, especially that it has only been three years since the MELCs is officially used as a basis for basic instruction in schools. Hence, this set off an opportunity for the researcher to investigate the students' level of knowledge on the individual competencies in English 7 and how it is related to their CT skills.

With this in mind, exploring where the learners stand in terms of their knowledge about the individual competencies in English 7 will enable administrators and teachers to provide specific interventions that will be helpful as they proceed to higher level. Moreover, strategic interventions are best given at an early stage in their secondary education as these will serve as a strong foundation to establish and develop CT skills later on. Thus, the researcher is compelled to investigate this topic since it has been observed, and studies have proven, that learners lack critical analysis and need to develop CT skills (Nuryanti, Diantoro, & Zubaidah, 2018; Utami et al., 2018; Hasanah, Sunarno, & Prayitno, 2020).

The main objective of this study is to identify a relationship between students' knowledge on the MELCs in English 7 and their CT skills. Moreover, it seeks to answer the following research questions:

a. What is students' level of knowledge on the MELCs in English 7?
b. To what extent is the CT skills of students in terms of the following areas: Analyzing relevance; Evaluating sources, and Using evidence to formulate an argument?
c. Is there a significant relationship between students' level of knowledge on the MELCs and the extent of their CT skills?

2.0 Methodology

2.1 Research Design

The research adopted a descriptive-correlational approach by Creswell. It is descriptive because it identified: 1) students' level of knowledge on the MELCs; and 2) the extent of students' CT skills. Correspondingly, it is correlational because it determined a significant relationship between the independent variable, which is the level of knowledge on the MELCs; and the dependent variables, which are the key areas in CT, namely, analyzing relevance, evaluating sources, and using evidence to formulate an argument.

2.2 Research Locale

The investigation was carried out within two secondary schools of Zamboanguita District 2 in the Schools Division of Negros Oriental. The first school is a small institution situated in the town proper of Zamboanguita; while the second school is located in Salngan, a sitio of barangay Mayabon, just a few kilometers away from the town proper. These schools were selected primarily because they are the only public secondary schools in the said district.

2.3 Research Participants

Using the systematic sampling technique, 145 students were selected to be the participants for this study. They were the Grade 8 students for academic year 2023–2024. The decision to select Grade 8 students instead of Grade 7 students was based on the premise that the Grade 8 students have already been introduced to the English 7 competencies. Choosing the current Grade 7 students as the participants would limit the researcher in terms of students' exposure to all the competencies in English 7, considering that the academic year is only in its third quarter.

2.4 Research Instrument

The MELCs, identified by DepEd to be used for school year 2021–2022, were utilized. The individual competencies in English 7 served as the basis in identifying the students' level of knowledge on the MELCs in this learning area and level. A survey questionnaire was also used. To verify the reliability of the questionnaire items, a pilot testing was carried out to 30 students. The Cronbach's Alpha coefficients are as follows: a) level of knowledge=0.949; b) analyzing relevance=0.848; c) evaluating sources=0.760; d) using evidence to formulate an argument=0.701.

2.5 Data Gathering Procedure

Beginning the research process involved conducting a pilot testing involving 30 students. Upon receiving approval for the request, the testing promptly followed. The gathered data underwent critical data processing by a statistician. The results were tallied in a spreadsheet, and the reliability was ensured using the Cronbach's Alpha coefficient. Subsequently, with confirmed item reliability, the researcher proceeded to the actual data gathering phase. A formal written consent, along with approved endorsement letters from proper authorities, was extended to the principals of two secondary schools to initiate data gathering from the identified target respondents within these schools. Upon approval, the process of data gathering and retrieval came about. To maintain the integrity of the research, all collected data were diligently forwarded to the statistician for meticulous data treatment and initial analysis.

2.6 Data Analysis

The tools used in analyzing the data were weighted mean, mean, and Spearman's Rank Correlation Coefficient. The tools used by the researcher in analyzing the data were as follows:

Weighted mean. This was used in identifying the extent of students' CT skills in terms of analyzing relevance, evaluating sources, and using evidence to formulate an argument.
Mean. This was used in getting the students' level of knowledge on the MELCs.
Spearman's Rank Correlation Coefficient. This was utilized to identify the degree of relationship between students' level of knowledge on the MELCs and the extent of their CT skills.

2.7 Ethical Considerations

Utmost ethical standards were maintained throughout the study. A disclosure statement containing the purpose of the study, the participant's voluntary involvement, the right to withdraw participation at any time without penalty, and the assurance that all collected data were exclusively utilized for the study's intended purpose was provided in the survey questionnaire. To maintain anonymity, the survey form excluded fields for names. Additionally, official permission from relevant authorities was obtained before initiating the study.

3.0 Results and Discussion

3.1 Level of Knowledge on the MELCs

Table 1. Level of knowledge on the MELCs (n = 145)

	HOW WELL DO YOU KNOW EACH COMPETENCY?	$\bar{x}$	SD	VD
1.	Cite evidence to support a general statement.	92.29	6.22	O
2.	Use listening strategies for short texts listened to.	90.91	5.66	O
3.	Research a topic with support using newspapers, website, and print-based material.	90.90	5.91	O
4.	Decode information from linear to nonlinear texts and vice versa.	90.83	6.10	O
5.	Identify the genre and characteristics of different text types such as movies, news, documentaries, etc.	90.77	5.70	O
6.	Distinguish features of academic writing.	90.74	5.95	O
7.	Capture main ideas from a text into a short summary.	90.65	6.20	O
8.	Provide alternative words or phrases that complete an analogy.	90.63	5.73	O
9.	Speak and act appropriately when sharing factual or personal stories.	90.54	6.11	O
10.	Look up a specific topic using a search engine.	90.43	5.98	O
11.	Present insightful, stimulating, and thought-provoking questions during public forums or panel discussions.	90.38	5.97	O
12.	Use phrases, clauses, and sentences correctly and purposely.	90.35	5.86	O
13.	Compose an informative essay.	90.33	6.78	O
14.	Use the right multimedia resources accurately when recounting events in personal or factual narratives.	90.31	6.33	O
15.	Confirm the integrity and correctness of the material viewed.	90.28	6.39	O

16.	Use both active and passive voice appropriately in different situations.	90.23	6.12	O
17.	Express agreement or disagreement of a text.	90.21	5.88	O
18.	Find the importance of working together and being responsible through Philippine literature.	90.10	6.12	O
19.	Discover literary conflicts and the need to resolve them in nonviolent ways.	90.09	6.37	O
20.	Navigate a website using headings, links, etc.	90.04	5.64	O
21.	Use different methods to communicate effectively with others.	90.03	55.77	O
22.	Assess the significance of ideas discussed in the text listened to.	90.02	6.45	O
23.	Use the past and past perfect tenses appropriately in various situations.	90.01	6.05	O
24.	Apply analogy to express a point.	89.91	6.24	O
25.	Use scanning, skimming, and close reading for various purposes.	89.61	6.59	O
26.	Employ direct and reported speech across different situations.	89.57	6.08	O
27.	Illustrate how various factors such as culture, history, environment, or others can impact a selection.	89.54	6.07	O
28.	Explore how literature can affirm one's individual identity.	89.48	6.24	VS
29.	Share personal beliefs/convictions based on a viewed material.	88.77	6.43	VS
OVERALL		**90.27**	**6.10**	**O**

Legend:	**Scale**	**Verbal Description**
	90% – 100%	Outstanding
	85% – 89%	Very Satisfactory
	80% – 84%	Satisfactory
	75% – 79%	Fairly Satisfactory

Table 1 specifically addresses the research question: "What is students' level of knowledge on the MELCs in English 7?" According to the displayed results, the students' level of knowledge on the MELCs is predominantly categorized as "outstanding" and "very satisfactory," with weighted mean values ranging from 88.77 to 92.29 (see Table 1). This signifies that students have developed basic knowledge and core understanding about each competency and can independently translate these understandings into realistic performance tasks. The discovery here goes hand in hand with Robert Gagné's Hierarchical Theory of Instruction (1985), which suggests that intellectual skills grow by building on existing knowledge and incorporating new information. This emphasizes that students should see how these skills connect their previous knowledge with their current learning and how they can use them in real-life situations.

Significantly, the data reveal that among the listed competencies, students have predominantly achieved a foundational understanding in citing evidence to support a general statement. This indicates that students have a strong grasp of the foundational aspects of constructing arguments and supporting claims with relevant information. It also suggests that they likely understand the importance of evidence-based reasoning and critical thinking in academic context. According to Rogers (2023), citing evidence involves providing instances from a text to demonstrate the validity and accuracy of the information. From this definition, the result indicates that the students have acquired a solid understanding of finding evidences in texts to support a claim or understand the main idea. While this holds true for some learners, various studies, including those by Sitohang et al. (2021) and Butterfuss et al. (2023) expose that some learners struggle with identifying main ideas. This difficulty is attributed to factors like laziness, limited vocabulary knowledge, and poor reading strategies.

Moreover, students demonstrate notable proficiency in several other competencies. One of these is utilizing listening strategies, which attained the second highest position. This proficiency implies that students are likely able to comprehend and process spoken information efficiently. It also indicates that they understand the importance of listening as a fundamental aspect of communication and learning. Listening strategies come in different forms, which aid in the learning process. The study of Afriyuninda and Oktaviani (2021) specifically highlights the positive impact of listening to English songs on enhancing listening skills and correct pronunciation. According to their findings, incorporating listening strategies like engaging with English songs has been proven beneficial in enhancing students' listening abilities (Simamora & Oktaviani, 2020, cited in Afriyuninda & Oktaviani, 2021).

Unexpectedly, grammar-related competencies, such as using phrases, clauses, and sentences; using passive and active voice; using the past and past perfect tenses; using direct and reported speech; and composing an informative essay, obtained "outstanding" evaluations despite studies suggesting that developing the macro skill of writing is recognized as one of the more difficult areas in English teaching. This assertion is supported by Moses and Mohamad (2019) and Harun et al. (2017) in their investigation about writing skills within the English as a Second Language (ESL) contexts. Their researches reveal that enhancing students' writing abilities is a

significant challenge for instructors of ESL in many educational institutions today. Nonetheless, writing has consistently posed a serious challenge for students as they learn the English language, particularly in elementary schools. Additionally, Baron (2019) identified a concerning issue among Grade 9 students at Nagbalaye High School regarding subject-verb agreement. The findings reveal a remarkable frequency of errors, indicating a moderately extensive occurrence of grammar mistakes, particularly in the area of subject-verb agreement.

Although exploring how literature can affirm one's individual identity is positioned lower in the ranking, it still received a descriptive rating of "very satisfactory." This suggests that, even though it is somewhat lower on the scale, students have shown a commendable level of competence in this particular area. Notably, Altun (2023) claims that literature has played a significant role in shaping both individual and cultural backgrounds. It encompasses the complexities of human identity by portraying individuals' encounters, cultural heritages, and personal development. By offering diverse viewpoints and stories, literature allows readers to attain a deeper understanding of their own identity.

With all these perspectives put together, it is asserted that the implementation of the MELCs has been instrumental in fostering the foundational knowledge and understanding of each competency among students. This assertion finds reinforcement in the work of Zalun (2023), who identified a strong correlation between the extent of MELCs utilization and the corresponding level of learning development. It is postulated that the effective incorporation of the MELCs has played a crucial role in shaping and enhancing students' comprehension and proficiency across various competencies.

3.2 Extent of Students' CT Skills in Terms of Analyzing Relevance

Table 2. Extent of students' CT skills in terms of analyzing relevance (n = 145)

	INDICATORS	WX	VD	EOCT
1.	I know how to identify and obtain necessary information for my assignments.	5.24	F	SoH
2.	I can organize information based on its level of importance.	5.12	F	SoH
3.	I can easily distinguish fact from opinion.	5.11	F	SoH
4.	I carefully examine information before citing or using them in my assignment.	5.10	F	SoH
5.	I can narrow down topics or information that are relevant to my assignment.	5.04	F	SoH
6.	I can easily relate the lessons in day-to-day situations like how grammar rules can be applied in daily conversation.	4.97	F	SoH
7.	I know exactly when to disregard unnecessary information.	4.94	F	SoH
8.	I classify information systematically and logically.	4.91	F	SoH
9.	I know how to separate relevant from irrelevant information.	4.77	F	SoH
10.	I can suggest the best solution for a real problem using the right information.	4.65	F	SoH
	COMPOSITE	**4.99**	**F**	**SOH**

Table 2 provides insights on the research question: "To what extent is the CT skills of students in terms of analyzing relevance?" The data illustrate that students generally perceive a "somewhat high" extent of CT skills, as evidenced by weighted mean values ranging from 4.65 to 5.24 (see Table 2.1). This indicates that students demonstrate CT skills when assessing the significance of information for their research requirements 59–72% of the time. These indicators play a significant role in the students' ability to comprehend. Aquino and De Vera (2018) believe that reading comprehension involves the capacity to read a text, analyze it, and understand its significance. Additionally, a person's aptitude for comprehending a text is affected by his ability to draw conclusions, which is another component of CT.

Specifically, the data reveal that students are knowledgeable most in identifying and obtaining necessary information for their assignments, with a considerably higher weighted mean value compared to the other indicators. This implies that students likely understand the importance of thoroughness and resourcefulness in academic work, as well as the significance of utilizing appropriate sources to support their arguments or assertions. Organizational aspects, such as, organizing information based on its level of importance, classifying information systematically and logically, and narrowing down relevant topics or information for assignments, while still strong, demonstrates a slightly lower level of proficiency. This suggests that there may be some room for improvement in how they organize and classify information systematically, prioritize information based on importance, and narrow down topics effectively.

To aid English learners in understanding what they read and acquiring knowledge, instructional methods must extend beyond basic reading skills development (Vaughn et al., 2017). In their research, Elleman and Oslund (2019) highlighted the intricate nature of reading comprehension as a cognitive process, which poses challenges in terms of studying, teaching, and evaluating. Despite this notion, other indicators that obtained weighted mean values ranging from 4.65 to 4.97, namely, relating lessons to day-to-day situations, knowing when to disregard unnecessary information, separating relevant from irrelevant information, and suggesting the best solution for a real problem using the right information, all suggest students' capability to comprehend and find solutions for real-world challenges.

Therefore, it is essential to prioritize the early and ongoing focus on building foundational knowledge, enhancing vocabulary understanding, and fostering skills in monitoring comprehension as individuals progress in their development (Elleman & Oslund, 2019).

3.3 Extent of Students' CT Skills in Terms of Evaluating Resources

Table 3. Extent of students' CT skills in terms of evaluating sources (n=145)

	INDICATORS	WX	VD	EOCT
1.	When looking for information, I skim, scan, and close read to make sure I find the appropriate data I am looking for.	5.30	U	H
2.	When making my assignments, I make sure I only source out information from reliable sources.	5.28	F	SoH
3.	I seek only the truth and nothing but the truth.	5.13	F	SoH
4.	I compare and contrast different sources and analyze if they share common information before I consider using them in my assignments.	5.12	F	SoH
5.	I confirm the credibility of the information before sourcing them out.	5.10	F	SoH
6.	I can easily differentiate credible sources from non-credible ones.	4.92	F	SoH
7.	I only source out up-to-date information for my assignments.	4.88	F	SoH
8.	I do not consider highly opinionated sources (e.g., columns) for the fact that the information they provide are mostly subjective.	4.70	F	SoH
9.	I do not source out information from Wikipedia or brainly.com.	4.61	F	SoH
10.	I am well aware that blogs are not reliable sources of information.	4.60	F	SoH
	COMPOSITE	**4.96**	**F**	**SOH**

Table 3 reveals answers to the research question: "To what extent is the CT skills of students in terms of evaluating sources?" The data reflect that generally, the students perceive a "somewhat high" extent of CT skills as indicated in most of the weighted mean values ranging from 4.60 to 5.28 (see Table 2.2). Similar to the previous finding under analyzing relevance, this result implies that the students apply their CT skills approximately 59–72% of the time. In learning, metacognition is one of the significant predictors of academic achievement. Chick (2017) says that metacognition refers to the capacity to critically comprehend one's cognitive abilities and learning methods and perceives oneself as a thinker and learner. Guzman (2017), in her study about metacognitive awareness and academic performance, discovered that Grade 7 students who possess strong metacognitive abilities generally achieve higher academic results in English compared to those who lack such awareness.

Based on the findings, students are particularly proficient in ensuring that they find the appropriate data they are looking for by skimming, scanning, and close reading. This proficiency in information retrieval techniques can be beneficial for academic success, research endeavors, and overall learning outcomes. This finding is corroborated by Banditvilai's research (2020), which suggests that utilizing reading techniques like skimming, scanning, making predictions, and asking questions assisted students in achieving a satisfactory level of reading comprehension. She also observed that a majority of the students demonstrated the capability to apply these reading strategies effectively in their reading tasks.

Additionally, the results indicate a commendable level of competence in terms of critically sourcing out information that are reliable, credible, up-to-date, and factual. This suggests that students have a comprehensive understanding of evaluating the trustworthiness and credibility of information sources before incorporating them into their assignments. Pennycook and Rand (2019) reinforce this by claiming that the capability to differentiate fabricated news from authentic news is often associated with the inclination to engage in analytical reasoning, which is a subskill of CT.

When students are aware of how they learn, they can plan and think more effectively. According to Naimnule and Corebima (2018), having good metacognitive skills not only improves CT but also helps students do better in their learning.

3.4 Extent of Students' CT Skills in Terms of Using Evidence to Formulate an Argument

Table 4. Extent of students' CT skills in terms of using evidence to formulate an argument (n = 145)

	INDICATORS	$\bar{wx}$	VD	EOCT
1.	I focus on the question first before giving an answer.	6.03	U	H
2.	I seek valuable information that support my argument rather than those that contradict them.	5.28	F	SoH
3.	I am open-minded to different perspectives that can possibly support my argument.	5.19	F	SoH
4.	I clarify and analyze evidences before arriving at conclusions and formulating arguments.	5.10	F	SoH
5.	I critically analyze situations and/or evidences before taking my stand.	4.95	F	SoH
6.	I critically examine findings and results.	4.91	F	SoH
7.	I offer different interpretations for a set of evidence that could be attributed to various factors.	4.90	F	SoH
8.	I seek to establish non-biased and sensitive arguments.	4.83	F	SoH
9.	I compare and contrast comments or theories.	4.81	F	SoH
10.	I approach various complex evidences in a variety of ways.	4.79	F	SoH
	COMPOSITE	**5.08**	**F**	**SOH**

Table 4 provides insights into the research question: "To what extent is the CT skills of students in terms of using evidence to formulate an argument?" The data show that the students generally perceive a "somewhat high" extent of CT skills as evident in the weighted mean values ranging from 4.79 to 5.28 (see Table 2.3). Akin to the previous outcomes under analyzing relevance and evaluating sources, this result implies that the students apply their CT skills approximately 59–72% of the time. Developing advanced CT skills or HOTS early in formal education is crucial to meet the increasing demand for highly skilled professional in the future. According to Singh and Shaari (2019), HOTS go beyond mere memorization and factual observation.

The data suggest that students have the capacity to critically examine results and findings, which ranks sixth among the indicators. This indicates that students do not simply rely on what is provided to them but gives effort to analyze pieces of information before accepting or utilizing them. Additionally, students demonstrate proficiency in seeking valuable information that support their argument, being open-minded to different perspectives that can support their argument, critically analyzing situations and/or evidences before taking a stand, offering different interpretations for a set of evidence that could be attributed to various factors, and approaching complex evidences in a variety of ways. These indicators underscore students' capacity for reasoning, reflecting, and decision-making, all of which are indicative of HOTS. As Ichsan et al. (2019, cited in Kosasih et al., 2022) assert, HOTS denote students' ability to engage in advanced cognitive processes. This ability is not only crucial within the classroom setting but will also have profound impact for students to face real-world challenges and make informed decisions, whether in their careers or in addressing everyday problems (Anggraini & Pratiwi, 2019). Hence, to develop HOTS among learners, teachers are expected to provide quality instruction and utilize teaching strategies that go beyond simple rote learning.

3.5 Relationship Between Students' Level of Knowledge on the MELCs and The Extent of Their CT Skills

Table 5. Relationship between the students' level of knowledge on the MELCs and the extent of their CT skills

VARIABLES CORRELATED	R_S	P-VALUE	DECISION	REMARK
Analyzing Relevance	0.622	0.000	Reject H_o	Significant
Evaluating Resources	0.576	0.000	Reject H_o	Significant
Using Evidence to Formulate an Argument	0.564	0.000	Reject H_o	Significant

Level of significance = 0.05

Table 5 presents data analyzing the correlation between students' level of knowledge on the MELCs and the extent of their CT skills. Applying Spearman's Rank Order Correlation, the results indicate that the p-values for analyzing relevance, evaluating sources, and using evidence to formulate an argument are all below the significance level of 0.05. This means that at a 5% level, there is a noteworthy correlation between students' level of knowledge on the MELCs and the extent of their CT skills. This suggests that a higher level of knowledge on

the MELCs in students corresponds to an increased ability to engage in CT, specifically in terms of analyzing relevance, evaluating resources, and using evidence to formulate an argument.
This aligns with the findings of Mutakinati, Anwari, and Kumano (2018), indicating that learners possess sufficient skills to navigate information for solving contextual problems. As pointed out by Indrasiene et al. (2021), CT is a powerful tool for processing knowledge. It involves activities like analysis, evaluation, and explanation, making it a crucial aspect of learning. Having said this, knowledge, therefore, forms the bedrock for nurturing CT skills. This connection is underscored by the discoveries of Yu, Wu, and Fan (2020), who noticed that students who are adept in CT skills like deduction, explanation, and evaluation, showed a remarkable ability to effectively apply scientific knowledge. In simpler terms, knowledge and CT go hand in hand in creating a powerful synergy in the learning process. Adding another layer to this understanding, Guzman (2017) stated that students who possess strong metacognitive skills tend to outshine their peers with limited metacognition when it comes to academic performance. Metacognition, often described as knowledge about knowledge, emerges as a unique factor that predicts how well students will do across various subjects. According to Sato (2021), metacognition enables students to strategically organize, assess, and reflect on their learning journey. This skill is crucial in fostering self-regulated learning, wherein individuals proactively manage their learning endeavors, leading to a more efficient and autonomous acquisition of knowledge.

Despite significant results on the correlation between knowledge and CT skills among learners, contrasting perspectives emerge in the studies by Hasanah, Sunarno, and Prayitno (2020); Nuryanti, Diantoro, and Zubaidah (2018); and Utami et al. (2018). Their studies indicate that learners may possess lower levels of CT skills, leading to difficulties in fully mastering learning materials. Notably, Vaughn et al. (2017) and Elleman and Oslund (2019) emphasize the complexity of developing CT skills. Both sets of researchers advocate for collaborative efforts from educators and administrators to ensure sustained and long-term enhancement of these skills among learners.

4.0 Conclusion

There is a significant correlation between students' knowledge on the MELCs and their perception of its importance in enhancing their CT skills. This means that a deeper understanding of the MELCs among students correlates with an improved ability to apply critical thinking, particularly in terms of analyzing relevance, evaluating sources, and using evidence to formulate an argument. This understanding enables them to translate what they learn into practical tasks that empower them to make well-informed decisions and effectively address real-world challenges. When students have a thorough grasp of a particular competency, they are more inclined to utilize it in their CT processes. For example, when students possess proficiency in citing evidence to formulate an argument, they are more critical to also obtain necessary information for their assignments; source out information that are reliable; credible, and factual; and seek valuable information that support their argument—indicators all showing the application of the different constructs of CT.

Based on these conclusions, the following recommendations are proposed:

a. Teachers should foster opportunities for students to make connections between different subject areas and apply their understanding of the MELCs across disciplines. This interdisciplinary approach can help reinforce learning and demonstrate the relevance of CT skills in various contexts.
b. Conduct longitudinal studies to track students' development of CT skills over time as they gain deeper knowledge on the MELCs. This will help researchers understand how knowledge on the MELCs contributes to enhancing CT skills and enable them to observe how these skills evolve over the course of students' education.
c. Employ qualitative research methodologies such as interviews or focus group discussions to explore in greater depth the mechanisms that link knowledge on the MELCs with CT skills. This could entail examining how students' cognitive processes and decision-making strategies are influenced by their application of their knowledge on the MELCs in real-world scenarios that require CT.
d. Compare the CT skills of students who have been explicitly taught using the MELCs with those who have not. This could involve creating experimental studies where one group receives instruction on MELCs while the other does not and then assessing their CT skills using standardized assessments.

5.0 Contributions of Authors

This study was written by only one author and had been carefully reviewed and approved by her adviser and method specialist before its finalization.

6.0 Funding

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7.0 Conflict of Interests

There are no conflicts of interest pertaining to the study.

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