Research Article

Enhancing the Grade 7 Students' Mastery of Collocations Through Motor Imaging Technique

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About Article

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ABSTRACT

This study was conducted to enhance the ability of Filipino Grade 7 learners to master English Collocations using the Motor Imaging technique, implemented in two schools of Ilocos Norte: Pinili National High School (PNHS)-Class A, and Mariano Marcos State University-Laboratory High School-Batac Campus (MMSU-LHS)-Class B, during the second semester in the Academic Year 2023-2024. A total of sixty-five (65) students participated in this study, thirty-four (34) from Pinili National High School and thirty-one (31) from MMSU-LHS Batac Campus. Motor Imaging conceptualized by Manzo and Manzo in 1985 was utilized by this study as an intervention for mastering collocations. It is a technique specifically designed to develop word meanings by using movements related to the key attributes of a word. This intervention is deemed fitting in enhancing the mastery on collocation for Grade 7 students. Authentically, the quantitative results of this study showed that the respondents' mean score for pre-test is Class A=10.62 or average and Class B=15.35 or average. The post-test results, on the other hand, showed that Class A obtained a mean score of 18 or above average while Class B achieved a mean score of 23.81 or excellent. This numeric data cites an evident improvement in mastering collocations corroborated by qualitative results through pre and post questionnaire and unstructured interviews. Thus, the intervention is effective for this population in mastering collocations. As a result, this study recommends that teachers are encouraged to employ Motor Imaging as a pedagogical strategy as it caters to most of learning styles and substantially engages learners for active participation.

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1. INTRODUCTION

At the heart of effective communication lies vocabulary, a fundamental component that shapes one's ability to express thoughts, comprehend information, and engage in meaningful discourse. In linguistics, vocabulary refers to the body of words and their meanings that students must understand to comprehend text.

Vocabulary knowledge is one of the strongest predictors of reading comprehension (Gillis, 2020).

Vocabulary knowledge encompasses more than just understanding the meaning of individual words; it also involves knowing the words that typically appear together. These patterns, or collocations, consist of pairs or groups of words that co-occur with very high frequency and are important in vocabulary learning as 'the meaning of a word is influenced by its common associations, highlighting the importance of word relationships in defining meaning.

Additionally, the K to 12 Basic Education Curriculum Guide, 2016 also affirms that becoming aware of collocations is part of vocabulary learning. In DepEd's K to 12 Basic Education Curriculum Guide (2016), there are eight learning domains for English which includes the Vocabulary Development. One of the competencies under this domain is learning collocations particularly for Grade 7 learners (EN7V-III-a-13.11.1, EN7V-III-b-13.11.1, and EN7V-III-c-13.11.1.). Its repeated insertion throughout the curriculum equipped students to deepen their knowledge about it and appropriately use it in different applications (Bruner, 2018).

2. LITERATURE REVIEW

2.1. Collocations

Collocations refer to the habitual combination of words that naturally occur together in a language. Among the types of collocations, adjective-noun pairs are common and play a crucial role in enriching language use. These pairs involve the combination of descriptive adjectives and nouns. The appropriateness of these pairings often depends on cultural and linguistic conventions, as improper use can lead to awkward or incorrect phrasing. As Benson *et al.* (1986) highlighted, lexical collocations like adjective-noun combinations are crucial for mastering vocabulary depth, allowing learners to convey ideas more effectively and naturally.

Despite the integration of collocations to curriculum numerous times, studies show that students still fail to manifest familiarity and remembrance of it. In Shitu's paper (2015) titled "Collocation Errors in English as Second Language (ESL) Essay Writing", it has been observed that most of the second language learners in this research group commit collocation errors. Also, in the study conducted by Saud (2018) titled "An Analysis of Collocation Errors Committed by EFL Learners", the most common types of collocation errors made by English as a Foreign Language (EFL) learners were adjective-noun. For Duan (2012), collocation problem occurs because students of English are more concerned about how to expand their vocabulary, that is, to increase the number of words they can remember. They pay no attention to or ignore the depth of their understanding of the word where collocation is one of the most important aspects of knowing a word.

Similarly, in Philippine context, Filipino students found to have insufficient ability to combine right words. Reyes (2020) posits that inappropriate collocations of certain words particularly high school students are frequently happening. For example, many say 'strong rain' but it is actually 'heavy rain'. Likewise, students often say 'do exercise' but it should be 'make exercise' (Collocation, 2023). These collocation errors are particularly identified as lexical and grammatical collocations according to Benson *et al.* (1986). He stated that lexical miscollocation consists of multi-word units with nouns, adjectives, verbs, and adverbs (e.g. verb-noun, adjective-noun, verb-adverb) while grammatical collocations are composed of a dominant word (e.g. noun, adjective, and verb).

The international and local studies above shows that students' vocabulary skill is lacking profundity because they may recognize the meaning of the word, but its depth is disregarded as they fail to use it correctly. This is supported by many researchers as students may recognize words but struggle with using them flexibly. The framework emphasized that to have vocabulary knowledge is achieving the two dimensions of it: breadth and depth. Vocabulary breadth refers to 'the number of words for which the person knows at least some of the significant aspects' of meaning while vocabulary depth refers to healthy knowledge of a word where one can convey meaning to others.

In relation to these studies and findings, during our Field Study Observation at MMSU-LHS, Batac, one of us observed this similar problem. The resource teacher has a routine called "Word of the Day" where she assigned student to present unfamiliar words. According to her, this is one of her techniques to widen their vocabulary as they are exposed to new words every day. Utilizing Word of the Day could improve vocabulary skills and academic performance. One time, the appointed student for that day introduced the word "excruciating". He explained the meaning to his classmate and also used it a sentence, "She feels the excruciating joy when she passed the exam." Apparently, the usage of the word 'excruciating' is incorrect because the combination of the adjective and noun does not sound right. Another instance is when the appointed student of that day presented the word "sturdy". Subsequently, she gave the meaning and even provided synonyms word for it such as "strong" then used it in a sentence "I prefer sturdy coffee than creamy one."

We examined this collocation error and identified it as lexical miscollocation particularly adjective + noun. The observation above shows that the fusion of the adjective and noun was mistakenly utilized. Instead of pairing the adjective 'excruciating' with the noun pain, student A confusingly paired it with joy, an opposite word of pain. Likewise, student B incorrectly matched the adjective 'sturdy' to noun coffee rather 'strong'. Similar problem also revealed in the study of Ördem and Paker (2016) that adjective-noun miscollocations are common in language learning.

2.2. VARK Model

Manzo and Manzo (1993) for vocabulary instruction asserts that even the highest forms of vocabulary and concept learning have psychomotor foundations or equivalents. Correspondingly, in

Duffelmeyer's experiential approach (1980), he discovers that the act of identifying and acting out a word becomes a life experience in itself with that word. Hence, motor movements associated with certain stimuli can become interiorized as a "symbolic meaning".

In accordance to this, Embalsado (2018) affirms that kinesthetic learning style was more prevalent than visual and auditory learning styles among secondary school students in the Philippines. Also, she found out that there was a positive high correlation between kinesthetic learning style and academic achievement. Particularly, Bernabe (2019) posited that the majority of Grade 7 learning style preference is kinesthetic as they want to be active in classroom. Therefore, the kinesthetic learners' motivation and engagement in vocabulary learning should be reinforced by integrating psychomotor in the process of learning.

In line with this, one of the teaching methods of the Resource Teacher for Grade 7 learners is requiring them to move in the class as observed by one of us along with the visual, auditory, and reading/writing. When asked why she conducts her class that way, she said that it is her way of making the class active and avoiding monotonous learning. This notion of the Resource Teacher is reinforced by Braniff (2011) in her study titled "Perceptions of an Active Classroom" revealing that movement in class increases student alertness and attention. Hence, the Motor Imaging as a technique specifically designed to develop word meanings by using movements related to the key attributes of a word (Deegan, 2016) is fitting in teaching collocations.

One significant advantage of Motor Imaging, although it primarily uses psychomotor, is it caters learners' different learning style as it utilizes multiple modalities (Casale, 2013). Accordingly, Fleming's VARK Model (1987) certifies to this. This model classifies students into four different learning modes; visual (V), aural (A), read/write (R), and kinesthetic (K). Reese (2023) claims that using the VARK modalities can be helpful in planning instruction and learning experiences that help create a multimodal classroom encouraging personalized learning.

In relation to our study, Tseng an Bergen (2005) stated that words with motion-related meanings should be motor imaged in vocabulary to engage the motor system during lexical processing for enhanced understanding. Therefore, the meaning of the words to be treated by this intervention should be doable enough by the physical body.

Accordingly, we categorize the collocations into three, namely size and shape, feelings, and spatial relation. Size and shape's meaning can be pantomimed through hands; Through facial expression, meanings of feelings can be expressed; Spatial relation's action can be performed through moving. Hence, these categories can be easily demonstrated by students which conforms to the statement of Tseng an Bergen (2005) above encapsulated in their study titled "Lexical Processing Drives Motor Simulation."

2.3. Motor Imaging

The intervention employed was Motor Imaging by Manzo and Manzo (1985) to address the identified problem related to mastering collocations and was integrated in the discussion part of the implementation.

Zakirova (2022) suggested that vocabulary instruction and methods must be appropriate to the reader's age and interest. When age-appropriate approaches take into account, it enhances learners' vocabulary acquisition (Agazzi, 2022). Based on the observed behavior of one of the student-teachers of Grade 7 during our Field Study, they are more inclined in physical movement during discussion. According to Suzanne (2017), their participation in class is increased when there is movement integration in classroom discussions.

Moreover, in Philippine Education, inclusivity is an ultimate goal inside the classrooms. In order to guarantee that inclusivity is attained, various learning styles should be acknowledged and catered. Neil Fleming's VARK Model is anchored in this objective. This model theorizes that learners' learned best through visual (V), aural (A), reading/writing (R), and kinesthetic (K). By accommodating different learning styles, teachers can maximize the learning potential of all students (Zreik, 2024).

Therefore, despite the varieties of vocabulary-learning strategies (VLS) with the collective aim to improve effectiveness in vocabulary learning, Motor Imaging Strategy (Manzo & Manzo, 1985) is selected by us as an intervention where it considers the suitability of students' age and interests as well as its conformity to inclusivity. This idea is affirmed by Agustiawati (2022) and Agustin *et al.* (2024) saying that vocabulary instruction must be engaging, age-appropriate and interactive.

Motor Imaging is designed to establish word meanings by using visuals or movements (pantomime) connected to the key attributes of a word (Manzo & Manzo, 1985). Leveraging this intersection, the study posits that incorporating motor imagery into vocabulary instruction offers a unique strategy for enhancing retention.

Furthermore, according to Casale (2013), motor imaging can be a favorable approach to vocabulary acquisition as it enables the students to use multiple modalities the visual, by reading the word; the auditory, by saying the word; and the kinesthetic, by using arm motion. With the motor imaging approach, the student pairs a new vocabulary word with a gesture that describes it. By pantomiming and acting out the meanings of the words, they can relate their experiences to verbal information. Richards and Bohlke (2011) also agree that Motor Imaging conforms to Fleming's VARK model of learning styles. This learning style model accords to our preliminary observation and now take into account to improve students' comprehension in collocation. Visual learners respond to Motor Imaging as they read the presented words written on the board. They benefit from reading, and they consequently learn well by seeing words in books and workbooks, and on the board. Meanwhile, auditory learners are benefited as well. They learn from oral explanation and from hearing spoken words from the teacher. Likewise, they may listen by conversing with their classmates and teachers. Reading/writing learners are also at advantage as they take notes during lectures to remember the new information. Finally, it accommodates kinesthetic learners as they learn best when they are physically involved in the experience. Students better remember new information when they actively participate in activities.

Moreover, as Motor Imaging utilizes physical movements to

fully effectuate the intervention, it will transform the class into fun and enjoyable as they need to act out an action relevant to the meaning of the given word. According to Heri (2022), motor imaging makes students active in vocabulary learning and increases classroom participation. Hence, it will make the class more active instead of being passive. As asserted by Nati (2020) moving while learning is beneficial, and that movement ignites areas of the brain as well as improves neuron connections.

2.4. Research Questions

This study aimed to improve the mastery of collocations of Grade 7 students through Motor Imaging.

Specifically, it sought answers to the following questions:

1. What is students' level of mastery of collocations before the intervention based on their pre-test result?

2. What is students' level of mastering collocations after the intervention based on their post-test result?

3. Is there a significant difference on the students' level of mastery of collocations before and after the intervention?

2.5. Null Hypothesis

This study tested the following hypothesis at a 0.05 significance level.

1. There is no significant difference in the students' level mastery in collocations before and after the intervention.

3. METHODOLOGY

This study employed a mixed-method of descriptive qualitative and quantitative approaches of data gathering and procedure. Primarily, the mixed-method approach in research draws on the potential strengths of qualitative and quantitative methods which allows us to have a broader scope on its research findings with the stated problem in the study through multiple lenses of research (Shorten & Smith, 2017).

Quantitative was used to determine the knowledge of learner with the words before (pre-test) and after (post-test) the intervention. This research design involves the process of collecting and analyzing numerical data which will permit us to build relationships among variables, make predictions, and generalize results by identifying patterns in the gathered data (Sreekumar, 2023). The tests activities were administered two times to ensure the validity of the students' scores. The raw scores obtained from these assessments will be analyzed using appropriate statistical tools.

On the other hand, qualitative is employed to determine the feedback of the students and teachers on the process of the intervention through an unstructured interview. Agustin *et al.* (2024); Agwu (2023) and Blankenheim (2023) asserted that qualitative method involves interviews in research and is used in data collection. By using the qualitative research method, we had narrowly focused but rich information about the background of the responses gathered in the quantitative approach (Interaction Design Foundation, 2016).

The utilization of multiple methods or data sources such as survey and interview allowed us to develop a comprehensive understanding of the phenomena (Chutter, 2020). According to Noble and Heale (2019), triangulation, can help ensure that fundamental biases arising from the use of a single method or a single observer are overcome.

3.1. Data collection

In conducting this study, we had a systematic procedure to obtain the necessary data. We were guided by the following procedures throughout the conduct of the study.

We forwarded a letter to the principal of Mariano Marcos State University Laboratory High School as well as to the JHS coordinator asking for a permission to conduct the study, and the same process was done to the principal of Pinili National High School and to their JHS coordinator.

Pre-Test. It was given prior to the intervention in order to assess their baseline comprehension and identify any unclear terms that were taken from the reading materials that were given. The employed test is a matching type of assessment where in the first column consists of the words, and the second columns contains the meanings of the collocations included.

Pre-Survey Questionnaire. We employed the survey questionnaire preceding the interview to elicit the perspective of the respondents towards learning the subject without the integration of the Motor Imaging technique.

Pre-Unstructured Interview. The students were interviewed on how they acquired their vocabulary while the teachers were asked about the performance of students in school particularly in terms of vocabulary acquisition.

The intervention was encompassed into implementing the Motor Imaging Technique, involving difficult collocations, engaging students in creating pantomimes for word meanings, practicing gestures collectively, and encountering words in an assigned reading material.

Post-Test. The copies of post-test were given to the respondents. The Post-Test measured how well the students remembered and retained the words that they had come across, which was consistent with validity indications for vocabulary development. The conducted test is also a matching type of the same content as the pre-test but the items were shuffled.

Post Survey-Questionnaire. The post survey-questionnaire was given to determine the changes in the perspective of the respondents towards learning after the intervention was integrated.

Post-Unstructured Interview. The students as well as the teachers were asked again about their feedback and comments on the intervention.

The data obtained from the interview was examined through content analysis; whereas, the survey-questionnaires were evaluated with statistical analysis tools.

After all the results were analyzed, we interpreted whether there was a significant difference before and after the intervention.

3.2. Ethical issues

The conduct of research required not only expertise and diligence, but also honesty and integrity. This was done to recognize and protect the rights of human subjects. To render the study ethically, anonymity, confidentiality, and informed consent were observed.

In the conduct of the study, we obtained consent from the principal and adviser of the participants. After the approval of the request, we also forwarded a letter of consent and assent

to the parents of the students as they were still minors. We distinctly explained the purpose and background of the study, the methodology to be used, the inconveniences and risks, direct advantages that the respondents will acquire, benefits, funding behind the study, and privacy/confidentiality before they agree or decline to participate.

All information and data that were acquired with consent from the participants were treated with the highest confidentiality. We secured that the data of the respondents were solely used for the purpose of the research. Information of the respondents was kept hidden from anyone else to protect their personal identity. Thus, we anonymized personally identifiable data so that it cannot be linked to other data by anyone else.

3.3. Data analysis

The students' baseline vocabulary knowledge was determined through the pre-test where the points acquired from individual items were sum up and interpreted on which descriptive interpretation it corresponds. Similarly, students' scores in post-test were totaled and interpreted on the same norms. In interpreting the result of the study, the following norm of rating adapted from Brown (2010) was used.

Table 1.

Numerical Ranges	Interpretation
21 – 25	Excellent
16 – 20	Above Average
11 – 15	Average
6 – 10	Below Average
0 – 5	Poor

The significant difference on the pre-test and post-test were measured through Paired T-test which indicated whether the intervention is effective or not. The following adapted formula from Avcontentteam (2023) was used in obtaining the t-value to evaluate whether the intervention was effective in enhancing the comprehension of students in collocations.

$$t = \frac{m}{s/\sqrt{n}}$$

where,
t = t-statistic
m = mean of the group
s = standard deviation of the group
n = sample size

To advance the results obtained, frequency and percentage were further used to determine the result of the difference between the pre- and post-survey questionnaire to determine whether if there was a significant difference in the student's insights on learning collocations before and after the intervention.

Moreover, the responses that were gathered on the students' and teachers' unstructured interview were used to supplement the findings of the study and further elaborated the effect of the intervention to the learners' motivation and ability to learn collocations.

4. RESULTS AND DISCUSSION

4.1. Students' Mastery of Collocation before Intervention

The table below shows the pre-test results of the Grade 7 students to determine their ability in mastering collocations.

Table 2. Mean scores of the respondents in their pre-test

Range of Scores	F	%	DI
Class A (n=34)			
21-25	1	2.94%	Excellent
16-20	4	11.76%	Above Average
11-15	13	38.24%	Average
6−10	9	26.47%	Below Average
0-5	7	20.59%	Poor
Mean	10.62		Average

The results in the table above show that the respondents from Class A are average performers as they have obtained a mean score of 10.62 before the implementation of the intervention. Thus, this indicates that the respondents can fairly master the meaning of collocations.

In the result of Class A, the majority of the students (13 or 38.24%) were average performers, and (7 or 20.59%) were poor in mastering collocations. There were nine (9) or 26.47 % who obtained scores from 7-11, described as below average performers, which means approximately one-fourth of the population can closely master vocabulary in collocations. Further, four (11.76%) students were described as above average performers, and only one (2.94%) obtained scores from 22-26 described as excellent. This indicates that the class A in general are average performers (M = 10.62) in mastering collocations.

To complement to the pre-test results, supplementary data were collected through pre-questionnaire administered to gauge students' perceptions of the teaching-learning process within their English classroom, as well as to assess their strengths and weaknesses in understanding and mastering collocations. Furthermore, to strengthen the obtained findings, excerpts from pre-interviews conducted with the students were utilized. Administering the aforementioned research instruments further validate the data collected as Hilton (2017) agrees that pre-questionnaire and pre-interview are crucial to ensure understanding, interpretation, and face validity of items, which may not be fully addressed by pretesting alone. These qualitative insights offer a variation of understanding of the students' perspective assessment of the efficacy of the intervention in understanding and mastering collocations.

For the pre-questionnaire, Indicators one (1) to five (5) are statements regarding their perceptions and feelings toward learning English, while Indicators six (6) to 10 regard their ability to learn and use collocations. An unstructured interview was also administered to further support the reliability of the findings of the study.

Based on the results of the response of the population on indicators 1-5, their perceptions and feelings toward learning English reveals that almost quarter from Class A (35.30%) population are not comfortable in reciting and sharing their

Table 3. Pre Survey-Questionnaire Results

	Indicators	YES	%	NO	%
1	I like learning collocations in our English class.	33	97.05 %	1	2.94 %
2	I pay attention and understand the teacher's explanation on collocations.	26	76.47 %	8	23.53%
3	I feel motivated and enthusiastic all throughout the discussion in our English class.	33	97.05 %	1	2.94 %
4	I can relate to the examples, illustrations, and explanations of concepts presented by our English teacher.	29	85.29 %	5	14.71%
5	I am comfortable reciting and sharing my ideas with the class.	22	64.71%	12	35.30%
6	I am able to use the collocations in a sentence.	28	82.35%	6	17.65%
7	I can recall the meaning of the collocations.	24	70.59%	10	29.41%
8	I find the strategies of my teacher helpful in understanding the meaning of the collocations.	29	85.29%	5	14.71%
9	I can define the collocations presented by the English teacher	31	91.18%	3	8.82%
10	I realize that the collocations are relevant in my every day communication.	31	91.18%	3	8.82%

ideas with the class. Also, it has been revealed that there is one (1) respondent that does not like learning collocations and unmotivated during English class. Furthermore, 23.53% or 8 of the class does not pay attention and do not understand the teacher's explanation on collocations. Lastly, in indicator 4, it was shown that five (5) students cannot relate to the examples, illustrations, and explanations of concepts presented by the teacher. From the unstructured interview, students and the resource teacher asserted that:

"*I do not have a wide knowledge in vocabulary. Therefore, I cannot say I have a depth understanding on collocations particularly its usage and examples.*" - Student 15

"*Most of the time, I am not confident in reciting during English class because I couldn't understand the language and most especially, I don't know how to properly utilize the concepts like vocabulary, collocations, and others.*" - Student 2

"*There are only few students that I can count on fingers who are reciting during English class. I have observed that some of them lacks in vocabulary knowledge especially in collocations.*" - Cooperating Teacher 1

Apart from this, there were 10 (29.41 %) students from Class A out of 34 and 14 (45.16%) out of 31 in Class B population said that they cannot recall the meaning and use of the collocations. Some statements from the respondents confirm these findings:

"*During discussions, I somehow understand the meaning and usage of the collocations presented by our teacher, however, I tend to forget meaning of these words after the discussion.*"- Student 4

"*My retention to the meaning of words or concepts are very low that I can forget a meaning of a word I have just discovered hours earlier.*" - Student 1

Meanwhile, Class B students are primarily average (M=15.35) performers in mastering collocations before the intervention was implemented. Most of them are above average (9 or

Table 4. Mean scores of the respondents in their pre-test (Class B)

Range of Scores	F	%	DI
Class B (n=31)			
21-25	9	29.03%	Excellent
16-20	9	29.03%	Above Average
11-15	6	19.35%	Average
6–10	4	12.90%	Below Average
0-5	3	9.68%	Poor
Mean	15.35		Average

29.03%) performers and excellent (9 or 29.03%) performers. This result further explains that the students from Class B are dispersedly described as above average, below average, and poor performers.

The findings above were further supported by the administered pre-questionnaires and the unstructured interviews.

The responses of the Class B on the pre-questionnaires about their feelings and perceptions in learning collocation, it has been revealed on the results that thirteen out of 31 respondents are not comfortable in sharing their ideas to the class. Also, according to their responses, results show that only 74.19% of the population can relate to the different examples, illustrations and explanations that the teacher presents during class, as well as 20.81 % feel unmotivated during discussions in English class. This reflects that although majority of the class had a positive response, the result reveals that there are still a number of three (3 or 9.68%) of the population who do not pay attention to the explanations of the concepts of collocations.

Students and cooperating teachers asserted the following during the unstructured interview:

Table 5. Pre Survey-Questionnaire Results (Class B)

	Indicators	YES	%	NO	%
1	I like learning collocations in our English class.	26	83.87%	5	16.13%
2	I pay attention and understand the teacher's explanation on collocations.	28	90.32%	3	9.68%
3	I feel motivated and enthusiastic all throughout the discussion in our English class.	27		3	
4	I can relate to the examples, illustrations, and explanations of concepts presented by our English teacher.	23	74.19%	8	20.81%
5	I am comfortable reciting and sharing my ideas with the class.	18	58.06%	13	41.94%
6	I am able to use the collocations in a sentence.	23	74.19%	8	20.81%
7	I can recall the meaning of the collocations.	17	54.84%	14	45.16%
8	I find the strategies of my teacher helpful in understanding the meaning of the collocations.	27	87.1%	4	12.90%
9	I can define the collocations presented by the English teacher.	18	58.06%	13	41.94%
10	I realize that the collocations are relevant in my every day communication.	22	70.94%	9	29.03%

"*I like speaking English, but I am not fully knowledgeable of how to properly use vocabulary specifically collocations.*" - Student 9
"*I can easily grasp the meaning of a single word; however, I struggle in understanding the meaning of words if they appear together. Individual words are easier to understand than collocations.*" - Student 13
"*I have been using my routine "Word of the Day" to my Grade 7 students. I have seen the progress of the vocabulary knowledge of my students; however, I observed that they lack knowledge and interest in wider vocabulary such as collocations.*" - Cooperating Teacher 2

In the pre-questionnaire, (Indicators 6-10), the results revealed that almost a quarter of the Class B population cannot define collocations as well as its meaning presented by the English teacher. Furthermore, 20.81% of the Class B population revealed that they are not able to use collocation in a sentence. In relation to this, four (4) out of 31 of the population do not find the strategies of the teacher helpful in understanding the meaning of the collocations. With the unstructured interview, class B population and the cooperating teacher asserts that:

"*Collocations is harder to understand because of its complexity rather than individual words.*" - Student 2
"*I love exploring unfamiliar words. But I find learning collocations harder since it requires knowing of each word.*" - Student 13
"*My students must be involved during the teaching-learning process of vocabulary specifically collocations in a sense that I appoint students to present unfamiliar words before the discussion.*" - Cooperating Teacher 2

This result further explains that although majority of the population is familiar of the use and examples of collocation, it must be taken into high consideration the findings of Raska *et al.* (2014) that retention of concepts among all students, not just the majority, is crucial to enhance long-term learning, ensuring comprehensive mastery and understanding for all individuals.

4.2. Students' Ability in Mastering Collocation After the Intervention

The tables below show the results of the post-test and survey questionnaire of the Grade 7 students to determine their ability in mastering collocations.

Table 6. Mean scores of the respondents in their post-test (Class A)

Range of Scores	F	%	DI
Class A (n=34)			
21-25	12	35.29 %	Excellent
16-20	14	41.18 %	Above Average
11-15	6	17.65 %	Average
6–10	2	5.88 %	Below Average
0-5	0	0	Poor
Mean	18		Above Average

It can be inferred from the table that the majority of Class A (14 out of 34 students or 41.18% of the sample size) are above average performers. Twelve students (35.29%) of the respondents were also classified as excellent performers. Additionally, there are also six (6) students or 17.65% attained the descriptive interpretation of average, and two (2) were also identified as below average performers. Favorably, there is no student who is determined poor (0-5). In summary, Pinili National High School (Off-Campus) with a respondent of thirty-four (34) students has an over-all performance as above average according to the data's mean (M=18) with the intervention of the Motor Imaging Technique.

To further supplement the data from the post-test, a post-questionnaire was employed to the students to gather their perceptions on the teaching-learning process of their English class. The questionnaire was also meant to weigh their strengths and weaknesses in mastering collocations with the aid of Motor Imaging Technique. The indicators from one (1) to five (5) in the post-questionnaire are statements asking the

perceptions and feelings of the respondents towards learning English, and the six (6) to ten (10) statements are to assess their ability to learn and use collocations with the intervention of Motor Imaging Technique. In addition, unstructured interview was also conducted to further support the findings of the study to enhance its credibility and validity.

Table 7. Post Survey – Questionnaire Results (Class A)

	Indicators	YES	%	NO	%
1	I like learning the vocabulary in collocations in our English class with the integration of the Motor Imaging Technique.	34	100 %		1
2	I pay attention and understand the teacher's explanation on collocations with the aid of the Motor Imaging Technique.	33	97.06 %	1	2.94 %
3	I feel motivated and enthusiastic all throughout the discussion in our English class with the intervention of the Motor Imaging Technique	34	100 %		
4	I can relate to the examples, illustrations, and explanations of concepts presented by our English Teacher with the Motor Imaging Technique.	34	100		
5	I am comfortable reciting and sharing my ideas with the class because of the intervention, Motor Imaging Technique.	32	94.12 %	2	5.88 %
6	I am able to use the collocations in a sentence because of the aid of the Motor Imaging Technique.	34	100 %		
7	I can recall the meaning of the collocations through engaging the Motor Imaging Technique.	34	100 %		
8	I find the Motor Imaging Technique of my teacher helpful in understanding the meaning of the collocations.	34	100 %		
9	I can define the collocations presented by the English teacher through the Motor Imaging Technique.	32	94.12 %	2	5.88 %
10	I realize that the collocations are relevant in my every day communication after the Motor Imaging Intervention.	33	97.06 %	1	2.94%

The gathered data from the Class A, from the indicators 1-5 which evaluates the respondents' perspective towards learning English, reveals that all of the respondents (34 students or 100%) now like learning collocations, feel motivated and enthusiastic all throughout the discussion, and can relate to the examples, illustrations, and explanations of concepts presented to them. Further, 97.06% (33) pay more attention to the teacher's explanation on collocations now. Thirty-two (32 or 94.12%) revealed that they are now more comfortable reciting and sharing their ideas with the class. These findings were further validated through the post-unstructured interview which is emphasized by one of the respondents and the cooperating teacher.

"Through making pantomimes related to the words presented, my motivation and excitement during class was ignited as the activity that the teachers employed made the lecture on collocations a lot easier." - Student 7

"*The learners are becoming interactive, and they are now participating on class discussions. They are very eager in making those pantomimes, and it is very evident that they are having fun while having their English class because of the technique letting them think and act on their own in generating meanings on the collocation presented to them."* - Cooperating Teacher 1

Moreover, in indicators 6-10 regarding their ability, all students (34 or 100%) from Class A now can learn, use, and recall collocations. Similarly, all (34 or 100%) of the respondents find the intervention helpful. Moreover, thirty-three (33 or 97.06%) of the respondents now realized that collocations are relevant in everyday communication. The above-mentioned findings were further substantiated by one of the students.

"By imagining and acting out the words, it enables me to understand the concept of collocations, and use it properly and accordingly in my sentence construction and uhm, also with my interactions with my classmates." - Student 18

"I can understand and use collocations by visualizing it first in my mind and making actions afterwards. While doing it, I am thinking that I will be able to use it in my daily communication and in my education." - Student 9

Table 8. Mean scores of the respondents in their post-test (Class B)

Range of Scores	F	%	DI
Class B (n=31)			
21-25	29	93.55 %	Excellent
16-20	2	6.45 %	Above Average
11-15	0	0	Average
6−10	0	0	Below Average
0-5	0	0	Poor
Mean	23.81		Excellent

On the other hand, majority of the Class B students (29 out of 31 or 93.55%) from MMSU-LHS (Batac Campus) were identified as excellent performers (M=23.81). Two (2) of the respondents attained above average. There are no students identified as

average, below average, and poor. The above-findings were also further supported by the post-questionnaire and excerpts from the unstructured interview.

Table 9. Post Survey-Questionnaire Results (Class B)

	Indicators	YES	%	NO	%
1	I like learning the vocabulary in collocations in our English class with the integration of the Motor Imaging Technique.	31	100 %		
2	I pay attention and understand the teacher's explanation on collocations with the aid of the Motor Imaging Technique.	31	100 %		
3	I feel motivated and enthusiastic all throughout the discussion in our English class with the intervention of the Motor Imaging Technique	31	100 %		
4	I can relate to the examples, illustrations, and explanations of concepts presented by our English Teacher with the Motor Imaging Technique.	31	100 %		
5	I am comfortable reciting and sharing my ideas with the class because of the intervention, Motor Imaging Technique.	29	93.55 %	2	6.45 %
6	I am able to use the collocations in a sentence because of the aid of the Motor Imaging Technique.	31	100 %		
7	I can recall the meaning of the collocations through engaging the Motor Imaging Technique.	31	100 %		
8	I find the Motor Imaging Technique of my teacher helpful in understanding the meaning of the collocations.	31	100 %		
9	I can define the collocations presented by the English teacher through the Motor Imaging Technique.	29	93.55 %	2	6.45 %
10	I realize that the collocations are relevant in my every day communication after the Motor Imaging Intervention.	31	100 %		

Meanwhile, from the Class B, all of the sample size (31 or 100%) considered themselves that they like learning collocation in a sentence as they attentively pay attention to the teachers' discussion. The motivation of all the respondents (31 out of 31) was also enhanced as they were able to relate the examples, illustrations, and explanations of concept presented by us. On the indicator 5 stating the comfortability of the respondents in reciting ideas with the class, twenty-nine (29 out of 31 or 93.55%) became more comfortable. These positive findings were supplemented with the post-interview as one of the learners stated that:

"*It was very fun making those pantomimes, but still we were learning about making meanings on collocations even though it was full of laughter.*" - Student 15

"*When the teacher presents the collocations, we are very eager in showing our actions that we are even doing it without the start of the signal go.*" - Student 27

"*The learners are very accommodating in the activity that they were asked to do. They are very much lively when making their pantomimes.*" - Cooperating Teacher 2

Similarly, in Class B, all of the respondents (100% or 31 of the sample size) now were able to use the collocations in a sentence accurately and they were able to recall the meanings of it. The intervention was also helpful to the learners as the data indicates that all of the respondents (100 % of the sample size). All of the respondents (31 or 100%) were also able to realize

now that the collocations they were learning are relevant to their everyday communication. On the indicator 9, twenty-nine (29 or 93.55 %) of the sample size were able to define the collocations presented now.

Therefore, based on the apparent increment of the responses, the study finds that the respondents were able to enrich their motivation in learning English, and they were able to master collocations accordingly. This reveals that Motor Imaging was effectively used as their tool in mastering collocations.

Over-all, the findings signifies that the intervention enhances the ability of the respondents to master collocations as it was able to make the learners above average and excellent performers in mastering collocations. This was affirmed by Bayram, et.al. (2023) on their research as they suggested that Motor Imaging can improve language processing by modifying the motor system, leading to improvements in language performance. Their findings indicate that motor simulation through Motor Imaging can enhance motor skill learning and performance, which in turn can influence language processing positively.

4.3. Difference between the Ability of the Students in Mastering Collocations
4.3.1. Before and After the Intervention
To identify the effectiveness of the intervention on the students' ability to master collocations, we compared the results of the

pre-test and post-test, as shown in the table below:

Table 10. Difference between the pre-test and post-test score of Class A

	M	DI	Diff	t	P
Pre-test	10.62	Below Average	7.38	9.63**	0.0001
Post-test	18.00	Above Average			

The paired t-test used in this study showed that the computed t-value of 9.63 with p=0.0001, which is less than 0.01 significance level, indicates that the difference in pre-test and post-test is statistically significant rejecting the null hypothesis of this study. From 10.62 means scores which means below average performers, the respondents obtained 18.00 or above average performers. The 7.38 increase from pre to post-test signifies that motor imaging as intervention for mastering collocations for Grade 7 students are effective.

Table 11. Survey-Questionnaire Results (Class A)

PRE-QUESTIONNAIRE RESULTS				POST-QUESTIONNAIRE RESULTS		
	Indicators	YES	NO	Indicators	YES	NO
1	I like learning collocations in our English class.	33	1	I like learning the vocabulary in collocations in our English class with the integration of the Motor Imaging Technique.	34	1
2	I pay attention and understand the teacher's explanation on collocations.	26	8	I pay attention and understand the teacher's explanation on collocations with the aid of the Motor Imaging Technique.	33	1
3	I feel motivated and enthusiastic all throughout the discussion in our English class.	33	1	I feel motivated and enthusiastic all throughout the discussion in our English class with the intervention of the Motor Imaging Technique	34	
4	I can relate to the examples, illustrations, and explanations of concepts presented by our English teacher.	29	5	I can relate to the examples, illustrations, and explanations of concepts presented by our English Teacher with the Motor Imaging Technique.	34	
5	I am comfortable reciting and sharing my ideas with the class.	22	12	I am comfortable reciting and sharing my ideas with the class because of the intervention, Motor Imaging Technique.	32	2
6	I am able to use the collocations in a sentence.	28	6	I am able to use the collocations in a sentence because of the aid of the Motor Imaging Technique.	34	6
7	I can recall the meaning of the collocations.	24	10	I can recall the meaning of the collocations through engaging the Motor Imaging Technique.	34	7
8	I find the strategies of my teacher helpful in understanding the meaning of the collocations.	29	5	I find the Motor Imaging Technique of my teacher helpful in understanding the meaning of the collocations.	34	
9	I can define the collocations presented by the English teacher.	31	3	I can define the collocations presented by the English teacher through the Motor Imaging Technique.	32	2
10	I realize that the collocations are relevant in my every day communication.	31	3	I realize that the collocations are relevant in my every day communication after the Motor Imaging Intervention.	33	1

To validate the result of pre-test and post-test, results of pre-questionnaire and post-questionnaire was utilized. The indicators 1-5 of the questionnaires are indicators for their feeling and perception towards learning collocation. The whole population (34 or 100%) of the respondents feels motivated and enthusiastic in learning collocations after the intervention. Similarly, 34 students (100%) can relate to the examples, illustrations, and explanations of concepts presented now with the intervention. Evidently, there is an increment of positive feelings and perception from respondents in learning collocations through motor imaging and this was affirmed by

a student:

"I enjoy learning collocations especially that our student teachers use physical activity in discussion. It makes me active and avoids boredom." - Student 3

Furthermore, indicators 6-10 of the questionnaires are pointers for their ability in learning collocation. Their mastery in collocations is improved as reflected in the difference between pre and post-questionnaire results. All (34 or 100%) of the respondents now finds the intervention helpful in understanding the meaning of the collocations. Likewise, the entire population (34 or 100%) of the respondents can recall,

define, and use the collocations in a sentence with the integration of the intervention. This increase of positive response from the students is asserted by the cooperating teacher:

"You can see that the students become more participative in learning collocations with the use of motor imaging as intervention in the discussion. They also successfully use it according to its context." - Cooperating Teacher 1

Hence, the similarity of the results in pre-test: post-test, pre-questionnaire: post-questionnaire, and pre-interview: post interview implies that the overall result is valid and there is significant difference of before and after the intervention. Thus, Motor Imaging Technique in teaching and learning collocation for Grade 7 students (Pinili National High School) is effective.

It can be gleaned from the table that Class B has the t-value of 7.72 with p=0.0001, which is lesser than 0.01 significance

Table 12. Difference between the pre-test and post-test score of Class B

	M	DI	Diff	T	P
Pre-test	15.35	Average	8.46	7.72**	0.0001
Post-test	23.81	Average			

level. This means that the pre-test and post-test result of the respondents has a significant difference. Their mean score in pre-test is 15.35 or average performer in mastering collocation increased in 23.81 or excellent performers in post-test, after the intervention. The 8.46 mean score difference implies that motor imaging is effective for mastering collocation for this population.

Table 13. Survey-Questionnaire Results (Class B)

	PRE-QUESTIONNAIRE RESULTS			POST-QUESTIONNAIRE RESULTS		
	Indic-ators	YES	NO	Indic-ators	YES	NO
1	I like learning collocations in our English class.	26	5	I like learning the vocabulary in collocations in our English class with the integration of the Motor Imaging Technique.	31	
2	I pay attention and understand the teacher's explanation on collocations.	28	3	I pay attention and understand the teacher's explanation on collocations with the aid of the Motor Imaging Technique.	31	
3	I feel motivated and enthusiastic all throughout the discussion in our English class.	27	4	I feel motivated and enthusiastic all throughout the discussion in our English class with the intervention of the Motor Imaging Technique	31	
4	I can relate to the examples, illustrations, and explanations of concepts presented by our English teacher.	23	8	I can relate to the examples, illustrations, and explanations of concepts presented by our English Teacher with the Motor Imaging Technique.	31	
5	I am comfortable reciting and sharing my ideas with the class.	18	13	I am comfortable reciting and sharing my ideas with the class because of the intervention, Motor Imaging Technique.	29	2
6	I am able to use the collocations in a sentence.	23	8	I am able to use the collocations in a sentence because of the aid of the Motor Imaging Technique.	31	6
7	I can recall the meaning of the collocations.	17	14	I can recall the meaning of the collocations through engaging the Motor Imaging Technique.	31	
8	I find the strategies of my teacher helpful in understanding the meaning of the collocations.	27	4	I find the Motor Imaging Technique of my teacher helpful in understanding the meaning of the collocations.	31	
9	I can define the collocations presented by the English teacher	18	13	I can define the collocations presented by the English teacher through the Motor Imaging Technique.	29	2
10	I realize that the collocations are relevant in my every day communication.	22	9	I realize that the collocations are relevant in my every day communication after the Motor Imaging Intervention.	31	10

To provide strong support in the quantitative table, difference of pre and post-questionnaire, indicators 1-5, was used to gauge the respondents' perception and feeling towards mastering collocation. All (31 or 100%) of the respondents feel motivated and enthusiastic in learning collocation so they pay more attention and understand more the collocations with

the intervention. Likewise, 100% (31) of the respondents like learning collocation with the intervention as they can relate to the examples, illustrations, and explanations of concepts presented. The evident increase from pre to post-questionnaire is also affirmed by one of the students.

"The integration of pantomime in the class discussion stimulates

my excitement to learn collocation. I feel like there is no pressure in learning unlike pure lecture of discussion." - Student 5

Moreover, indicators 6-10, which are pointers of their ability in mastering collocation with and without intervention, also showed a positive increment. All (31 or 100%) of the respondents can now recall and use collocation after the intervention. Also, 100% (31) of them find the Motor Imaging Technique helpful in mastering collocations and as a result, they realize its relevance in everyday communication. The result was supported by an interview with the cooperating teacher.

"*The class generally shows understanding in collocations through the motor imaging technique. Through the words produce, the meanings of the combined words become clearer to them.*" - Cooperating Teacher 2

In general, the results from post-test, post-questionnaire, and post-interview, indicate varying levels of progress. Class A marked above average after the intervention while Class B is showed as excellent performers. This implies that Motor Imaging Technique is effective in enhancing the mastery of collocations for grade 7 learners. This result is acknowledged by Bonnet *et al.* (2022) stating that motor imagery improves performance on lexical-semantic access tasks, indicating effectiveness for enhancing vocabulary comprehension

5. CONCLUSIONS

Based on the findings above, Motor Imaging conceptualized by Manzo and Manzo (1993), integrated in the discussion part of the lesson, has significant impact on Grade 7 students' mastery in English collocations. Through the displayed results of this study, its validity is tested and transpires through time as evident on its facilitation in this contemporary time.

In the 21st century educational context, student-centered approach is advocated inside the classroom. In this approach, students are responsible of their own learning. Accordingly, motor imaging fits to this approach and therefore, this intervention is leaning towards contemporary type of learning. Since students are required to generate pantomime in this technique, what is being utilized as an action for every collocation used in this study, is deduced solely from what is acted by majority of the students. Instead of giving and commanding them a fixed gesture from us teacher, they are the ones producing the action which they will use in their own understanding. As a result, they become more engage as evident in this study and ultimately, increasing the likelihood of information retention.

In consideration of the results and reflection of the study, we propose the following recommendations teachers, learners, future researchers, and curriculum developers.

Firstly, teachers may incorporate the motor imaging technique as this intervention can cater all learning styles, engage learners for active participation during the teaching and learning process that rapidly which allows the learners to think on their own that fosters rapid acquisition and retention of vocabulary. Moreover, the learners are encouraged to use this technique as a means for better comprehension and retention in enhancing their vocabulary, and to further enhance their active participation during their classes.

Also, future researchers can also conduct a similar study to substantiate the effectiveness of the intervention, and to further explore the integration of motor imaging techniques with other language domains. Aside from the matching type of test utilized, they may explore other types of tests to give more comprehensive results that will validate the effectiveness of the intervention.

Lastly, Curriculum Developers can use the intervention and findings of this study to integrate in our curriculum for the betterment of students, especially with regard to students' vocabulary skills.

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