

Long Paper

Multiple-Level Vocabulary Knowledge Among Senior High-School Students

Adrian Clark D. Perez

AB English Language Department, Pangasinan State University – Bayambang Campus,
Philippines

perez.adrian84@gmail.com

(corresponding author)

Laarni B. Perez

AB English Language Department, Pangasinan State University – Bayambang Campus,
Philippines

gnin3laarni@gmail.com

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Abstract

This research employed the mixed-methods research (MMR) methodology to ascertain the current vocabulary knowledge of senior high school students. The MLVA tool, which underwent a validation process by the English teachers of the target respondents, was utilized to gauge the vocabulary knowledge of the 198 respondents to the study. Additionally, a semi-structured interview dealt with the limiting factors that the respondents view as playing a role in their current extent of vocabulary knowledge. These centered around attitudinal factors, socio-economic factors, social factors, and extra-curricular factors. It is revealed from the results that, while the trend is that the students fail to meet the set expectations of their teachers, as reflected in the results of the MLVA, their expression of confidence in their word knowledge received the lowest mean score. As for the limiting factors perceived by students that hinder their vocabulary knowledge, the interviews reveal that all four factors play significant roles, albeit in varying degrees. In light of the findings, the senior high school students have been revealed to be unable to reach the expected level of vocabulary knowledge for their grade level. Based on the results of the findings, intervention methods are therefore



recommended to be implemented to augment the students' vocabulary knowledge. These can take the form of enrichment or supplementary lessons or the crafting of a vocabulary enhancement material (VEM) that directly targets the weaknesses of the students in terms of vocabulary knowledge.

Keywords – multiple-level, vocabulary, language, learning, assessment

INTRODUCTION

Measurements of vocabulary have long been in practice but have reasonably remained stagnant. Several researchers even note that these methodologies of vocabulary measurements have been "driven by tradition, convenience, psychometric standards, and a quest for the economy of effort" (Pearson et al., 2007; Scott, Lubliner & Hiebert, 2006). It is even observed that some vocabulary assessments have several flaws, like words being selected arbitrarily with no theoretically grounded principles or without consideration of the complexity and multi-faceted nature of word learning (Pearson et al., 2007).

Furthermore, an examination of vocabulary learning strategies used by university students in Malaysia revealed students' general perceptions of the role of vocabulary in language learning, emphasizing the importance of focusing on vocabulary enrichment. Then, in 2008, researchers from UC Santa Cruz and Merced made significant advances in vocabulary assessment. The Multiple-Level Vocabulary Assessment (MLVA) tool was developed to replace traditional multiple-choice vocabulary assessment tests by taking into account the incremental and multi-faceted aspects of vocabulary learning.

The prevalent notions and understanding in the field of vocabulary knowledge development and learning, which has been the central focus of research in language development, instruction, and acquisition, are critical in the development of the MLVA tool. For several decades, vocabulary development has been a central focus of research (Harmon et al., 2009; Meara, 1980; Oxford, 2003; Walters, 2006; Alqahtani, 2015; Magno, 2010; Lucas et al., 2011). These studies emphasize the importance of vocabulary learning in language learning and teaching, as the meaning of new words is frequently emphasized in both theoretical and practical avenues.

Even with vocabulary, a well-sought topic in language research, Scott et al. (2008) observe that it is a difficult subject to tackle because it is intertwined with conceptual knowledge, sociocultural realities, instructional opportunities, and the general slippery nature of words. As a result, all reading, writing, and language assessments have long included vocabulary knowledge. This, in turn, became one of the driving forces behind the creation of the MLVA.

Since the MLVA was a product of the VINE (Vocabulary Innovations in Education) project, the original researchers understand that vocabulary knowledge has long been part of language testing and research. It is through these assessments that important educational decisions have been made. As such, if these assessments fail to properly address the pertinent factors involving language acquisition as revealed by contemporary research, it is also expected that decisions based on them would also be lacking in proper context or outright invalid. In the United States, Afflerbach (2005) notes that studies on student learning have had significant impacts on both policy and research about literacy practices in the past three decades.

With the implementation of the K–12 Basic Education Program in the Philippines comes the introduction of the senior high school curriculum. According to the Official Gazette (n.d.), it was designed to "provide sufficient time for mastery of concepts and skills, develop lifelong learners, and prepare graduates for tertiary education, middle-level skills development, employment, and entrepreneurship".

Adding to the fact that one of the general goals of the K–12 Basic Education Program is education equity, where senior high school graduates are properly equipped with much-needed skills for employment without college degrees, it becomes more imperative to achieve a credible and reliable grasp on the general language capabilities of students, particularly in the area of vocabulary knowledge, which in turn will develop their competency in the English language.

LITERATURE REVIEW

Vocabulary Knowledge

While the role of vocabulary in language learning has been a robust area of study in recent years, that has not always been the case. In the past, vocabulary depth and knowledge did not warrant as much research as grammar and other areas. However, with the current trend of studies acknowledging the role of vocabulary comes a plethora of multi-disciplinary and multi-faceted views of vocabulary and language learning.

Studies in language learning reveal that vocabulary knowledge is the main and largest obstacle to effective SLA and FLA. Huckin (1995) mentions in his study that vocabulary knowledge is the main factor upon which second language learning hinges. This was also echoed in the research of Wilkins (1972, p. 110-111), where he emphasized the greater importance of vocabulary compared to grammar by saying that "there is not much value in being able to produce grammatical sentences if one has not got the vocabulary that is needed to convey what one wishes to say... While without grammar very little can be conveyed, without vocabulary nothing can be conveyed." This point was again emphasized by Maximo (2000), who justified the main reasons why language learners should devote more attention to vocabulary by saying that "First, a large vocabulary is, of course, essential for mastery of a language. Secondary language learners

know this; they carry dictionaries with them, not grammar books, and regularly report that the lack of vocabulary is a major problem."

Alqahtani (2015) again explores the immutable role of vocabulary in language learning. By summarizing important studies on the importance of vocabulary in the language education situation in the Kingdom of Saudi Arabia, he showed that lexical knowledge is central to communicative competence and the acquisition of a second or foreign language, and a lack of vocabulary knowledge is an obstacle to learning. Consequently, also in the field of vocabulary learning strategies, it is revealed by Alharbi (2015) notes that learners classified as having a "high English proficiency level" agreed that building a synonymy network, learning definitions with context, the pronunciation process, bookmark word searches, and remembering strategies for writing are more effective as learning strategies in building vocabulary knowledge. Based on the results, Alharbi also advances the notion that vocabulary learning strategies should be used as explicitly as possible and introduced to English language learners from the early stages of language learning, especially during vocabulary learning practices.

In the Philippines, a multitude of research undertakings have also been conducted in the field of language learning and vocabulary development. Magno (2009) identified certain factors reported by college students relating to how they learned to speak English. With a sample of 42 students and an open-ended survey, the study reported that the participants acquired the English language at an average age of 1.5 years. Additionally, while formal education played a role in the learning of English, socialization processes (with parents, other family members, media, and school) are regarded as the most effective, followed by self-initiated processes.

Assessment of Vocabulary Knowledge

Language learning researchers have used a variety of approaches to improve traditional vocabulary learning and knowledge, particularly by incorporating factors such as multidimensionality and heterogeneity. Pearson et al. (2012) studied the development of the general state of vocabulary assessment. By first identifying the four types of vocabulary (listening, speaking, writing, and reading), they identify how vocabulary assessments have developed. Along with this, they cite several vocabulary tests. The Peabody Picture Vocabulary Test, in particular, uses listening to assess learners' vocabulary knowledge. As for the origin of standardized vocabulary tests, the researchers noted that this came about from the need to conduct large-scale, easily administered, and scoreable assessments to test recruits for World War I. By the 1970s, the first steps to include contextualization, as brought about by recent developments in the understanding of language, had been taken. With the advent of computerization and automation, vocabulary assessment also leaped, further easing the administration and improving reliability.

Finally, Scott et al. (2008) developed the Multiple Level Vocabulary Assessment (MLVA) tool in 2008, based on the principle of incremental stages of word learning. The MLVA tool was created in response to a lack of more appropriate vocabulary assessments, as well as the fact that most assessments fail to use words that students encounter and study. As a result, the researcher developed an assessment tool with the necessary psychometric properties to be reliable and trustworthy, as well as a more modern understanding of the nature of vocabulary knowledge.

Central to the development of the MLVA is the choice of words. This was primarily done by creating a corpus of words from the reading materials that the target students are using and are appropriate for their grade level. To capture the incremental aspect of word learning, a five-question measure of gradations of knowledge about the word was formulated from this corpus.

The questions were designed to encompass a broader base of knowledge in terms of vocabulary. The first question of the testlets required test-takers to make a recognition judgment about whether they had encountered the target word. If the test-takers were able to recognize the word, they proceeded to the next question of the testlets, but if they had neither heard nor seen the word, they were instead instructed to proceed to the next word. The second word of the testlet required the test-takers to make a personal judgment regarding their knowledge of the target word. Both the first and second questions of the testlet dealt with the first level of vocabulary knowledge, recognition.

As for the second level, General Association, the third question requires students to identify the semantic field of the word by identifying concepts and ideas that the word is generally associated with. Finally, the fourth and fifth questions of the testlets both relate to the Synthesis level. The fourth question takes the form of the traditional tests of vocabulary, requiring test-takers to choose the correct definition of the word, while the final question requires test-takers to classify the word according to its part of speech.

The researchers admitted that, though one particular strength of the MLVA tool is that it is essentially a reflection of the curriculum, the same can also be regarded as its limitation. As such, the use of the MLVA should always be specific to the target population and the curriculum of the grade level at which it is administered.

Ultimately, the MLVA tool can be utilized on a larger scale to provide an in-depth assessment of the general vocabulary development of language learners across different grade levels. The MLVA is also proof that vocabulary tests need not be confined to traditional methods and that they can instead cover the complexity of word knowledge.

As studies on vocabulary knowledge in the field of education became more prevalent over the past decades, it was expected that research trends on such matters

would also explore the common problems that relate to overall problems in the development of vocabulary knowledge.

Larsson (2014) investigated student and teacher attitudes toward English vocabulary learning and teaching. By making use of questionnaires on vocabulary learning and teaching, 75 students from two secondary schools and 24 English teachers from several schools in Sweden expressed positive views on the general process of vocabulary learning. A particular note-worthy aspect of this study is how both teachers and students preferred implicit vocabulary learning to be most effective, but both parties agreed it was also utilized to a lesser extent compared to explicit methods.

As to the application of English education, specifically a language skills program, Dar and Go (2016) studied the National Achievement Test (NAT) results of fourth-year high school students in selected Manila public schools, the comparison and correlation were then used as the basis for a language skills program for senior high school students in the new K–12 curriculum in the Philippines. The "moderately satisfactory" performance in the English area of the National Achievement Test was then correlated to the overall academic performance of students, indicating a very high positive relationship. This, in turn, would also mean that poor performance in the subsequent NAT would also mean poor academic performance, hence the proposal of an Integrated English Language Skills Program.

With all of the preceding conceptual knowledge and research conducted in the field of vocabulary knowledge, it is clear that, while it is widely recognized as important in the field of language learning, there remains a significant amount of knowledge to be bridged in vocabulary knowledge and language learning, especially for studies that take into account vocabulary learning in gradations such as multiple-level knowledge.

It is also the insights provided by the aforementioned literature and research that this research is predicated on. A general understanding arose from the general views and research conducted on the overall nature of vocabulary that vocabulary assessment remains a viable field of developmental research and studies.

METHODOLOGY

Research Design

The mixed-methods research (MMR) methodology was used in this study. Since the general aim of the study is to determine the current vocabulary knowledge of the respondents along the identified levels, it will take the form of a knowledge assessment in the form of a questionnaire. The results of the questionnaire are then analyzed and serve as the basis for determining the multiple-level vocabulary knowledge of the students. As such, the study also utilized the documentary analysis method. As for the

limiting factors as perceived by the students relating to their extent of knowledge, a structured interview was conducted.

Respondents of the Study

Grade 11 students of Manaoag National High School seniors participated in the study. Manaoag National High School is one of the larger national high schools in the province and it is compliant with the rules and regulations set by the Department of Education concerning the senior high school program. The school has 17 sections across several strands (General Academic Strand, Humanities and Social Sciences, Science, Technology, Engineering, and Mathematics, Accountancy, Business and Management, and Technical-Vocational-Livelihood).

By using Raosoft's (2004) sample size calculator, set at a 90% confidence level, 198 students across the 17 Grade 11 sections were selected as respondents to the study. Stratified random sampling was employed to ensure that the 198 students were equally selected across all the sections.

Table 1. Population and Sample Size of Grade 11 Students

Section	Number of Students	Sample Size
11 ABM McGregor	44	12
11 ABM Smith	43	12
11 GAS Franklin	51	14
11 HUMSS Confucius	45	12
11 HUMSS Descartes	48	13
11 HUMSS Lao Tzu	41	11
11 STEM Gauss	51	14
11 STEM Nightingale	48	13
11 BPP Goldman	43	12
11 Cookery Comerford	34	9
11 Cookery Ramsay	39	11
11 EPAS Tesla	48	13
11 EPAS Volta	43	12
11 FBS Sporke	47	13
11 ICT Clark	40	11
11 ICT Gosling	33	9
11 ICT Fox	30	8
TOTAL	728	198

Data Gathering Instruments

The study adopted the Multiple-Level Vocabulary Assessment Tool developed by Scott et al. (2008). Originally developed for the Vocabulary Innovation in Education (VINE) Project, the tool was the product of several years of careful assessment of the reading materials of the target population.

Concerning the multiple levels of vocabulary learning, the final words identified and included in the questionnaire had a testlet, a five-question measure of the word's gradations of knowledge across the three levels (recognition, General Association, and synthesis). The testlet specifically met the following requirements:

1. The first level of vocabulary knowledge deals with recognition and covers the first-two questions of the testlets.
 - The first question is designed to elicit recognition (Have you ever seen or heard of this word before?). Should the test taker answer "no," they will be directed to the next testlet.
 - The second question concerns the test takers' belief in their knowledge of the word (How well do you know this word?)
2. The second level dealing with General Association is covered by the third question, which requires the student to identify the word's semantic field (I think the word might have something to do with?).
3. Finally, the fourth and fifth questions of the testlets dealt with the Synthesis level.
 - The fourth question requires students to choose the correct definition of the word (I think the word means ...).
 - The last question would require students to classify the word according to its word class.

As for the perceived limiting factors relating to vocabulary knowledge, a semi-structured interview guide was utilized. This interview guide was structured around the four (4) factors identified by El-Omari (2016), namely, attitudinal, socio-economic, social, and extra-curricular.

The researchers opted to modify the MLVA tool, carefully taking note of the same procedures that the original authors of the tool took into consideration. Specifically, the revision of the items of the questionnaires followed the same steps, namely:

1. creation of a corpus from all distinct words considered by the target population (Grade 11 students) It is noteworthy that the corpus was drawn from reading materials deemed a requirement for the students.
2. construction of the words for the final questionnaire is based on the initial corpus, which ensures the multidimensionality of the parts of speech.

One of the crucial elements of the MLVA tool is the appropriate selection of the words to be included. For this purpose, the researcher prepared fifty (50) words from the corpus derived from the reading materials of the senior high school students and opted for a validation process by eliciting the knowledge and expertise of three (3) English teachers of Manaoag National High School to identify the words most suitable for the study, as in words that are expected to be part of the vocabulary repertoire of a senior high school student. Of the three, one is a Master Teacher II, another has served as school paper adviser for the English publication of the school, and the other has been teaching English for more than five (5) years and is also currently teaching at the senior high school department.

Concerning the semi-structured interview, the researcher opted to return on a separate day. On the scheduled day of the interview, the interviewees were interviewed individually to secure their anonymity and address any issues they may have had with the purpose and conduct of the study.

In terms of data collection, the interviewees were first asked if they would consent to the interview being recorded, with the researcher ensuring that the recordings are properly secured. The researcher took notes during the interview sessions. The interview lasted approximately five minutes per interviewee.

RESULTS

Multiple-Level Vocabulary Assessment of Senior High School Students

The first two questions of the testlets deal with the level of recognition among students. It is important to reiterate that the questionnaire is structured so that if the students answer "No" to the first question, they are immediately directed to the next word, which would immediately warrant them a 0 on all succeeding questions of the testlet. Table 2 below shows the tabulated responses of the students on the first question on the testlets.

The next question of the testlet deals with the assessment by the students of the extent of their knowledge of the words. Table 3 shows the detailed distribution of the students' answers for admission of knowledge.

Table 2. Responses to the First Question of the Testlets Regarding Recognition (n = 198)

Word	NO		YES		RANK
	Freq	%	Freq	%	
Apathetic	61	30.81	137	69.19	11
Blissfully	32	16.16	165	83.84	9
Comprehend	24	12.12	174	87.88	5
Contaminated	20	10.10	178	89.90	3
Contemplation	94	47.47	104	52.53	13
Fateful	36	18.18	162	81.82	10
Frigid	104	52.53	94	47.47	15
Impertinent	144	72.73	54	27.27	18
Luxury	27	13.64	171	86.36	6
Montage	62	31.31	136	68.69	12
Omnipotent	105	53.03	93	46.97	16
Particles	18	9.09	180	90.91	2
Phenomenon	12	6.06	186	93.94	1
Rejoined	30	15.15	168	84.85	8
Sarcastic	29	14.65	169	85.35	7
Summit	21	10.61	177	89.39	4
Threshold	123	62.12	75	37.88	17
Transient	96	48.48	102	51.52	14

Table 3. Responses to the Second Question of the Testlets Relating to Admission of Knowledge (n=varies)

Word	Valid Number of Respondents	I have heard of it, but not sure what it means		I think I know what it means		RANK
		Freq	%	Freq	%	
Apathetic	137	101	73.72	36	26.28	18
Blissfully	165	91	55.15	74	44.85	11
Comprehend	174	88	50.57	86	49.43	7
Contaminated	178	56	31.46	122	68.54	1
Contemplation	104	73	70.19	31	29.81	16
Fateful	162	82	50.62	80	49.38	8
Frigid	94	64	68.09	30	31.91	15
Impertinent	54	39	72.22	15	27.78	17
Luxury	171	79	46.20	92	53.80	6
Montage	136	70	51.47	66	48.53	9
Omnipotent	93	58	62.37	35	37.63	14
Particles	180	65	36.11	115	63.89	3
Phenomenon	186	85	45.70	101	54.30	5
Rejoined	168	92	54.76	76	45.24	10
Sarcastic	169	58	34.32	111	65.68	2
Summit	177	75	42.37	102	57.63	4
Threshold	75	42	56.00	33	44.00	12
Transient	102	61	59.80	41	40.20	13

The third question of the testlets is about the words' General Associations. As a result, the table below depicts the respondents' overall performance in correctly associating the target words with the corresponding general concepts, ideas, or semantic fields. This level of the MLVA is critical because it is the next step after correctly recognizing a word. This is shown in Table 4 below.

Table 4. Responses to the Third Question of the Testlets Relating to General Association
(n = varies)

Word	Valid Number of Respondents	Incorrect		Correct		RANK
		Freq	%	Freq	%	
Apathetic	137	25	18.25	112	81.75	6
Blissfully	165	30	18.18	135	81.82	5
Comprehend	174	21	12.07	153	87.93	1
Contaminated	178	53	29.78	125	70.22	9
Contemplation	104	75	72.12	29	27.88	17
Fateful	162	107	66.05	55	33.95	16
Frigid	94	44	46.81	50	53.19	12
Impertinent	54	20	37.04	34	62.96	10
Luxury	171	46	26.90	125	73.10	8
Montage	136	79	58.09	57	41.91	14
Omnipotent	93	49	52.69	44	47.31	13
Particles	180	28	15.56	152	84.44	2
Phenomenon	186	75	40.32	111	59.68	11
Rejoined	168	41	24.40	127	75.60	7
Sarcastic	169	27	15.98	142	84.02	3
Summit	177	29	16.38	148	83.62	4
Threshold	75	49	65.33	26	34.67	15
Transient	102	74	72.55	28	27.45	18

The fourth question of the testlets dealt with the respondent's ability to correctly choose the actual meaning of the words. This particular level is what was generally referred to in conventional vocabulary assessments, but is not the sole focus of more modern forms of vocabulary assessments like the MLVA. Table 5 below shows the detailed distribution of the students' responses to actual word meaning.

Finally, the fifth and last question of the testlets aims to measure the knowledge of the students to properly identify the classification of the words. It is important to note that the ability to properly classify a word entails knowledge of its formation (as in the analysis of the morphemes that constitute the word), its function (as in the actual meaning of the word), and how it appears in a sentence (as in the relationship of the word with the other words surrounding it). This is shown in detail below in Table 6.

Table 5. Responses on the Fourth Question of the Testlets Relating to Actual Word Meaning (n = varies)

Word	Valid Number of Respondents	Incorrect		Correct		RANK
		Freq	%	Freq	%	
Apathetic	137	34	24.82	103	75.18	6
Blissfully	165	42	25.45	123	74.55	7
Comprehend	174	68	39.08	106	60.92	10
Contaminated	178	32	17.98	146	82.02	2
Contemplation	104	73	70.19	31	29.81	18
Fateful	162	53	32.72	109	67.28	9
Frigid	94	44	46.81	50	53.19	12
Impertinent	54	23	42.59	31	57.41	11
Luxury	171	53	30.99	118	69.01	8
Montage	136	89	65.44	47	34.56	16
Omnipotent	93	54	58.06	39	41.94	15
Particles	180	39	21.67	141	78.33	3
Phenomenon	186	97	52.15	89	47.85	14
Rejoined	168	39	23.21	129	76.79	4
Sarcastic	169	41	24.26	128	75.74	5
Summit	177	30	16.95	147	83.05	1
Threshold	75	52	69.33	23	30.67	17
Transient	102	49	48.04	53	51.96	13

Table 6. Responses to the Fifth Question Relating to Word Classification (n = varies)

Word	Valid Number of Respondents	Incorrect		Correct		RANK
		Freq	%	Freq	%	
Apathetic	137	73	53.28	64	46.72	8
Blissfully	165	128	77.58	37	22.42	18
Comprehend	174	105	60.34	69	39.66	15
Contaminated	178	72	40.45	106	59.55	2
Contemplation	104	67	64.42	37	35.58	17
Fateful	162	88	54.32	74	45.68	12
Frigid	94	54	57.45	40	42.55	14
Impertinent	54	31	57.41	23	42.59	13
Luxury	171	106	61.99	65	38.01	16
Montage	136	73	53.68	63	46.32	10
Omnipotent	93	44	47.31	49	52.69	5
Particles	180	86	47.78	94	52.22	6
Phenomenon	186	78	41.94	108	58.06	4
Rejoined	168	91	54.17	77	45.83	11
Sarcastic	169	86	50.89	83	49.11	7
Summit	177	72	40.68	105	59.32	3
Threshold	75	40	53.33	35	46.67	9
Transient	102	37	36.27	65	63.73	1

Summary of the Over-All Multiple-level Knowledge

While the individual results of the questions in the testlets already reveal much about the current multiple-level vocabulary knowledge of the senior high school students, the overall situation of their vocabulary knowledge is only revealed upon analysis of the relationship between the means of the levels.

Table 6. Frequency and Percentage Across All Questions/Levels of the Testlets

Word	Recognition				General Association		Synthesis			
	Identification		Admission of Word Knowledge				Actual Word Meaning		Word Classification	
	f	%	f	%	f	%	f	%	f	%
Apathetic	137	69.19	36	26.28	112	81.75	103	75.18	64	46.72
Blissfully	165	83.84	74	44.85	135	81.82	123	74.55	37	22.42
Comprehend	174	87.88	86	49.43	153	87.93	106	60.92	69	39.66
Contaminated	178	89.90	122	68.54	125	70.22	146	82.02	106	59.55
Contemplation	104	52.53	31	29.81	29	27.88	31	29.81	37	35.58
Fateful	162	81.82	80	49.38	55	33.95	109	67.28	74	45.68
Frigid	94	47.47	30	31.91	50	53.19	50	53.19	40	42.55
Impertinent	54	27.27	15	27.78	34	62.96	31	57.41	23	42.59
Luxury	171	86.36	92	53.80	125	73.10	118	69.01	65	38.01
Montage	136	68.69	66	48.53	57	41.91	47	34.56	63	46.32
Omnipotent	93	46.97	35	37.63	44	47.31	39	41.94	49	52.69
Particles	180	90.91	115	63.89	152	84.44	141	78.33	94	52.22
Phenomenon	186	93.94	101	54.30	111	59.68	89	47.85	108	58.06
Rejoined	168	84.85	76	45.24	127	75.60	129	76.79	77	45.83
Sarcastic	169	85.35	111	65.68	142	84.02	128	75.74	83	49.11
Summit	177	89.39	102	57.63	148	83.62	147	83.05	105	59.32
Threshold	75	37.88	33	44.00	26	34.67	23	30.67	35	46.67
Transient	102	51.52	41	40.20	28	27.45	53	51.96	65	63.73
MEAN	69.10		46.60		61.75		60.57		47.04	
	57.85						53.805			

Legend: f: frequency of correct responses; % - % compared to valid responses

As shown in the table above, there is a downward trend in the number of students who qualify on the recognition level and progress to the General Association level. The results reflected in the table continue the trend of the current vocabulary knowledge of the respondents failing to meet what is expected of senior high school students. A crucial factor in these very low scores is the fact that identifying the correct word class entails careful analysis of not only the word's meaning but also how the word is constructed and how it is used in sentences. As such, the results are reflective of the situation that students readily become content with the traditional view of vocabulary as mere knowledge of its actual meaning, disregarding the fact that a word can generally change in its meaning depending on how it is constructed and used in a sentence, hence why some words belong to more than one classification in the parts of speech.

Limiting Factors that Hinder Extent of Vocabulary Knowledge as Perceived by Senior High School Students

The following are the results of the semi-structured interview with the senior high school students that dealt with the limiting factors they identified that hinder their development of vocabulary knowledge. These results of the interview are classified into the main four factors as identified by El-Omari (2016). Attitudinal factors encompassed the first two questions of the interview guide. Upon careful analysis of the varied responses of the interviewees, their attitude towards learning English and the English language, in general, is revealed.

Most of the students (n = 147 out of 203) view learning English as a mere requirement to pass or achieve more long-term goals. This is made evident in several instances where the interviewees mentioned that they only study English because it is required for them to understand their other subjects, which are written and taught using the English language. While there are also interviewees who appreciate and do enjoy learning English, this sentiment is not dominant among the group. In the middle of the spectrum, some students value and make an effort to learn English, but only as part of their preparation to work abroad.

With regards to attitudes towards developing English vocabulary, there is not much variation. The majority of the interviewees (n = 136 out of 203) understand that developing vocabulary is essential to their pursuit of furthering their communicative competence using the English language. They do not develop their vocabulary for the sake of developing it, but rather see it as a required step in improving their ability to understand, speak, and write in English. As a result, the students' perspectives on attitudinal factors as a barrier to developing their English vocabulary differ. This particular finding echoes the result of El-Omari (2016), who also notes that attitudinal factors, though largely varying across students, are very significant in terms of affecting general achievement in English language learning.

The third and fourth questions of the interview guide dealt with socio-economic factors that may or may not act as hindering factors in vocabulary development. In particular, the third question dealt with the self-assessment of the interviewees' socio-economic status (e.g., poor, average, rich). As can be expected from a 1st class municipality like Manaoag, most of the students (n = 176 out of 203) perceive themselves as belonging to poor families, with a scant number admitting to belonging to middle-class families.

About the fourth question, the responses are much more varied. The majority of the students (n = 123 out of 203) believe that their socio-economic status plays an important part in their ability and opportunity to develop their English vocabulary.

Particularly, several of the respondents mentioned that they did not have enough opportunity to improve their vocabulary outside of school because they needed to help augment the income of their families by selling various types of merchandise in the market during weekends. Some of the students also mentioned that they do not have the time to study since they need to tend to house chores because their parents are focused on earning a living for the family. A common theme among students who stated that they needed to supplement their family's income was to take advantage of the town's dominant industry (i.e., tourism). They do so by selling various types of merchandise, like candles and religious articles. This is also supported again by the study of El-Omari (2016), where the author notes that students from high-income families report achieving higher grades in learning English than those from low-income families.

As compared to the first two factors, social factors appear to play more crucial roles in hindering vocabulary development among the interviewees. The fifth question of the interview guide dealt with their immediate family members and other household members that may serve as conversational partners in speaking the English language. Unfortunately, all respondents revealed they do not talk with other household members in English, even as some of them also admitted that they are living with people they consider to be proficient in using the English language.

There is a much more positive response from their peers. The majority of interviewees (n = 168 out of 203), in particular, admit to knowing a friend who they consider to be fluent in English. However, the same cannot be said about using English in everyday conversation. Outside of prescribed English-speaking activities in the classroom, the majority of interviewees (n = 187 out of 203) reveal that they very rarely speak with their friends in English. They prefer to communicate in either Filipino or regional languages such as Pangasinan and Ilocano.

A small number of the participants (n = 13 out of 203), however, do admit to speaking English with their friends. Even this, however, is limited to a very small circle of friends. And even then, they do so irregularly and only when it strikes their fancy. As such, it can be seen that even though social factors are considered essential by El-Omari (2016), the respondents fail to capitalize on this. While most (n = 192 out of 203) of them do understand that English is essential, they still do not take advantage of the opportunity to speak with their peers in English.

Questions seven (7) through eleven (11) of the interview guide deal with activities that the students engage in outside of actual school work and activities that aim to develop their vocabulary further. The responses to the interview guide's seventh question are extremely varied. Because it was about their reading materials, their responses generally reflected their preferences. While a number of the interviewees mention that they do not read outside of any required school work, some do engage in leisure reading. As for those who do indeed read, their choices of reading material also

vary greatly, from "Wattpad" short stories and novels to translated mangas and newspapers.

A particularly interesting fact to note is that the majority (n = 27 out of 46) of those who do engage in reading for pleasure choose Wattpad short stories. These stories are usually written in Filipino, but they admit that there are also stories written in English. This particular attitude towards reading is reflective of the understanding of students nowadays considered to be "Digital Natives." As such, though these materials are different in nature from the more conventional reading materials (actual books), they nevertheless provide the same opportunity for the students to develop their vocabulary. The nature and themes explored by these "Wattpad" stories are also very relatable to the students, which in turn plays a crucial role in their continued habit of reading.

The eight questions dealing with the English media consumption of the respondents yielded almost the same results. The majority of the respondents (n = 190 out of 203) admit that they do indeed watch English programs on the radio or television. However, they also note that even as they watch these programs, most of them (n = 176 out of 190) still prefer to watch or listen to them in Filipino. The respondents also mention that most of their preferred programs (n = 181 out of 203) to watch via television are teledramas (both locally and internationally produced) and news programs. Since these programs are usually aired using the Filipino language, they provide very few opportunities to develop their English vocabulary knowledge. The same can be said about radio programs, because the majority of radio programs broadcast within the municipality use the Filipino language, as well as the sparse Pangasinan and Ilocano languages. Particularly, this result mirrors that of El-Omari (2016), where the author also notes that students who consume English-language media report better achievement in the English language.

The responses of the interviewees are also observably the same for the most (n = 196 out of 203) part for the ninth question, which dealt with games and Internet usage. The most commonly visited sites for the respondents are social networking sites (Facebook, Instagram, and Twitter), with the occasional educational resource as necessitated by subject assignments. Since these social networking sites have their interfaces set in the English language by default, it became mandatory for the respondents to learn the meaning and purpose of the various functions by trying them out, eventually leading them to effectively learn the meaning of the word. Additionally, the respondents also reveal that they also develop their English vocabulary as they browse these social networking sites since they have some friends who post status updates or updates in English, celebrities they follow also regularly update using the English language, and photos are usually captioned using the English language. As such, it can be viewed that their exposure to social networking sites also serves to augment or develop their vocabulary through actual understanding and usage of the words, ideally

making them "learn by context." In general, exposure to websites, particularly social networking sites, should be viewed as a means of developing vocabulary through actual communicative situations rather than as a hindrance.

Like with social networking sites, games played also serve to help develop their vocabulary through the English interface of these games, albeit to a lesser degree. What's more interesting to note in their use of games is how they interact with each other. While respondents respond positively to English communication in social media, the same is quite the opposite for games, as they generally prefer to communicate using the Filipino language, with the occasional Pangasinan or Ilocano utterance.

As for the usage of a dictionary to develop their vocabulary, only a minority of the respondents admitted to having a dictionary app on their smartphones. Even then, they admit to only using it on very few occasions, mainly to consult the meaning of a newly encountered word or to verify their knowledge of a word, but never to actively use it to improve their vocabulary.

DISCUSSION

With regards to the Recognition Level alone, out of the 203 respondents, on average, only 69.10% admitted to having encountered the words. From there, of the respondents who answered, they countered the words; only around 46.60% of them have confidence in the meaning of the words. In total, the recognition level received a mean of 57.85. These particular results came from the first two questions of the testlets and are indicative of the exposure of the students with regards to the English language, revealing that even with their grade levels, they have very minimal exposure to words that should have already been fully incorporated into their vocabulary repertoire.

Furthermore, even though some students managed to correctly choose the General Association, the exact meaning, and the classification of the words, they still do not express confidence in their knowledge of the words. This is evident by the fact that the lowest mean was for the second question of the testlets. While a lot of factors may be relevant to the current state of their expression of confidence in their vocabulary knowledge, the results also surmise the general perception of the students with regards to vocabulary knowledge development, and by extension, English language learning; that such an endeavor is difficult and cannot be easily mastered.

From here, when compared to the number of correct responses at the General Association level, the trend increases slightly. Of the respondents who answered "yes" on the first question (thereby marking them on the recognition level), on average, 61.75% were able to correctly ascertain the General Association of the words. While this is lower

compared to recognition (identification), it is higher when compared to those who expressed confidence in recognition (admission of knowledge). Therefore, a number of the respondents may have seen or heard of the words but did not express confidence in their knowledge of the words but managed to properly ascertain the correct General Association. This is very evident in the case of "apathetic," where out of the 198 respondents, only 137 said they have at least read or heard of the word. Then, of the 137 respondents, only 36 expressed different levels of confidence in their knowledge of the word. From here, of the 137 valid respondents, 112 managed to correctly identify the General Association, illustrating the aforementioned marked increase.

This, however, is not uniform with all the words. Take the case of the word "transient." Of the 198 respondents, only 102 have seen or heard of the word. Then, out of these 102, only 41 (40.20%) expressed confidence in their knowledge of the word. Finally, only 28 were able to correctly identify the General Association of the word, a drop of 27.45%. This graph depicts the decline in the number of students progressing from Recognition to General Association, indicating that some students expressed confidence in their knowledge of the word but still failed to correctly identify the General Association of the words. Such results could be attributed to the fact that, while they may have an idea of what it means, properly identifying word associations would necessitate them to relate the word to other concepts.

With regards to Synthesis (Word Meaning) as compared to General Association, there is a marked increase. As such, this shows that some students may have failed to properly identify the General Association of the words but managed to correctly identify the meaning. An example of this is the word "FATEFUL," which only received 55 correct responses in General Association but received 109 correct responses in identifying the meaning, nearly doubling the number. Conversely, some students have correctly identified the General Association but failed to properly identify the meaning of the words. The word "threshold" is an example of this, where there were 26 people who correctly identified the General Association of the word, and of them, only 23 chose the correct meaning of the word.

It is worth noting that word meaning is frequently regarded as the sole measure of vocabulary knowledge. As a result, it becomes extremely important for vocabulary development. Correctly identifying the concepts associated with the word would pave the way for correctly determining the word's exact meaning.

When comparing Synthesis (Word Classification) to General Association, the overall trend is negative. This is best demonstrated by the word "PHENOMENON," where 108 of the 111 correct General Association responses correctly identified the word classification. Some students, on the other hand, can correctly identify the classification of the words while failing to correctly identify their General Associations. This is demonstrated by the word "TRANSIENT," where only 28 people correctly identified the word's General Associations while 65 correctly identified the classification of the words.

Word classifications go further than just knowing the exact meaning of the word. Properly classifying a word entails knowledge of how it can be used in several instances. There are words that can be classified as both adjectives and verbs. This in turn contributes to the complexity of the synthesis level of vocabulary knowledge.

Finally, as the results covered the words chosen by the expert validators, it can also be surmised that improving the tool via the inclusion or exclusion of more words would constitute an even more substantial and concrete view of their multiple-level vocabulary knowledge.

CONCLUSIONS AND RECOMMENDATIONS

This study was conducted to assess the multiple-level vocabulary knowledge of senior high school students, determine the limiting factors that hinder vocabulary development, and propose a vocabulary enhancement material to address and augment the needs of senior high school students.

According to the findings of the study, senior high school students perform poorly across all multiple levels of vocabulary knowledge. Since the words used in the assessment were identified by their very own teachers as being expected of them, the senior high school students fail on these expectations.

Concerning the limiting factors that impede students' vocabulary knowledge, it is revealed that all four aforementioned factors do impede vocabulary knowledge, albeit to varying degrees. The analysis of the four (4) factors (attitude, socioeconomic, social, and extracurricular) reveals how these factors affect their overall opportunity and motivation to participate in vocabulary development activities. More compelling is how, in the process of attempting to comprehend the limiting factors, the respondents revealed several opportunities, which were then capitalized on through the design of the vocabulary enhancement material.

With the results of the study, the following recommendations are forwarded.

1. Vocabulary enhancement tools will be constructed based on the performance of the students. This can take the form of a vocabulary enhancement. The material addresses directly the limitations of the currently available materials that aim to boost vocabulary knowledge.
2. This study only included Senior High School students, particularly those from a National High School for single mothers. As a result, a broader study scope (i.e., covering all levels of the basic education curriculum, multiple mother national high schools, etc.) would provide a more comprehensive picture of students' multiple-level vocabulary knowledge. A closer examination of the curriculum of Senior High Schools could also be conducted to determine the specific reasons why they perform below the expectations of their teachers.

IMPLICATIONS

Even though the Philippines remains one of the world's largest English-speaking countries, significant progress in the field of English language teaching, particularly in the vocabulary development of secondary students, remains to be made. While vocabulary assessments are commonly used as part of language assessments, given the findings of this study, there is a need to conduct them in a more holistic manner. Furthermore, the findings of this study can help education specialists, school administrators, and classroom English teachers better understand the various aspects of vocabulary development and its importance in English language teaching.

DECLARATIONS

Conflict of Interest

The authors declare that there have been no conflicts of interest in the conduct of the study.

Informed Consent

The authors declare that the participants have been properly informed before the conduct of the study.

Ethics Approval

Ethics approval has not yet been secured as it is yet to be institutionalized in the institution.

REFERENCES

- Afflerbach, P. (2005). High Stakes Testing and Reading Assessment. National Reading Conference Policy Brief. *Journal of Literacy Research*, 37(2), 153-154.
- Alharbi, A. (2015). Building Vocabulary for Language Learning: Approach for ESL Learners to Study New Vocabulary. *Journal of International Students*, 5(04), 501-511.
- Alqahtani, M. (2015). The Importance of Vocabulary in Language Learning and How to be Taught. *International Journal of Teaching and Education*, 3(03), 30-31.
- Dar, M.A., & Go, M.B., (2016). The National Achievement Test Performance in English of Selected Public Schools: Basis for a Proposed Language Skills Program. *International Conference on Research in Social Sciences, Humanities and Education*. Cebu, Philippines.

- Department of Education. (2015). *Education for All 2015 National Review Report: Philippines*. Retrieved from <https://www.seameo-innotech.org/wp-content/uploads/2020/04/EFA-Part-2-V12.pdf> .
- El-Omari, A.H. (2016). Factors Affecting Students' Achievement in English Language Learning. *Journal of Education and Social Research*, 6(2), 14-16.
- Harmon, J., Wood, K., & Kiser, K. (2009). *Promoting Vocabulary Learning with the Interactive Word Mall*. *Middle School Journal*, 40(3), 58-63.
- Huckin, T. (1995). *Second Language Reading and Vocabulary Learning*. New Jersey: Ablex Publishing Corporation.
- Larsson, T. (2014). *Vocabulary Learning: A Study of Students' and Teachers' Attitudes Towards English Vocabulary Learning in Lower Secondary School* (unpublished manuscript). Karlstads University, Sweden.
- Lucas, I., Miraflores, R., & Go, D., (2011). English Language Learning Anxiety among Foreign Language Learners in the Philippines. *Philippine ESL Journal*, 7(2011), 94-119.
- Magno, Carlo. (2010). The role of metacognitive skills in developing critical thinking. *Metacognition and Learning*, 5(2), 137-156. <https://doi.org/10.1007/s11409-010-9054-4>.
- Maximo, R. (2000). Effects of role, context, keyword, and context/ keyword method on retention of vocabulary in EFL classroom. *Language Learning*, 50(2), 385-412.
- Meara, P. (1980). Vocabulary Acquisition: A Neglected Aspect of Language Learning. *Language Teaching and Linguistics Abstracts*, 13, 1-9.
- Nagy, W. E., & Scott, J.A. (2000). Vocabulary Processes. In M. Kamil, P. Mosenthal, P.D. Pearson, & R. Barr (Eds.), *Handbook of Reading Research, Volume 3*. New Jersey: Lawrence Erlbaum Associates.
- Oxford, R. (2003). *Language Learning Styles and Strategies: An Overview*. GALA.
- Pearson, P. D., Hiebert, E. H., & Kamil, M. L. (2007). Vocabulary assessment: What we know and what we need to learn. *Reading Research Quarterly*, 42(2), 282-296.
- Pearson, P.D., Hiebert, E.H., & Kamil, M.L. (2012), *Vocabulary Instruction: Research to Practice (2nd Ed.)*. Guilford Press.
- Raosoft Inc. (2004). *Sample Size Calculator*. Retrieved from <http://www.raosoft.com/samplesize.html>
- Scott, J., Nagy, B., & Flinspach, S. (2008). More than merely words: Redefining vocabulary learning in a culturally and linguistically diverse society. In A. Farstrup & J. Samuels (Eds.), *What Research Has to Say About Vocabulary Instruction* (pp. 182-210). International Reading Association.
- Scott, J., Lubliner, S., & Hiebert, E. (2006). Constructs Underlying Word Selection and Assessment Tasks in the Archival Research on Vocabulary Instruction. In J.V. Hoffman, D.L. Schallert, C.M. Fairbanks, J. Worthy, & B. Maloch (Eds.), *55th year-book of the National Reading Conference* (pp. 264-275). National Reading Conference.
- Texas Education Agency. (2002). *Comprehension Instruction*. Texas Education Agency.
- Walters, J.D. (2006). Teaching the Use of Context to Infer Meaning: A Longitudinal L1 and L2 Vocabulary Research. *Language Teaching*, 37(4), 243-252.
- Wilkins, D. (1972). *Linguistics in Language Teaching*. Arnold.