

## Potential of Interactive ICT-Based Instructional Material to Develop the Vocabulary Skills of Grade 7 Students of Amontay National High School

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### Abstract

This study aimed to identify the potential of Interactive ICT-Based Instructional material to develop the vocabulary skills of selected grade 7 students of Amontay National High School. A quasi-experimental method of research was used in the completion of this research. The collected data were statistically analyzed, using percentage score, 90% - 100% interpreted as outstanding, 85%-89% very satisfactory, 80%-84% satisfactory, 75%-79% fairly satisfactory and below 75% did not meet expectations which were based on DepEd Order No.8, s.2015. On the other hand, the difference between the pre-test and post-test of the learners was statistically analyzed using paired sample t-test. The respondents of the study were the 35 grade 7 students who answered a validated survey and assessment questionnaire. Findings revealed that the majority of the words encountered by the grade 7 students in their subjects were very much unfamiliar. However, after using the Interactive ICT-Based Instructional material, their performance improved significantly. Findings also revealed that the difference between the pre-test and post-test in spelling meaning and grammar are statistically significant ( $p$ -value = .000) at 0.05 level of significance which rejected the null hypothesis for spelling, meaning, and grammar. The existence of significant difference tells that the proficiency in vocabulary skills of the grade 7 students in the pre-test and post-test differ significantly, likewise, findings revealed that the interactive ICT-based instructional material has the potential to develop the vocabulary skills of the Grade 7 learners, where reading comprehension may be added. Based on the conclusions, it was recommended that schools use the proposed enhanced Interactive ICT-Based instructional material for grade 7 students' vocabulary skills development in spelling, meaning, and grammar. Other language aspects may still be explored as to the involvement of reading comprehension activities.

**Keywords:** ICT-Based, Vocabulary Skills, Elementary Learners, Quasi-experimental Method

### Introduction

Vocabulary skills give life to the reading process. It has its fundamental usage to arrive at the closest idea the text expresses. It is a complex process by which students do their best to relate their experience to the meaning taken from the text provided by the connotation and denotations of the vocabulary. According to the National Reading Panel of the United States (NICHD, 2019) vocabulary is one of five major components of reading. It is important to overall school success and more specifically to reading comprehension. The National Reading Panel (NRP) added that vocabulary plays an important role both in learning to read and in comprehending text; readers cannot understand the text without knowing what most of the words mean. Teaching vocabulary will not guarantee success in reading, just as learning to read words will not guarantee success in reading. However, lacking either adequate word identification skills or adequate vocabulary will ensure failure (Biemiller, 2015), which has been a problem of the students in all levels whose English is not the native language.

In considerations of the regions in the country, in

Region IV-A, CALABARZON, students in high school can hardly recognize letter combinations and their phonological equivalent (Gutierrez et al., 2014), and can hardly give meaning to the words they meet in reading. As a result, reading and comprehension skills are poor, as well as grammar and language usage. The problems start from their lower grade levels and affect even in high school. Further, Region IV-A, CALABARZON has been identified as one of those with the lowest vocabulary skills in assessment results and reading comprehension compared to other regions which are brought by its big student population. With the 14 regions in the country, Region IV-A fell 2<sup>nd</sup> to the lowest in reading comprehension with only 48 percent general average mean led by National Capital Region with 83 percent. With this, the former Regional Director, Diosdado San Antonio, emphasized the need to maximize the school time to include vocabulary building activities in digital or traditional means as well as reading projects and interventions that would help the students read fluently with comprehension and high proficiency.

In the Division of Quezon, Grade 7 teachers in the transition level and even up to the higher level have experienced teaching students who can hardly identify

the correct spelling of words, give meanings to words, phrases, sentences, and paragraphs; were so poor in English language grammar; cannot even finish reading a sentence in a minute, and much more, cannot understand its meaning in many English language-related subjects.

The schools in the division as well as in the district of Pitogo are encouraged to do steps that would increase the reading achievement of the students in the elementary with different vocabulary building activities and strategies and with contextualized reading materials and worktext. However, the students remain passive in reading. They are task-oriented with outputs not finished or lack quality, further lacking the depth in reading. Students still end with a fact-finding attitude and cannot go beyond what is seen in the text due to a lack of the needed vocabulary skills in understanding. The comprehension of the students is too poor. Some high school students in the district do not know how to identify parts of speech, vocabulary, derive their meaning, and use them in various contexts.

Additionally, the researcher as a classroom teacher experienced students who are active in recitation and presentations but are completely passive in reading activities that involve vocabulary development activities. These students manage to speak in their native tongue but cannot perform in the English language. They want to talk about their experiences and ideas but do not want to engage in reading because they found boredom in it with the plain text and questions that are all foreign in meaning for them.

The vocabulary programs in the school as devised by the Filipino and English teachers seem not to earn many changes in the vocabulary enhancement of the students and their reading comprehension from the formative and summative assessment results. The grade 7 students cannot relate to the reading materials offered to them and consider it as simply a tiresome activity without significance. With this, the researcher tried to explore the use of ICT-based Intervention programs aiming to strengthen the proficiency level of the students in different English language unfamiliar words relevant to different subjects. This research was conducted to help students overcome their weaknesses in word meaning, grammar, use of words, and general boredom in reading through ICT-based materials and for them to see the significance of reading while primarily increasing their vocabulary and reading comprehension.

## Research Questions

This study aims to identify the potential of Interactive ICT-Based Instructional Material to help students increase their vocabulary skills and be able to use these skills in spelling, understanding meaning, and sentence usage of the words in Amontay National High School for the School Year 2019-2020 only. Specifically, it tried to answer the following:

1. Is there a significant difference in the vocabulary proficiency level among grade 7 learners based on the results of the pre-test and post-test?
2. Does the interactive ICT-Based Instructional Material have the potential to develop the vocabulary skills of the Grade 7 learners based on the result of this study?

## Literature Review

### Unfamiliar Words Encountered in English Language Materials

A good vocabulary system is an asset to a child; those who know more words are able to process various reading texts and are competent to engage in active conversation with people from different backgrounds and proficiency levels. Studies on vocabulary knowledge in the Malaysian setting have been conducted in certain areas. In a review by Moghadam, Zainal and Ghaderpour (2012) on the important role of vocabulary knowledge in reading comprehension performance, they posited that vocabulary learning is central in language acquisition, whether second or foreign language. Researchers have also suggested that knowing a word completely should take into consideration a variety of linguistic knowledge ranging from pronunciation, spelling and morphology to knowledge of antonym, synonym, hyponym, and collocational meanings. They also stated that vocabulary knowledge is an indicator of language ability and to be a competent second or foreign language learner, a great number of words is a dominant factor. Hence, such vocabulary knowledge is also required for successful reading comprehension.

In the Philippines each school is required to conduct Philippine Informal Reading Inventory to provide classroom teachers a tool for measuring and describing reading performance (Department of Education Order No. 14, s. 2018 & DepEd Memo No. 37, s. 2010). It is an assessment tool composed of graded passages designed to determine a student's reading level. It is important to note that the Phil-IRI only provides an approximation of the learner's abilities and may be

used in combination with other reliable tools of assessment (Nava et al., 2016).

The development of the Phil-IRI is one of the initiatives put in place in support of the “Every Child A Reader Program (ECARP)”. Before teachers can design and provide appropriate reading instruction for their students, they should be armed with information about their students’ current reading levels and abilities. This diagnostic approach to describing how children read embraces inclusionary principles that emphasize the need for education that is learner-oriented, responsive, and culturally sensitive.

The Phil-IRI is one of the diagnostic tools that teachers can use to determine students’ abilities and needs in reading. The Revised Phil-IRI was prepared in early 2013, prior to the introduction of the K-12 Curriculum. The readability level of the selections for oral and silent reading was based on the old English and Filipino curricula and were validated to pupils who were products of these old curricula; they were taught to read in Filipino and in English starting in Grade 1. Under the K-12 curriculum, the pupils are introduced to Reading in Filipino during the first semester of Grade 2 while Reading in English is introduced during the second semester. For example, the curriculum in Phonics and Word Recognition for Grade 2 English during the second semester is reading short e, a, and i words in consonant-vowel-consonant pattern.

By Grade 3, the curricular offering under word recognition includes: Read words with short o and u sounds in CVC pattern and common sight words; Read 2-syllable words consisting of short e to u sound (e. g.: basket, hotdog, sunset) in the first quarter; Read words with initial consonant blends (l, r and s blends) followed by short vowel sounds; Read words with initial and final consonant digraph ch and sh in the second quarter; Read words with long a, i, o and u sound (ending in e) one syllable and 2-syllables in the third quarter; and Read words with vowel digraphs ai (pail), ay (bay), ea (lead), ee (seed); Read words with vowel diphthongs oy (boy), oi (boil), ou (out) and ow (bow); Read some irregularly spelled words (e.g. such as enough, though, beautiful) in the fourth quarter. Phil-IRI is used to assess Silent Reading Comprehension and may be used to describe reading speed and comprehension. The student’s reading speed is measured by recording the time it takes the child to read each passage completely. Silent reading comprehension is measured by asking the student to answer five to eight questions of varying difficulty after a passage has been read by Grade 4 to 7 in English subject. In conducting Phil-IRI, teachers must

find the student’s independent, instructional and frustration levels. Awareness of a child’s reading levels can help the teacher identify materials that are suitable for developing the learner’s reading skills. Finding the independent level means that the child can read on his/her own without any assistance grade level passage.

To find the independent level, the test administrator continues to give a selection that is one level lower than a given selection until the child can register performance at 97 to 100% in word reading and 80 to 100% comprehension. It is important to find the independent level so that teachers would know the kind of text that the child is already able to perform well in. Providing material at the independent level may serve as a source of motivation or as a starting point for instruction. Finding the instructional level means that teachers look for the grade level passage that the child can read with the support of a teacher. This is the level where students make the most progress in reading. To find the instructional level, the test administrator continues to give a selection that is one level higher than the independent level passage until the learner is able to register performance at 90 to 96% in word reading and 59 to 79% in comprehension.

On the other hand, finding the frustration level means that teachers identify grade level passage that the child can no longer read and understand on his own. To find the frustration level, the test administrator continues to give a selection that is one level higher than the instructional level passage until the learner’s oral reading score performance is at 89% and below in Word Reading and 58% and below in Comprehension. It is important to identify the frustration level so that teachers are aware of the kind of material that the student is not yet ready for. Based on the reading difficulty of the student, a reading intervention program is designed for him/her. Reading, a required skill in academic and social life, is a basic language skill.

Although there are many definitions of reading, Akyol and Boyaci-Altinay (2019) defined it as “the process of establishing meaning in a suitable environment using appropriate information based on effective communication between the author and the reader by the appropriate aim and method,” may be the most descriptive. As this definition indicates, reading and comprehension may seem to be different things but are two parts of a whole that needs continuous improvement in education. Reading comprehension has an important place in lifelong learning. It is an interactive process between the reader and the text.

Students need reading comprehension skills at all educational levels and for all school subjects. Determining the level of students' reading comprehension skills is the subject of testing and evaluation. Tests used to measure students' success are expected to provide accurate and reliable information on the vocabulary skills status of the students and even in reading.

According to Procter (2020), the best way to increase and deepen an individual's general vocabulary is to spend time reading. A newspaper or popular magazine will do, as long as the person reads with an active interest in the words that are found there. As a person's "passive" vocabulary from reading increases, he/she will begin to be comfortable using new words in speech or writing. The words need not be used deliberately but one would simply find them in his/her command when needed. If they are established through a true understanding, they belong to the reader. Also, there are a number of words in the readings and instructional materials of the students from elementary and secondary that they cannot comprehend because of its nature of unfamiliarity. This brought misunderstanding to the students and eventually make them perform lower in measurements of learnings/assessment. The words seem easy to understand for others especially for teachers, but their difficulty varies for the students due to experiences and lack of guidance.

The review made by the Victoria State Government (2021) had shown that in science, students need to be explicitly taught how to write and speak in more formal registers. Teacher modelling and ongoing feedback will support students to develop their understanding and use of register within the Science classroom, topics, and varied contents through activities. Also, within Science, explicitly teaching words will allow students to access and communicate scientific content knowledge. It was argued that methods of teaching vocabulary that focus on students copying definitions from a textbook are problematic for three reasons: definitions in isolation can be too broad or too narrow, having no direct link to the topic being taught students may copy definitions absentmindedly, rather than reading and understanding the definition. Identifying definitions within a passage of text may lead to incomplete or incorrect definitions. Introducing new vocabulary in contextually rich and cognitively demanding ways benefits all students, whether students are identified as English-speaking, English as an additional language (EAL), or as having a disability or additional needs. According to the articles by Pierson (2018), Math requires students to

understand new terminology because common words and phrases can have math-specific meanings. Many words (such as "plus" and "equals") are so common and important that students use symbols rather than words.

Teaching precise mathematical language will help students to think more carefully about ideas. From these, teachers may provide clear explanations, create online glossary, introduce new and more vocabulary. Different models may be given with ongoing formative assessment. Vocabulary understanding is a major contributor to overall comprehension in many content areas, including mathematics. Effective methods for teaching vocabulary in all content areas are diverse and long-standing. Teaching and learning the language of mathematics is vital for the development of mathematical proficiency that involves spelling, meaning, and its constructions. Students' mathematical vocabulary learning is a very important part of their language development and ultimately mathematical proficiency. Also, Morgan (2020) explained that mathematical language is the means through which children can communicate meaning and ensure it is presented in a structured way.

Whether written or spoken, teachers expect children to be able to present their thinking and reasoning through the use of math vocabulary. After all, if students are to be fluent in a language, they must be able to both think and speak in it. Moreover, the mathematic curriculum explicitly states that teachers must teach reason mathematically by following a line of enquiry, conjecturing relationships and generalizations, and developing an argument, justification, or proof using mathematical language. Through doing this, children can construct their own understanding and add to their existing schemas of knowledge. If we teach vocabulary instruction explicitly and place an expectation on children to reciprocate, it will deepen their understanding of the content we teach. In the survey made by Dere (2019), he found out that in social studies courses, students often feel difficulty explaining their thoughts, views and concepts in manner expected.

Firstly, they may be new, difficult to understand and not confident in narrating, hence they give examples to make things easier. Students should read once, twice, thrice till they get concept. Secondly, the concept should be clearly explained by teacher till they get it. And also, social studies is challenging as it is an art and the same time a science subject. A student may not know when to give a straight answer like in science and a long explanation as in history. This takes

a lot of thinking and because of time students get tensed and that is why they do not answer the way the teacher wants. Lack of vocabulary is what kills most students. When students begin to provide examples in explanation of a concept, it tells the teachers that they have some related learning experiences which they can only explain as opposed to defining the concepts. Low self confidence in talking in the midst of others, due to poor vocabulary development could be another reason. That is why it is advised that every teacher test students beyond the knowledge and comprehension levels.

Lastly, concepts in social studies are more abstract compared to concepts from science. Thus, to get the concept through, the teacher will have to conduct additional exercises such as group discussion and essay writing so that these would broaden the student's understanding of difficult concepts. Such a problem can be overcome by trying out different methods and choosing the ones that work. Getting student feedback by ways of their performance in test and quizzes as well as direct feedback will help in this endeavor. Additionally, Heafner (2019), discussed that vocabulary instruction in social studies is important because it builds background knowledge that is essential when students are assigned to read complex non-fiction texts. When students have a strong vocabulary, it makes them better readers. This is critically important in a word-dense subject like social studies. Teachers are recommended to provide early, frequent, and targeted interventions with words. Targeted vocabulary instruction helps students activate prior knowledge, make connections with word meanings so that texts are more comprehensive, and identify possible cultural or general misconceptions of terms. The varied social science words are hard to understand if met at the first time. The context of the words needs to be shown relevant to the whole story or passage to facilitate deducing the meaning with clues.

Similarly, words that are unfamiliar for the students in Social Science have been a problem in the past years, but it has become interesting for the students to know the meaning of these words through pictures, stories, videos, and creative yet relevant activities. Likewise, the understanding of the words has been in students' zone of learning and easily comprehensible words to help them in assessment in performance and written tasks. In subjects relevant to Music, Arts, Physical Education, and Health (MAPEH), it was discussed in the article of Adams (2014), that in music when teachers build vocabulary, often the word is introduced alone, and in the context of a sentence or paragraph, so that the meaning can be inferred. Once the word

meaning is known, the entire sentence in which it is located can be understood. Language communicates explicit meaning. Music, on the other hand, does not mean something in the same way a sentence does. Musical meaning is either structural or referential. It is implicit but never explicit. People cannot have a conversation with musical phrases as they can with linguistic ones. What meaning music does have is found in its syntax. For this reason, words that identify musical events or aspects are used to analyze music or to describe it, but the words never become part of the music itself, as words become part of a sentence; therefore, when students are taught music vocabulary that is generally hard for them to understand, they are being taught either how to talk and write about music or how to describe an experience with music. In terms of Art, Dehner (2018), established some important points in vocabularies that can be used, stating that the need for vocabulary development in Art classes is a must to lead students' appreciation of arts and its components. However, students are really challenged to understand many words specific to arts. And so, it was suggested that teachers write them into class objectives, make them visible, explain both the fancy and teacher definition, create a jingle, say them out loud, use a cheat sheet, and more creative ways that help retention.

Considering Physical Education and Health, Ming (2012), pointed out that Physical education is no different in its need for and expectation of students understanding and use of the language of the discipline, but the vocabulary can create distinct challenges for students. One challenge is the different kinds of concepts within physical education, ranging from more abstract components of fitness, specific exercises, and sports-related terms to anatomical terminology. Another challenge for vocabulary learning can come from words with multiple meanings. Even within physical education, the same word can have distinctly different meanings or ways of performing that term. For instance, "dribbling" in basketball refers to using the hand to move the basketball across the floor, whereas in soccer, the foot dribbles the soccer ball down the field. Likewise, the words "strike/striker" or "bowler" also have different connotations in baseball and soccer, or cricket and bowling, respectively. This could be especially confusing for English language learners (ELLs) as they work to process these terms. Thus, it is critical for physical education teachers to support the vocabulary acquisition and comprehension of all of their students in PE classes.

In technology and livelihood education, it was noted

by Quigley (2021), that teachers have revealed that the vocabulary gap can hamper their pupils in countless ways. Sometimes it is painful for the student and for the teachers that a student is explaining that she did not understand the word *suspense* in a standardized test, to students crying when faced with a SAT reading on titles that they found inscrutable. And teachers cannot teach all of the words to their pupils. Their language develops daily, inside and outside of the school gates in the practice of varied skills and livelihood activities. Reading, talk and simply existing in the world would lead to their vocabulary growing exponentially. Still, teachers can better develop pupils' vocabulary, identify their gaps in understanding, and teach new words with a greater likelihood of success. Vocabulary gap does exist; it is the gaps in vocabulary exhibited by the pupils, rather than the subtle growth, that too often become clear for teachers. These gaps may show up in a difficult examination, a weak answer in class, or a subtly limited piece of writing in all strands of education in technology or in livelihood as well as in academics. TLE, with its very wide scope of vocational related subjects carries the most abundant language jargon in the subjects that needed the teachers' and students' special or particular interest and attention. Students need to have an interest in the topic and the motivation to learn these in and out of the class hours. Particular TLE strand needs to be a focus for a thematic subject learning and understanding of the words. In articles about ethics or values education as emphasized in Ledbury Primary School (2021), it can be noted that motivating students to learn vocabulary can be a daunting task in this day and age. Learning vocabulary has traditionally been perceived as boring because it is a long process that requires time and patience, two values that are no longer cherished in today's age of speed.

Nowadays, students often ask why they should learn words when they can just look them up on their phones whenever they might need them. One of the simple and commonsense reasons behind the need to build vocabulary is convenience. When engaged in a conversation with an English speaker, a person cannot be expected to keep checking the phone every five seconds looking up words or checking translation applications to express an idea to his/her conversation partner. Another more complex reason is usage. It is not enough, for example, to look up simple words in a dictionary, be it a specialized one, and be able to pick the right one from a group of synonyms, to grasp nuances and combine correct collocations. That comes with practice and continuous exposure to the specific jargon, not to mention knowledge of the science behind it. Also, it is a must that students build their

ethical vocabulary and reasoning skills.

Values Education is a specific subject catering the aims of developing students' most acceptable behavior, but the materials are used and integrated with other subjects to convey the values being taught. These combinations with other subjects and the situations created for the teaching of the values bring several nouns and adjectives that are abstract for students' comprehension. These words remained alien for the students for the reasons that students do not know the value, the situation, and have not encountered the words or feelings. Students cannot express and lack the will to heed the discussion or presentation of the topics. There are generally so many words that values education subject has to teach which are in the forms of personal values or character development related values that should have been easy when paid attention once. However, negligence and lack of interest make it hard to remember and understand for the next encounter with the words.

### **Proficiency Level in Vocabulary Skills - Spelling, Meaning, and Grammar**

The reviews of Alshahrani (2019) defined vocabulary as the words of a language, including "single items and phrases or chunks of several words which convey a particular meaning, the way individual words do. These lexical chunks include greeting phrases, and they are the key to communication and developing student skills. The stronger students' vocabularies are, the more complex material they will use that will benefit them, allowing them to communicate and understand others much better. A student's understanding of a vocabulary word's meaning and usage can vary from shallow to deeper use. Spelling is another important term since it is a vital pre-requisite skill for people to be able to express themselves through written communication as opposed to oral communication. It also expressed the great importance of acquiring the skill for reading fluency in this process. In addition, learning to spell is not just important, but fundamental to acquiring further academic knowledge. Yet, acquisition of these skills is difficult, especially for students with late development and so it is a complicated task to attain for both children and adults; it is even more challenging for students.

According to Terry (2021), many children and even adults have problems with spelling. Spell check can often only get you so far. Sometimes spell check cannot even tell what word it is that one is trying to spell. One may have even written a word that is a

word, but not the word one intended to write. Poor spelling abilities can lead to a lack of confidence and poor performance at school. Spelling and reading are interconnected, so one step in improving reading skills is to improve one's spelling skills. These skills impact not only school success but also life success. In fact, by the time one enters the workforce, a spelling error on the resume could be the difference between landing an interview or not. People who have poor spelling abilities or spelling difficulties sometimes avoid using words that are out of their spelling abilities for fear of making spelling mistakes. They can also be reluctant to share their work or participate in activities like writing on a whiteboard in front of a group or typing comments in a virtual learning environment. Lastly, when students just have difficulty with spelling, in other words, they can read well but not spell, they may have a spelling disability. That just means they have difficulty with spelling.

Sometimes this is due to the type of spelling instruction they have had. Sometimes it is because their teacher allowed creative spelling. Sometimes it is because children are struggling readers and do not have spelling competence that cause them to fail in assessments. Considering meaning, building vocabulary is a complex process to help one understand and know the meaning of a word (Time for Learning, 2021). To successfully build vocabulary skills, there are multiple components of gaining mastery over new words. The first component of learning new words is exposure; seeing the new word enough times to grow familiar with it. The second component is understanding the definition of the word, as well as how it is commonly used in context. Another component of vocabulary building is recognizing synonyms of the word. Examples of how the word is used in context can be a helpful component of learning vocabulary as well. Finally, students should have plenty of opportunities to practice using the new word, both orally and in print. Without a doubt, the best way to help children learn new words is to read to them as often as possible. Reading aloud is even more effective when the adults take the time to stop and explain the meaning of any unfamiliar words as they go.

Other fun vocabulary activities may be done to help students overcome meaning deficiency to words. That it is common to fail in an initial assessment but with activities suited for the students, they might perform to their best in the following formal and informal assessments. Lastly, as vocabulary develops, teaching is most effective when all efforts focus on the words and concepts that are most relevant to each child's

particular life experiences rather than words that may or may not have real-life meaning to the child. Another review by Ong et al., (2019) stated that there is much agreement among linguists and language experts that inadequate vocabulary development is the basis for many problems associated with underachievement due to meaning deficiency and comprehension. Vocabulary deficiencies are associated with difficulty in comprehending sentences, depressed IQ test performance, and inefficient reading speed. After students leave school, inadequate vocabulary development continues to affect vocational success adversely. Vocabulary development then is an essential skill, which needs emphasis in all English classes. Yet it is a reality that quite a number of students still belong to the underachiever's category as manifested by their failing marks.

Several researchers, according to Ong, posit that despite the obvious importance of vocabulary meaning in the reading process, it is frequently underemphasized by teachers in their classrooms. Ong further states that it is also a facet of reading about which some teachers have many misconceptions. Moreover, the teaching of grammar occupies a central part in the teaching and learning of a language (Wornyo, 2016). The spoken and written forms of every language have to conform to the word order rules of the language in question. It was pointed out that children entering grammar schools between the sixteenth and the eighteenth centuries in England were given a vigorous introduction to Latin grammar. According to them, the decline of Latin brought modern languages including English into the curriculum of Europe schools in the eighteenth century and they were also taught using the same basic procedure. Also, English started with the teaching of grammar rules. The teaching of grammar, therefore, occupies a central part in the teaching and learning of English as a Second Language.

The teaching of grammar therefore forms the main focus of teaching English that in the Philippine educational system the teaching of grammar is the bulk of the instruction, if not the focus. It was observed that grammar is central to the teaching and learning of languages and emphasized that one needs to grasp the grammar of the target language to be able to speak and write it. Lastly, the inadequacy of the traditional method of teaching English grammar calls for a shift from the mere teaching of grammar rules to an approach that adequately addresses the grammar needs of learners. There is the challenge to reflect the changing philosophies about language learning and teaching in the way grammar is taught in the

classrooms could never have been more pressing than today to make the approaches, strategies beneficial to the learners and make them outperform their past grammatical failures. In the article discussed by Gonzalez (2017), grammar teaching has faced several setbacks on how to make the learners acquire the skills and perform well in written and oral communications. It was also cited that students fail in grammar because the teaching of grammar out of context does not work because excessive drills have a detrimental impact on it especially the use of isolated grammar and usage exercises that is a deterrent to the improvements of students' speaking and writing. Students need to be given enough time, curate a database of quick grammar lessons, and understand that learning grammar is a process.

### **Potential ICT-based Program for Vocabulary Enhancement**

Language education, according to Ernest and Hopkins (2020) is an area where open-access resources, online courses, virtual classrooms and social networks based on information and communication technology (ICT) are being increasingly used to give learners access to information, promote interaction and communication, and enhance digital literacy skills. To maximize the potential of ICT in language teaching, it must be used in a pedagogically sound way that corresponds to the individual needs of the learners. It is also important that the use of ICT is introduced and supported in a sustainable way and in a range of pedagogical approaches that promote lifelong learning.

The essential aspect of learning a language is learning vocabulary. Vocabulary is called a basis for the development of other skills for instance listening, writing, reading, speaking, pronunciation and spelling. Hence, vocabulary has got a central role in learning a language. And, in learning vocabulary, ICT increases students' motivation, enhances personal commitment and engagement, Learners' collaboration and communication like web 2.0 tools. Today Web 2.0 technologies have become a ubiquitous component of our daily lives which continues to be upgraded (Wang & Vasquez, 2012) which is used by millions of people to communicate, collaborate, network and entertain through blogs, wikis, social media, YouTube, and games.

It is claimed that Web 2.0 tools in many L2 learning contexts have transformed pedagogy curriculum design, the conception of language learning, and even the research in this field. ICT in education offered several ways to help learners grow exponentially in

vocabulary skills, wherein the way students perform in the pre-assessment are far different in the way the students perform in the post-assessment because of the academic and behavioral impact of the ICT materials fitted for the generation of learners Softa (2011). Also, it was stated that intervention materials that are crafted well along with the students' needs greatly help students to perform well and leave their lack of confidence to use, try, and drill in the exercises as far and leave their comfort zone of learning the second language. Pre-test and post-test with ICT utilization offers a significant difference in performance variables in several aspects of the tests generally centering in meaning, spelling, sentence construction, finding errors and even literary aspects (Soong, 2012)

## **Methodology**

### **Research Design**

This study used a quasi-experimental design which is deemed fitted in this study since according to Christensen, (2014) it focused on the causation that will undergo pre-test, followed by utilization of the treatment, post-test, and identification of the causes of the ICT-based vocabulary building program for Grade 7. The data gathered were compared and analyzed whether to accept or reject the hypothesis.

Also, quasi-experimental research seeks to determine a relationship between two variables that are the students' vocabulary skills as the dependent variable and the ICT-based vocabulary material as the independent variable. After completing a research study, a correlation between a specific aspect of an entity and the variable being studied is either supported or rejected. This method suited the study since it aimed to find out the effects of ICT-based vocabulary building programs and its potential to develop the word spelling, meaning, and sentence usage or grammar as related to the reading comprehension of the students who were in the students' home learning environment. This was the most fitted design to collect evidence in an uncontrolled environment which gave first-hand evidence and valid results after pilot testing.

### **Research Locale**

This experimental study was conducted in Amontay National High School Pitogo, Quezon. This school is part of Region IV-A, CALABARZON, in the Division of Quezon province. Further, it is in the Third Congressional District of Quezon Province with four

wide districts. There was a total of 1021 students in the school by which 793 were junior students and 227 were in senior high school school year 2019-2020.

Additionally, the research locale is the biggest public school in the district with 41 teaching personnel from junior and senior high schools led by a principal II. It is located near the public road, and though a barangay high school, it already owns its land title. This locale was chosen since the school has the biggest number of identified students who are poor in reading and vocabulary from Grade 7 – Grade 10. Likewise, the MPS of the school in English is the lowest in the district public secondary schools according to Pitogo District Monitoring, Evaluation, Planning, and Adjustment Report (DMEPA) school year 2018-2019.

### Research Population and Sample

This study utilized the two groups of respondents. To avoid conflict in the schedule of classes and use of laboratory. This study used purposive sampling using the one section in Grade 7 students' population. In this study, the primary criterion was being grade 7 in the Katapatan section with or without reading frustration level of the reading comprehension as identified in Phil IRI materials and assessments. With this, the Grade 7 students who are at the transition period from elementary to high school were utilized in which the researcher was their English teacher.

The students in the transition period were chosen since these students came from different elementary schools in the district covering the whole culture with very little difference. Also, these students were pre-assessed in their vocabulary skills, and pace of reading during the enrollment, and the comprehension was checked in the former grading periods. Lastly, it is believed that students in the transition period are challenged in English language specifically in using words in different contexts, writing its spelling, and comprehending the texts presented to them with the unfamiliar words. If this is intervened in the lowest grade level, these students would have a higher possibility of success in their education, especially in English subjects. This sampling from the selected population facilitates the observations during the experiment or execution of the treatment. Specifically, Grade 7 Katapatan with 39 students has 35 students with reading frustration levels that were used.

### Research Instrument

This study used a researcher made instrument which was validated by the selected authorities such as

master teachers and Education Program Specialists in the Division of Quezon with English subject relevant specialization. The first set of questionnaire was a survey focused on the English language words that can be found in the English language material of the students in Grade 7. This is a survey in which words are categorized relevant to the seven major subjects such as English, Science, Mathematics, Social Science, MAPEH, TLE, and ESP. This was rated according to the level of unfamiliarity using a Five-point Likert Scale every 10 identified words in each subject. The second set of questionnaire was pre-test focusing on the proficiency level of the students in vocabulary particularly in spelling, meaning, and grammar to sentence utilization. This was a 69-item test divided into spelling – 28, meaning – 25, and sentence utilization and grammar – 16.

The third set of questionnaire was a post-test focusing on the proficiency level of the students in vocabulary particularly in spelling, meaning, and grammar to sentence utilization. This was a 69-item test divided into spelling – 28, meaning – 25, and sentence utilization and grammar – 16. This shows the same competencies as of the pre-test. These questionnaires were personally distributed and collected by the researcher before the study and at the end of the study for interpretation. The data taken from the first and second sets of questionnaires were computed and used as bases to accept or reject the study's hypothesis that there is no significant difference in the vocabulary proficiency level among grade 7 learners based on the results of pre-test and post-test. All the tests were pilot tested in another school at the Pitogo district to only 10 students to establish validity and reliability of the results.

### Data Gathering Procedure

The sequence of data collection implementation followed the sequential quasi-experimental design by Harland (2013) where the data were gathered in a less controlled environment. The first step was the survey and identification of unfamiliar words in English language from the materials used for Grade 7. From the identified words, top 10 were chosen as word material for the developed ICT-based material. These words were presented in the ICT-Based Material that includes pictures, sounds, sentence utilization, spelling, and the meaning of the words. The material was created in MS powerpoint presentation with I-Sprint Suite Software with parts such as primary interphase, silent reading phase, vocabulary development phase, and interactive quiz phase. All were linked to each other for facilitated



movement/navigation.

A separated material was assigned for each subject where all 10 words were used in a paragraph to share the same content and context. In the pre-test, the material was not yet presented. The pre-test was a plain pen-and-paper test along the spelling, meaning, and grammar. After taking the pre-test, students were given a copy of the material in them for all the subjects with a lent tablet as provided by the Department of Education. After the completion of the seven (7) subjects, another pen-and-paper test for post-test evaluation was given aside from the recorded scores during the implementation. Post-test was applied with the same competency but with a different context. After the post-test, the data were tabulated, computed, analyzed, and interpreted.

## Results and Discussion

### Test of significant difference in the vocabulary proficiency level among grade 7 learners based on the results of pre-test and posttest.

Table 1. Paired Sample T-Test Showing the Significant Difference between the Pre-Test and Post-Test of the Grade 7 Students in Vocabulary Skills

		Mean	Standard Dev	Mean difference Pre - Post	P-value	Interpretation	Decision
Spelling	Pre-test	60.91	10.87	-33.89	.000	Significant	Reject Ho
	Post-test	94.80	6.40				
Meaning	Pre-test	40.46	11.87	-50.51	.000	Significant	Reject Ho
	Post-test	90.97	5.60				
Grammar	Pre-test	42.46	15.62	-47.29	.000	Significant	Reject Ho
	Post-test	89.74	14.68				

Presented in table 1 is the paired sample t-test showing the significant difference between the pre-test and post-test of the grade 7 students in vocabulary. It should be noted that the difference between the pre-test and post-test in spelling (-33.89), meaning (-50.51), and grammar (-47.29) is statistically significant (p-value = .000) at 0.05 level of significance which rejected the null hypothesis for spelling, meaning, and grammar.

The existence of significant difference tells us that the proficiency in the vocabulary of the grade 7 students in the pre-test and post-test differ significantly. This was supported in the reviews of Ernest and Hopkins (2020) and studies of Soong (2012), Softa (2011), Wang and Vasquez (2012); Bird and Edwards (2015), and Lindner (2013) stating that students learn significantly

with the use of ICT in the teaching-learning process. The way students perform in the pre-assessment are far different from the way the students perform in the post-assessment. Also, it was stated that intervention materials that are crafted well along with the students' needs greatly help students to perform at their best far and leave their comfort zone of learning. The pre-test and post-test with ICT utilization offer a significant difference in performance variables.

In this study, it implies that the ICT-based program in vocabulary building among the selected grade 7 students in Amontay National High School is effective in terms of spelling, meaning, and grammar. The ICT-based program can be implemented for the whole school for vocabulary development. It implies further that the contents, activities, designs, and the material as a whole were appreciated by the students that might have motivated them to learn the vocabularies with ease. Also, with the use of the ICT-based material in the classes, it could be expected that the students will perform well in the vocabulary development of the English language in all subjects. It also implies a need for involving more words and relevant content in ICT-based materials and exercises for the students who have different needs. Some contents might need more simplifications and assessment to act as intervention material to aid students who do not easily meet expectations. Lastly, differentiation in the ICT materials can be explored to increase the relevance of the ICT-based material.

### Potential of Interactive ICT-Based Instructional Material to develop the vocabulary skills

Table 2. Potential of Interactive ICT-Based Instructional Material to develop the vocabulary skills of the Grade 7 learners

Vocabulary Skills	Test	Mean	Standard Dev	Mean difference Post-Pre-Test	ICT-Potential Description
Spelling	Pre-test	60.91	10.87	33.89	Has Potential
	Post-test	94.80	6.40		
Meaning	Pre-test	40.46	11.87	50.51	Has Potential
	Post-test	90.97	5.60		
Grammar	Pre-test	42.46	15.62	47.29	Has Potential
	Post-test	89.74	14.68		

Table 2 shows the potential of interactive ICT-based instructional material to develop the vocabulary skills of the Grade 7 learners in spelling, meaning, and grammar. It presents that from the given mean in terms of spelling, post-test score is 33.89 higher than the pre-test; in terms of meaning, the post-test score is 50.51

higher than the pre-test; and in terms of grammar, post-test is 47.29 higher than the pre-test. It is also worthy of notice that in all aspects of vocabulary, the ICT-Potential Description is Has Potential.

This was similarly evidenced in the reviews of Ernest and Hopkins (2020) and studies of Soong (2012), Softa (2011), Wang and Vasquez (2012); Bird and Edwards (2015), and Lindner (2013) stating that with the utilization of ICT-based materials in learning of language skills, the competencies of the students would increase. The ICT has a potential as a game changer in the development of vocabulary skills where students would be engaged in learning with higher retention and application rate of learning relevant to the blooms taxonomy of learning.

In the current study, it implies that the ICT-based program in vocabulary building among the selected grade 7 students in Amontay National High School has the potential to gain increase in performance level of the students. Likewise, this can be applied in other subjects as well as other grade levels upon due adjustments and content personalization. Further, it implies that intervention activities with the use of ICT-based program could be effective for this generation of learners. And, with the program, students would be able to communicate well as to listen, speak, read, and write the language with comprehension, correct spelling of words, right meaning as applied in different context, and standard or acceptable grammar. Further, after being competent in the vocabulary aspects, students may performance increase in other subjects when vocabulary and comprehension is needed since the vocabularies are taken across several or all of the subjects in secondary school. Lastly, the potential of the ICT-based material need to be sustained with validation, acceptability and utilization.

## Conclusion

Based on the findings of this study, the following conclusions were drawn: (1) The majority of the unfamiliar words encountered by the grade 7 students in their subjects were verbally interpreted as very much unfamiliar. (2) The pre-test scores of the grade 7 students were verbally described as did not meet the expectations. (3) The post-test scores of the grade 7 students were verbally described as outstanding after using the ICT-based vocabulary material. (4) There is a significant difference between the pre-test and post-test of the grade 7 students in vocabulary specifically in spelling, meaning, and grammar. (5) The interactive ICT-based instructional material has the potential to

develop the vocabulary skills of the Grade 7 learners based on the result of this study. (6) The proposed potential enhanced ICT-based material for vocabulary development should be centered on student needs presented interactively with ICT features.

In view of the foregoing conclusions, the following conclusions are hereby offered: (1) The English teacher may lessen or increase the number of words to be included in the ICT-based material; words from different subjects may be presented in one narrative but contextual. (2) In conducting pre-test, the English subject teachers may vary the number of questions and present the questions considering the student levels where skills may be separated or combined. (3) In conducting post-test, the English subject teachers may follow the same formatting as a pre-test in the number of items for spelling, meaning, and grammar considering the student levels and combining or separating the vocabulary skills. Also, teachers may continue using the ICT-based material for an improved vocabulary skill of the students. (4) The English subject teachers may continue using the ICT-based material for an increased vocabulary performance and may be used for the inclusion of other assessments, tasks, and activities relevant to the English subject. (5) The entire Pitogo District may use the ICT-based instructional material since it has a potential to develop vocabulary skills and can be part of their intervention. They may also improve the material with exploration of softwares and application features available in different formats and programming. (6) The school may use the proposed enhanced potential ICT-based material for grade 7 students' vocabulary skills development in spelling, meaning, and grammar. Other language aspects may still be explored as to the involvement of reading comprehension activities, and the use of controlled groups for an experimental study for the future and related research.

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