

# Evaluating the Effectiveness of English-Waray Code-Switching, Paired Texts, and Multimedia as Interventions on Grade 7 Students' Reading Comprehension in a School in Burauen, Leyte

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## ABSTRACT

Excellent reading comprehension is foundational for academic success and understanding information across various disciplines. However, many students, particularly at the critical Grade 7 level, continue to struggle. Thus, mastering this skill in early grades is crucial. This study employed a true experimental design to evaluate the effectiveness of interventions, specifically multimedia presentations and paired-text handouts with English-Waray code-switching, on the reading comprehension level of Grade 7 students. A total of 40 purposively selected students with poor comprehension were randomly assigned to intervention and control

groups (20 each). Data were collected using the English-Language Proficiency Assessment, adapted from Transparent English and validated by experts, and analyzed using a paired sample t-test. Results showed that the intervention group scored higher than the control group, but the difference was not statistically significant. It is supported by a high Pearson correlation of 0.9277 between interventions and reading comprehension, indicating that the interventions improve students' reading comprehension. However, this may be coincidental when comparing the means of the two groups, resulting in a t-computed value of 0.069 lower than the t-critical value of 1.729, suggesting that the interventions were not highly effective. It is recommended that further research involve a larger sample size, investigate the impact of contextualizing reading texts, address environmental factors of learning, especially schools in remote or rural areas, and explore more interventions to improve students' foundational reading comprehension.

**Keywords:** *Reading Comprehension, Multimedia Presentation, Code-switching, Paired Text, Waray-Waray, Experimental Study*

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## INTRODUCTION

Developing reading comprehension skills is highly important and essential for students, as this directly affects their ability to understand and learn from various texts across all academic fields. However, it is an undeniable fact that some students still struggle with reading comprehension, which can significantly hinder their academic progress. For secondary school students, reading comprehension is often a challenging aspect of learning English, as many find it difficult to master this skill.

The government has made it a policy that reading comprehension is crucial, and that students in senior high school, in particular, must learn reading as one of the four language skills in the classroom. The pupils are expected to be able to comprehend the reading passages they read well through the teaching and learning of reading. This is consistent with the Senior High School reading curriculum's goal of improving pupils' reading abilities so they can read and comprehend English texts effectively and efficiently (Curriculum, 2006 as cited by Digital Repository Universitas Negeri Medan, n.d).

According to a study about Reading Comprehension Difficulties faced by Senior High School students, conducted by Lestari et al. (2017), students face major reading comprehension text difficulties: vocabulary (27%), main idea (23%), inference and reference (18%), and detailed information (14%). Furthermore, the findings from the discussion with five of the lowest scorers in the test alongside an English teacher reveal that the factors regarding why the students face the challenges are a lack of extensive reading, insufficient vocabulary, text, and question type, absence or lack of employing reading strategy (intervention), and the ambiguity of students' reading levels. Moreover, the results of the study recommend that English teachers assess the reading levels of students accurately, give clear or proper instruction on the reading strategy, and implement interesting or stimulating strategies in teaching to encourage students to read more in English.

In this study, the researchers address one of the main concerns of students who are in the critical stage of their academic learning - the Grade 7 students. Furthermore, contemporary literature shows that even senior high school students still face reading comprehension difficulties. The aforementioned study by Lestari et al. (2017), provides evidence for this. This finding is particularly troubling and perhaps indicative of a failure to teach reading comprehension at the foundational level. Consequently, it would be a great start if they begin learning to comprehend texts as early as their grade level, for them to at least develop their skill or knowledge and lessen their difficulties once they face more complex reading passages as they grow and step into the next, higher grade levels.

Although reading comprehension is crucial, the majority of people can read out loud some texts with the correct pronunciation, but many struggle with comprehension (Digital Repository Universitas Negeri Medan, n.d). Apart from listening, speaking, and writing, reading is another element of reading skill in English. Gaining strong reading ability is significantly needed to equip students for both local and national English examinations tested in written form; hence, the focus on teaching reading must begin from the kindergarten level and continue through to tertiary education.

According to Kennedy (1981:5), as cited by Puspanggara (2014) of Universitas Muhammadiyah Surakarta, reading is the capacity to identify a visual form, link or connect it to a sound or meaning learned in the past, and then decipher and interpret that meaning based on prior experience. The explanation further adds that reading is a personal skill that allows one to comprehend written texts and locate the author's message.

Teachers must use an approach that works with the students when teaching reading for them to understand the learning objective. Method is defined as “an overall plan for the orderly presentation of language material, no part of which contradicts, and which is based upon the selected approach” by Anthony (1963) as cited by Fauziati (2009) in Moodle USP: e-Disciplinas. According to the explanation, choosing a teaching strategy is crucial since it must fit the personalities or contexts of the students. The teacher must keep track of each student's improvement in addition to their reading proficiency. After completing an assessment, students' progress may be seen; in this case, the teacher provides feedback on the students' evaluation. The teacher's proficiency in teaching reading is what matters most in evaluations.

According to Nanda (2018), students' lack of motivation, their lack of prior knowledge, and their limited English vocabulary are three noteworthy factors to blame for their poor reading comprehension. Additionally, this problem has three main negative effects: it lowers students' academic progress, impairs their ability to solve problems, and hinders their ability to pursue further education and careers.

Certainly, there exists a large body of extant literature that discusses reading comprehension, but this study uniquely emphasizes how certain interventions, namely code-switching and paired texts (textual code-switching in paired texts), alongside multimedia presentations, affect the level of reading comprehension of students in a school in Burauen, Leyte, of academic year 2023-2024. This study made use of multimedia presentations such as video animation and photos as interventions, and handouts with code-switched and paired texts containing relevant information about the story or reading passage. Furthermore, this study aims to evaluate or assess students' performance by comparing those who were given or provided with a reading comprehension intervention, and those who were not. By analyzing earlier research in which a variety of papers and books were critically examined, the study examines the problem in detail.

### **Theoretical Framework**

The following theories were derived from existing literature that are relevant to answering the research questions and serve as a guide in understanding the relationships between variables in this study. This provided the structure and context through which data were interpreted and conclusions were drawn.

According to Hulme & Snowling (2011), there has been growing interest in children who can read accurately but have poor comprehension. This is referred to as reading-comprehension impairment and has a range of oral-language weaknesses, which hinder their comprehension of both written and spoken language, which is relatively common, although it often goes unrecognized in the classroom. Recent studies indicate that these underlying oral-language difficulties can be ameliorated by school-based interventions, which can, in turn, improve both reading and listening comprehension skills. Early

and relevant interventions or measures to address these language-learning deficiencies may carry significant educational, social, and economic results or implications.

Richard Mayer's cognitive theory of multimedia learning (1997) suggests that the words and pictures that are chosen for instruction are important and impactful. Multimedia learning theory includes three components that aid students in learning more efficiently. First, two channels exist for information processing: audio and visual; this principle is referred to as the multimedia principle, which asserts that learners might comprehend more effectively through a combination of images and text rather than relying solely on text. Second, every channel has a restricted ability to handle information. In other words, humans can process information in restricted or limited quantities, and they attempt to comprehend it by forming mental images from the sources of information. Third, learning involves an active process of filtering, selecting, organizing, and integrating information according to prior knowledge (Mayer, 1997, as cited by Yana, (n.d)). This means that learning is optimized or most effective when multiple representations of information are presented simultaneously (e.g., text and visuals). This theory refers to the method of gaining knowledge from educational resources that integrate verbal (text) and visual (images or animations) information, which has been demonstrated to improve learning in comparison to text-only methods (Science Direct, (n.d)).

In this study, watching videos that complement the text, goals, or lessons provides learners with multiple ways to process information, which can lead to a deeper understanding and better retention. Choosing a cartoon animation that does not directly relate to the material can hinder a student's learning rather than helping them, and thus, researchers must be critical of choosing the relevant interventions.

Moreover, Mwaamukange (2018) assessed the impact of videos in promoting learners' English second language comprehension and listening in Omusati region by exploring the impact of multimedia, specifically videos, on language comprehension, and focused on finding out whether or not it has an impact on the English language comprehension of Grade 11 SL (Second Language) learners. The experimental group watched videos and responded to questions based on the videos in the English comprehension tests, while the control group received the same material as the experimental group, but the videos were converted to text. Their findings suggest that teaching with videos as supplementary materials improved the participating learners' language comprehension, and that language teachers should use audio-visual materials as supplementary materials when teaching English. Moreover, a study by Regina and Rajasekaran (2023) on understanding the effectiveness of audiovisual aids in improving English vocabulary in ESL classrooms found that the use of multimedia materials in language classrooms effectively develops English vocabulary among students, as they find it interesting, leading to a feeling of an enjoyable learning environment. With this being said, multimedia materials have a range of benefits to learning, not just in reading comprehension, but also to other interrelated factors such as English vocabulary and other language learning factors.

Another theory connected to this study and Mayer's third component is the prior knowledge theory. According to an article by Yin (n.d), educators and material developers have frequently acknowledged the significance of prior knowledge in reading comprehension processes, where learners are urged to connect the text, they read to their existing knowledge. This means that past experiences will

be related to new experiences, which may include the knowledge of objects, situations, and events, as well as knowledge of procedures for retrieving, organizing, and interpreting information. Moreover, prior knowledge refers to the information that individuals gather before encountering a particular situation or event Conklin (2023). It holds significance as it aids in guiding decisions and actions or understanding, even in circumstances that are new or unfamiliar to a person. Thus, prior knowledge theory suggests that people can draw on their existing knowledge to assist in dealing with new experiences. In the context of this study in reading comprehension, past or prior background knowledge will affect how students retrieve, organize, interpret, and understand or comprehend what they read. This motivation frequently appears as a 'warm-up' period prior to the start of reading (Yin, n.d). In this study, researchers made use of multimedia materials and the code-switched (English-Waray translation) handouts paired with some pictures and complicated vocabulary texts (textual code-switching in paired texts) from the story, as an intervention for students, which may contribute to their prior knowledge before they proceed to answer a reading comprehension test.

Another significantly relevant theory for this study is the Multiple intelligences theory (Howard Gardner, 1983, as cited by The University of Tennessee Health Science Center, 2022), which explains how students learn and absorb information in a variety of ways, from the use of words, numbers, pictures, and music to the significance of social interactions, self-reflection, movement, and being in tune with nature. The idea behind this theory is that people learn in many different ways. Furthermore, Northern Illinois University Center for Innovative Teaching and Learning (2020) emphasized that this theory can be used for curriculum development, planning instruction, selection of course activities, and related assessment strategies. Gardner notes that individuals possess varying strengths and weaknesses across different intelligences; hence, educators should determine the optimal or most effective way to deliver course content based on the subject and the unique characteristics of the student group. This theory was applied to the study as the interventions: multimedia and code-switching to students' mother tongue or native language in paired-text, are ways wherein students can learn effectively through visuals (multimedia presentations) and prior knowledge (mother tongue/native language). With this being said, allowing students to use and navigate techniques or speak their native dialect, a language they are most comfortable using, may strongly impact learning, specifically reading comprehension. In addition, to learn effectively, students need to utilize their existing knowledge to find meaning in what the teacher presents. Speech allows individuals to connect new information with existing understanding. This potential relies on the social connections and the communication framework established by the teacher, Douglas Barnes, a British researcher (Jackson, et al., n.d).

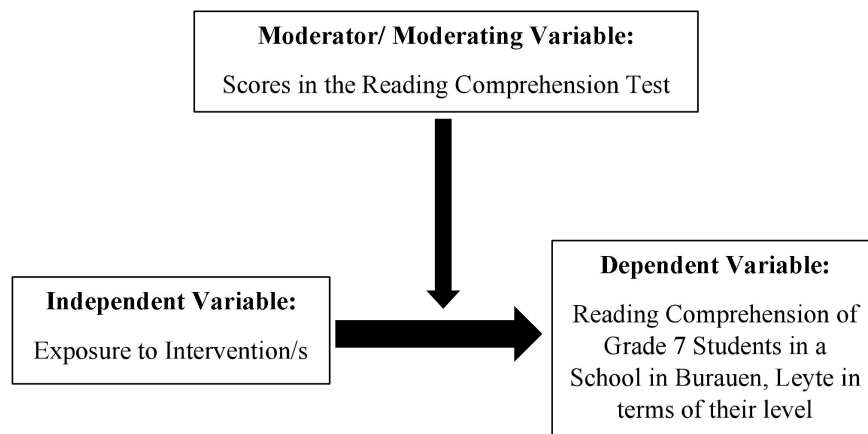
Therefore, these theoretical foundations provide a solid framework for evaluating the effects of these combined interventions on the reading comprehension of Grade 7 students in a school in Burauen, Leyte, during the academic year 2023-2024, suggesting that these tailored approaches could significantly improve reading comprehension skills.

## Conceptual Framework

Figure 1 of this section shows the conceptual framework of the study. The study's conceptual framework consists of three variables. (1) The Exposure to Intervention/s, (2) the Reading Comprehension of Grade 7 Students in terms of Quality and Level, and (3) the Reading Comprehension Assessment Scores of Students on Quality and Level. In the figure, the study's independent variable was the exposure to intervention/s. It was manipulated to produce results. In other words, this was the factor which is handled or influenced in the study. The dependent variable, on the other hand, was the Reading Comprehension of Grade 7 Students in terms of their level. This was the effect or result of the independent variable. Furthermore, it was the factor that researchers measured in order to assess the effects of the independent variable. With this being said, we can say that the reading comprehension of students depends on the exposure to intervention/s. This study investigated whether exposure to intervention/s is related to or affects students' reading comprehension. For example, the more students are exposed to or provided with an intervention, the better their performance in reading comprehension.

Another variable involved in this study was the moderating variable, which was the Scores in the Reading Comprehension Test. Moderating variables alter or "moderate" the effect that an IV, which is the Exposure to Intervention/s in the study, has on a DV, the Reading Comprehension of Grade 7 Students. In the context of this research study, a Grade 7 student's score on tests or assessments can change the effect that the independent variable "Exposure to Intervention/s" has on the dependent variable "Reading Comprehension of Grade 7 Students..."

For the intervention group, the higher the student's assessment scores, the more effective or helpful the interventions were to their reading comprehension. On the other hand, the lower the student's assessment scores in an intervention group, the less effective or helpful the interventions were to their reading comprehension.



**Figure 1.** Conceptual Framework of the Study

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## Statement of the Problem

The issue of slow reading comprehension among students has become a growing concern in the academics of students, as it not only affects their educational performance but also their overall personal growth and opportunities in the future. Despite the increasing emphasis on literacy skills in education, many students still struggle with comprehending the texts they read, leading to frustration, low self-esteem, and poor academic outcomes. This problem is further compounded by the increasing complexity of academic materials, which can hinder students' ability to focus and read effectively. As such, there is a need to address this issue and develop effective strategies to help students improve their reading comprehension skills and achieve academic success.

This study sought to compare the intervention group and control group to evaluate the effectiveness of the intervention on Grade 7 students' reading comprehension in a school in Burauen, Leyte, academic year 2023-2024. Specifically, it attempted to answer the following questions:

- 1.) What is the demographic age and gender of each of the respondents?
- 2.) How many students among the chosen respondent's experience or struggle with poor reading comprehension?
- 3.) How does the presence and absence of interventions affect the performance of Grade 7 students in terms of their level of reading comprehension?
- 4.) Were the interventions effective, or did they meet their aim to aid in the reading comprehension of Grade 7 students?

## METHODOLOGY

### Research Design

This is a quantitative study that employed a true experimental approach. True experiments are a technique wherein social scientists use two variables, independent and dependent. True experiments purposely use a random selection of subjects to neutralize the potential bias of the person experimenting. Distinctively, true experiments use these types of designs to attain the intended outcomes or results (Borg, Gall, & Gall, 1993, as cited by Psychology Writing, 2023). In a true experimental study, participants are randomly assigned to either an intervention or a control group, where the intervention group receives the intervention that is being studied, while the control group does not receive the intervention (Press Books, n.d). This randomization process helps to ensure that the two groups are equivalent at the beginning of the study and that any differences in outcomes between the two groups can be attributed to the intervention, and that any variations among them arise from random factors, not from research biases such as sampling bias or selection bias (Bhandari, 2025).

### Research Locale

The researchers conducted the study in a school in Burauen, Leyte, because a lot of Grade 7 students who are enrolled came from the far barangay(s), as per the initial data collected through teacher interviews.

Torres (2024) supports this by emphasizing that residing far from the school illustrates the challenges students encounter in their educational path. The study explored the experiences of students attending Sto. Niño High School, Tanjay City Division, who live in distant locations from the school, academic year 2023-2024. The findings indicated six themes that illuminate the participants' experiences: inconvenience, emotional distress, reduced socialization, poor academic performance, financial challenges, and resourcefulness and resilience. The study suggests that educators should be attentive to their students' circumstances and assist them in any way possible to support their education. Additionally, this research indicates that schools ought to engage with community stakeholders to enhance the execution of the school's initiatives.

Moreover, the difficult realities of education in the context of remote areas are further highlighted in a study by Orale and Quejada, (2018) pointing out that remote schools in the Philippines continue to encounter a lack of teaching resources, and educators are persistently facing difficulties in providing quality basic education in rural areas, and need dedicated, passionate teachers to deliver essential services. They aimed to record the experiences of six remote elementary school teachers in the southwestern region of Samar. Teachers' experiences in this school resemble those of numerous educators in Geographically Isolated and Depressed Areas (GIDA) throughout the country. The community, the school, and its students display poverty. The school is deficient in essential teaching and learning resources. Numerous students are slow to grasp concepts, and a few do not engage in reading. The students' families are impoverished; some miss meals and cannot afford to purchase supplies for school. Educators must ride a motorcycle and trek for kilometers on occasionally slick or muddy paths to get to the school. Several students arrive from nearby barangays and also walk to school every day. To enhance learning, educators donate part of their earnings to purchase classroom supplies. Providing funds for food and school materials for students is also typical for them. While providing enriching experiences for a disadvantaged community, the teachers in the study are also eager for a significantly improved position in the future.

Furthermore, the study of Bautista et al. (2019) also supports this, as results showed that every participant commuting a long distance to school has a class set for 7:00 AM, and the majority of them are female. Most participants rise early to handle the long travel duration each day. The researchers also discovered that a majority of the participants viewed a harsh environment as a primary factor influencing their travel to school. Besides that, rising early was regarded as the second factor influencing their commute to school due to their difficulty in controlling and managing the time required for traveling.

Silab et al (2023). focused on identifying the challenges faced by students residing in remote locations attending Makilala National High School. Results revealed that the participants faced various challenges, including: Roads Affecting School Attendance, Rainy Season Impacting School Attendance, Potential Tardiness, Distance, Crossing Rivers Presenting Risks, and Insufficient Transportation in their locations. Regarding their coping strategies, they indicated that bringing additional clothing and slippers,

waking up early to get things ready, walking to the transportation terminal, and utilizing alternative routes are the methods they use to deal with the challenges they faced

For this primary study, limited resources available to schools in far-flung barangays and the transportation difficulties faced by students from such areas were some crucial factors mentioned during the teacher interviews of the school in Burauen, Leyte, that affect students' reading comprehension and educational learning.

Consequently, the collective findings from the aforementioned literature present a strong case for the selected research locale. They indicate that students from remote or distant barangays frequently face a distinct array of socio-economic, logistical, and academic barriers that can negatively impact their educational results, including reading comprehension. The initial data gathered from the school in Burauen, Leyte, revealing that numerous Grade 7 students match this profile as per the teachers' interview, are thus supported by broader studies. Therefore, this school in Burauen, Leyte, provides a relevant and significant environment to examine the effectiveness of reading comprehension interventions, given that the student population is vulnerable to the specific challenges these seek to resolve. The current literature establishes a solid foundation, confirming that the identified local issues are truly acknowledged educational difficulties that merit targeted investigation and action. Furthermore, Burauen, Leyte has little to no published studies on how these interventions affect the level of reading comprehension, which piqued the interest of the researchers to conduct this study.

## LITERATURE REVIEW

To understand written material, an individual must be familiar with the organization of the text, the subject matter, reading techniques, and their applications in material processing and word recognition (Pang, 2008, as cited by Villanueva (2022)). Understanding is not just a language ability; it is also a broad cognitive ability (Walter, 2007, as cited by Villanueva, 2022).

Learners crucially need reading comprehension abilities in order to thrive in both educational and personal aspects of life. In students' academic experiences, reading serves as the foundation for grasping all scholarly material (Clarke et al., 2011, as cited by Rojas, 2022). As cited by Nanda and Azmy (2020), Cordeur (2010) and Park (2020) observe that reading comprehension entails the capability to retain key information and make inferences or draw conclusions. Barton (2000), as cited in Arnbak (2004) mentions that these interconnected abilities serve as a great advantage, especially for engaging in a democratic process such as securing employment, passing crucial tests, and finishing education (Nanda & Azmy, 2020). Moreover, Nanda and Azmy (2020) cite Silawi, Shalhoub-Awwad, and Prior (2020), who highlighted that reading comprehension consists of three elements: process strategies (recognition of words), background knowledge, and conceptual skills.

Reading comprehension is one of the many skills that cannot be easily or fully mastered. Albdour (2015) highlighted that the reader must utilize their abilities and understanding processes across different levels of comprehension and for all kinds of texts. Furthermore, Nanda (2020) mentions Grabe (1991),

citing Coady (1979), that new or beginner readers should concentrate more on process techniques, while proficient readers should employ abstract conceptual abilities and make effective use of their prior knowledge to anticipate the information presented in the text.

Ozdemir (2009) noted that a lack of reading comprehension can impede problem-solving abilities as well, since individuals must completely comprehend what they read in order to be skilled problem solvers Nanda, 2020). Rojas (2022) also cites Ricketts, Nation and Bishop (2007), wherein they noted that students' lack of, or limited vocabulary knowledge, may hinder their comprehension of a text, specifically when the text includes unknown words or unfamiliar vocabulary. Similarly, Chou (2011) found that the level or extent of vocabulary knowledge affects reading comprehension; therefore, students possessing a larger vocabulary can comprehend text more effectively or accurately than those with limited vocabulary knowledge Rojas, 2022).

According to the study of Adora et al. (2024), results revealed that slow reading comprehension is linked with lower academic accomplishments among middle school students, specifically Grade 7 students of Nicolas L. Galvez Memorial National High School. The study identified various factors that contribute to slow reading comprehension, such as poor decoding skills, lack of vocabulary knowledge, and difficulties with working memory. Researchers added that a notable gap exists between students' reading comprehension levels, skills or proficiency and their academic outcomes, as the findings indicated that many respondents had difficulties understanding the text, which impacted their academic performance. Hart (2021) emphasized that the cognitive elements influencing reading understanding include background knowledge, vocabulary, fluency, active engagement in reading, and analytical or critical thinking.

Moreover, in relation to interventions, a study by Caabay et al. (2024) selected seventh-grade students at Caponayan National High School during the academic year 2023-2024, focused on assessing reading comprehension levels. The findings showed that the participants exhibited proficiency in key sight words, with merely a couple of noted errors, following the four-week repeated reading aloud sessions and prompt questioning after reading, along with the Philippine Informal Reading Inventory educational process. Overall, the study showed a significant difference before and after the intervention, and concluded that even a brief intervention can significantly improve students' reading abilities.

In this primary study, the researchers made use of another intervention called Code Switching, in Paired-text from the idea of Paired-text instruction. Paired-text instruction may serve as a promising intervention for improving the reading comprehension of all students, regardless of their language background or reading ability. According to Faulkner (n.d), paired passages or paired texts are interconnected pieces of writing, and teaching students to "analyze how two or more texts tackle similar themes or subjects to enhance understanding or to compare the authors' methods" (CCSS, R.9) offers more benefits than drawbacks. Furthermore, according to Jen (2023) from Out of this World Literacy, focusing on upper elementary students, paired texts or passages consist of two brief texts that focus on a related theme or subject and can assist students in comparing and contrasting details, establishing connections, and drawing inferences, which in turn can serve as an effective tool for teaching reading comprehension. This technique may be utilized as an intervention for higher grade level students, like

seventh graders, who still struggle with the said skill, from which this study aimed to evaluate. Researchers of this primary study evaluated whether students who received paired-text instruction performed better than students who received traditional reading instruction in reading comprehension. In the context of this study, researchers integrated code-switching of English texts to students' mother tongue or native language (or vice versa) in paired- texts and images on paper or one of the multimedia materials as another intervention to help students comprehend unfamiliar, complex texts or vocabulary, thus adhering to the cognitive theory of multimedia learning, prior knowledge theory, and multiple intelligences theory.

According to Romburgh and McGuire (2023), code-switching refers to the practice of incorporating words or expressions from various languages or dialects while communicating to adapt to the specific circumstances of the conversation. In the classroom, code-switching has numerous variations and advantages for both educators and learners. Second language speakers often incorporate words or phrases into their sentences, like when a speaker inserts a native term while speaking English. This includes transitioning between language varieties, for instance, individuals using standard English for professional purposes and then reverting to another language or dialect. Code-switching also takes place in various contexts, including daily life, business, medical, governmental, and educational environments. Many individuals code-switch to signify their affiliation with a specific group or to create a welcoming atmosphere for others. In reality, numerous individuals switch languages without even being aware of it (Romburgh & McGuire, 2023).

Moreover, a study titled "The Impact of Code-Switching on Bilingual EFL Learners' Reading Comprehension" by Parisayeganepoor et al. (2016), explored the potential impacts of code-switching (CS) on the reading comprehension of Iranian bilingual English learners. Participants in the experimental group could switch codes throughout the twenty-hour treatment that spanned five weeks, whereas those in the control group had to depend solely on English for communication and instruction with no code-switching allowed. The independent samples t-test of the post-test scores, conducted after the treatment, showed significant differences in reading comprehension between the two groups, with the experimental CS group performing better than the control group. This evidence from gathered data reinforces the understanding that code-switching is a critical factor significantly influencing reading comprehension outcomes for students learning in a foreign or second language, or a language that they are not too familiar with or proficient in. For instance, in this primary study, the mother tongue or native language of seventh graders from Burauen, Leyte, is Waray-Waray, which can potentially aid in their English reading comprehension. To further investigate this, the specific interventions mentioned were utilized as an intervention to evaluate their effectiveness in reading comprehension.

Furthermore, this primary study's interventions, specifically including paired texts and code-switching, align with a similar term or concept called "textual code-switching in paired texts". A study by Lim and Eur (2017) from the Korea Open Access Journals (KOAJ), examined the impact and effectiveness of textual code-switching through paired-text instruction on the reading comprehension of 12 Korean elementary EFL (English as a Foreign Language) learners aged 11 to 13 with both low and high proficiency levels. There was a significant relationship between code-switched paired-text instruction and overall reading comprehension development of low-proficiency learners, especially skills

in literal reading comprehension and making inferences, along with reading comprehension of paired texts. The findings revealed that within the low-proficiency learners, Group D, which utilized the code-switched texts, exhibited more significant progress in reading comprehension. This result indicates that for students with limited English skills, the code-switched paired-text teaching method proved to be more successful in improving reading comprehension.

Moreover, specifically regarding the current research, Lim and Eur (2017) cite several authors and studies suggesting that paired-text instruction has several advantages, detailed in relation to motivation, reading comprehension, and vocabulary learning. For instance, even readers who were struggling or experiencing impairments were found to demonstrate interest in reading paired texts, as they offer a familiar and comfortable “context” for acquiring knowledge about the material (Sanacore, 2002, as cited by Lim & Eur, 2017). In several studies, learners were additionally observed to be more involved in reading paired texts and discovering themselves motivated or interested, and appreciating literature (Bintz, [11]; Camp, 2000, 2006; Frye, Trathen, & Wilson, 2009; Soalt, 2005 as cited by Lim & Eur, 2017). It has also been discovered to encourage hesitant readers' interests within the classroom (Tovani, 2004 as cited by Lim & Eur, 2017). Therefore, according to Camp (2006), paired-text instruction “motivates students to enjoy” and “to learn” Lim & Eur [46]. In addition, Lim and Eur (2017) cite Ciecierski and Bintz (2016, p. 33) stating that since paired-text sets have a common or shared topic and connected vocabularies, they are discovered to offer learners the opportunities not only to develop background knowledge but also to engage with the text deeply and broadly (Ciecierski & Bintz, 2016, p. 33). Paired-text sets function as “primary resources” for learners to establish intra- and inter-textual relationships. Lim and Eur (2017) also cite Soalt (2005) and Villano (2005), suggesting that paired texts offer students chances to create intertextual connections as they participate in reading. While interpreting and synthesizing information and ideas from different texts, learners utilize complex and analytical, critical thinking strategies (Camp, 2006; Giorgis & Johnson, 2002; Hynd, 1999; Walker & Bean, 2005, as cited by Lim & Eur, 2017).

According to Camp (2006), by effectively implementing paired-text instruction, students can engage their prior knowledge and connect it with new information to enhance their comprehension of the content. Consequently, students' reading comprehension inevitably improves when they establish these connections (Ahn, 2015; Alvermann & Wilson, 2011; Camp, 2006; Frye, Trathen, & Wilson, 2009; Soalt, 2005 as cited by Lim & Eur, (2017). Furthermore, Lim and Eur (2017) cite McKeown and Beck (2004) stating that, in addition to these advantages, vocabulary development is another way paired-text instruction can enhance students' reading comprehension. Jang (2012) and Soalt (2005) indicate that paired-text sets contain several synonyms that recur throughout the text collection, thus helping students in enhancing their comprehension and familiarity with the targeted vocabulary items (Lim & Eur, 2017).

In addition, Espiña and Ibojo (2023) in their study titled "Developing Comprehension Skills in English and Filipino Through Code Switching: An Experimental Study", aimed to assess the effectiveness of code switching in developing comprehension skills in English and Filipino among Grade seven (7) to ten (10) students of Canidkid Integrated School. Employing a quasi-experimental method for data collection, code switching had a significant effect on the skill, effectively improving the reading comprehension abilities of the students. With this, the researchers suggested that educators should

consistently monitor or oversee students who exhibit low reading rates, and must use different methods to assess students' reading skills.

The Philippines scored the lowest in reading comprehension, achieving an average of 340 points, which is below the overall survey average of 487 points. In the context of the findings, the Organization for Economic Cooperation and Development (OECD) observes that the expenditure per student in the Philippines was the lowest among all countries participating in the Programme for International Student Assessment (PISA), and this expenditure was 90% less than the OECD average (Conoza, 2022).

In Nicole Angeline Vertucio's (2019) research on "Reading Comprehension Skills in English of Grade 7 Students at San Nicolas National High School School Year 2018- 2019," results showed that the majority of the Grade 7 students performed poorly in reading comprehension. The respondents agreed that fluency, vocabulary, background knowledge, comprehension techniques, and a lack of self-motivation were among the factors influencing reading performance.

A study titled "Knowledge Acquisition Practices and Reading Comprehension Skills of the Learners in Hilongos South District, Leyte Division, Philippines" found that there were significant relationships between learners' knowledge acquisition practices and their prior knowledge, vocabulary, as well as the teachers' knowledge acquisition practices in relation to the learners' vocabulary level. Significant relationships were also found between prior knowledge and vocabulary to the reading comprehension of the learners (Tavera & Casinillo, 2020).

Another study titled "Effect of SQ3R Method on the Students' Reading Comprehension" was conducted by Geryl D. Cataraja, with Third Year Bachelor of Elementary Education students at the Palompon, Leyte Institute of Technology as respondents. The study found that utilizing SQ3R (survey, question, read, recite, and review) as an intervention showed significant improvement in students' inferential and evaluative skills. A notable difference is observed before and after the intervention was implemented, which suggests that the student respondents' performance significantly improved following the adoption of the SQ3R method in the educational process. The study of Cataraja (2022) aligns with this primary study's concept that the grade 7 students need a different reading strategy or an intervention to improve their reading comprehension, and that they can potentially perform better if they are given interventions compared to simply utilizing conventional reading methods.

Research on "Strengthening the Reading Comprehension of Students Using a Context Clue" was also conducted. The respondents were all bona fide Grade 4 learners of 8 elementary schools in San Ricardo District, Southern Leyte, Philippines. The paper concluded that utilizing context clues as an intervention enhanced the reading comprehension of the students. Students who have been taught context clue strategies over time increase their skill in finding clues within the text and improve comprehension levels. This study also found a positive impact of teachers' strategy or intervention and student learning. Furthermore, students with higher reading levels through good vocabulary will grow or progress faster and comprehend text quickly, as well as across various learning areas (Oclarit & Casinillo, 2021).

Olcarit and Casinillo (2021) also cite various authors and studies suggesting that in order to enhance students' academic performance, they need to experience a specific type of instructional approach or intervention (Adewale, 2014; Casinillo & Guarte, 2018; Suarez & Casinillo, 2020). The Department of Education (DepEd) in the Philippines offers a standard tool to evaluate and detail students' reading abilities in a classroom assessment, called the Philippine Informal Reading Inventory (Phil-IRI). Phil-IRI is the updated evaluation instrument that includes a collection of leveled passages given to both the entire class and individual students, aimed at assessing a student's reading proficiency (Olcarit & Casinillo, 2021).

A study titled “Factors Affecting the Reading Comprehension and Performance of Grade VI Pupils” aimed to examine the significant relationship between the reading factors and reading performance of 20 Grade 6 students from Visares Elementary School, Capoocan District, Leyte Division for School Year 2018-2019. Results showed a significant relationship between the degree of factors influencing the reading abilities of sixth-grade students regarding pupil, language, home, community, and reading performance. Therefore, the study concludes that the factors affecting the reading comprehension and reading performance of the grade 6 pupils are: pupil, language, home, and community (Manaois, 2021). This aligns with this primary study’s attempt to examine the integration of the grade 7 students’ familiar, native language or mother tongue (Waray-Waray) in the local community as an intervention to evaluate effectiveness or improvement in their reading comprehension.

According to the findings of Tambis et al. (2023) titled “Assessment of Reading Comprehension Skills of Senior High School ALS Learners: Basis for School Reading Progress Program”, Grade-11 Alternative Learning System students at Biliran National Agricultural High School struggled to understand and answer the reading comprehension test, aligning with what Flippo (2014) noted about learners at this stage encountering materials that are so challenging and viewing it to be complex or problematic, that they cannot respond properly. This emphasizes the crucial need for a comprehensive and careful assessment for effective interventions through both student and teacher-directed instruction (Tambis et al, 2023). Moreover, the survey questionnaire adapted from Tong and Ming-hao (2017) suggests the presence of barrier factors that hinder learners' comprehension, such as: Reading habit, Reading Strategies, Psychological factors, and Culture background barriers, Reading interest factor, Discourse barriers, Grammar barriers, and Vocabulary barriers respectively. These factors serve as a foundation to enhance the school's reading progress program (Tambis et al., 2023).

In more local contexts, Claros (2024) explored how code-switching in Daryll Delgado's novel *Remains*, which narrates the aftermath of Typhoon Haiyan (Yolanda), shapes the reader's understanding of trauma. He concludes that using Filipino, Waray, and English is an impactful tool to access trauma, which goes beyond a stylistic choice. Claros further argues that code-switching allows the novel to access a kind of trauma that resists being signified by one language by examining how this linguistic technique enables readers to connect or deeply resonate with the characters’ complex emotional and psychological experiences, fostering empathy and a deeper understanding of their struggles. This pushes for bridging the local and global, the real and imagined, to reveal wounds exacerbated by imperial and environmental violence. Hence, this aligns with this main study because it examines the use of code-switching in a literary text and can further explore the relationship between language and trauma, or in general, the

struggles or challenges of people, students in particular, aligning with the researchers' curiosity on being open to the multifaceted nature of language and its various impacts, when applied to education. Claros (2024) employs a close reading approach, analyzing Remains through theoretical frameworks. As Waraynon researchers of this primary study, curiosity is present regarding how mother tongue as prior knowledge can help students struggling with English comprehension, especially through translation or code-switching.

A true-experimental study by Desoyo (2021) analyzed the effectiveness of code-switching as a language teaching strategy or tool using the grammar-translation method to enhance comprehension among Grade 7 students in Tanauan, Leyte, Philippines, bridging the gap between students' existing (prior) language knowledge and their ability to comprehend English. He concludes that this can be a valuable tool for improving students' understanding of basic language competencies, like capitalization, punctuation, grammar, and sentence structure, and allows teachers to tap into students' existing language knowledge, leading to a more accessible and engaging learning experience. This aligns with this primary study's objective of evaluating language education interventions, as it examines code-switching in a language teaching context, its relationship with comprehension, and provides insights into how language can facilitate learning and understanding.

Payne and Oyzon (2020) explored Waray verb morphology, analyzing how its structure influences language understanding and use. It examines transitivity, modality, and voice, identifying inflectional affixes essential for verb predicates. The article concludes that transitivity and modality are the two major dimensions of the inflectional paradigm in Waray, going beyond a typologically rare "Philippine type" system, and believes that their approach will make it clearer and easier to understand the clause structure of Philippine languages for linguists working outside Philippine traditions. Similar to the aforementioned study by Desoyo (2021), Payne and Oyzon (2020) integrate Waray into their study, aligning with the interests of the researchers of this primary study, as Waraynon students from Leyte, which may offer valuable insights in the educational sector for underperforming Waraynon learners.

Moreover, the study of Simbre and Cabigas (2025) explored how Mother Tongue-Based Multilingual Education (MTB-MLE) positively impacts Grade 3 pupils, addressing the gap in understanding its effectiveness in promoting inclusive and equitable learning environments, and concluded that MTB-MLE positively affects language development, cognitive skills, socio-cultural awareness, and academic performance. This study emphasizes the need to consider cultural and linguistic backgrounds to foster inclusive education. In the context of this primary study on interventions for reading comprehension of grade 7 students in Burauen, Leyte, the impact of Waraynon students' MTB-MLE on academic performance, and its relationship with language and learning, provides insights into how language facilitates learning and understanding. This significantly highlights the importance and benefits of using a familiar language (prior knowledge), connecting it to other contexts and instruction delivery.

This primary study investigated the impact or effectiveness of code-switching within paired texts (textual code-switching in paired texts), where unfamiliar English words or vocabulary observed from a shown video animation were aligned with images in paper (multimedia presentations). Some terms were

also translated or code-switched to Waray-Waray, a native language also referred to as Lineyte-Samarnon, spoken by the chosen participants in Leyte (prior knowledge). This approach enabled the researchers to evaluate grade 7 students' reading comprehension based on their prior language knowledge, the presence of multimedia materials, and the presence of multiple interventions to support students' diverse ways of learning (multiple intelligences). The established connection between oral language weaknesses and comprehension difficulties (Hulme & Snowling, 2011), along with all the aforementioned, various literature, further justify exploring interventions that bridge these gaps. Overall, these reviewed bodies of related literature, global, international, national, and local studies, and theoretical underpinnings provide a robust foundation for evaluating the effectiveness of these combined interventions on the reading comprehension of Grade 7 students in Burauen, Leyte, suggesting that such tailored approaches potentially hold significant promise for improving comprehension skills.

### **Research Respondents**

Grade 7 students are in the critical part or stage of their reading development. They are adjusting, adapting, or, to put it, transitioning from the Elementary to High School level of learning. They are expected to be reading more complex text, which needs reading comprehension skills. Moreover, an article discussed the challenges and opportunities that Grade 7 students face as they transition from elementary to middle school. According to an article by AFFECT (n.d), Akos (2002) noted that there are contextual differences between elementary and middle school, such as unfamiliar peers and teachers, as well as new expectations and school rules. Additionally, personal changes that take place physically, emotionally, and socially as children enter puberty can magnify other challenges that students experience during this transition (Steinberg, 2011 as cited by AFFECT, n.d). Parents may also struggle with knowing how to best support their children through these changes and as they experience shifts in friendships and increased stress over school.

Moreover, a study by Dela Rosa and Paragas (2024) examined the skills of the Grade 6 Pupils during the School Year 2022-2023. Results and recommendations align with this primary study's crucial emphasis on prior knowledge of students, local or culturally relevant strategies and interventions on reading comprehension, as well as difficulties faced by students in this critical stage. The reading difficulties faced by the Grade 6 students are continuing to evolve with an emphasis on foundational comprehension and making meaning on fluency, vocabulary, context understanding, strategies for comprehension, lack of self-motivation, insufficient background knowledge, and inability to understand the texts, which were the foremost issues. Similarly, the reading comprehension skills of students across vocabulary understanding are progressing. Thus, based on the findings, given that even Grade 6 students continue to face challenges with reading comprehension, vocabulary, and background knowledge, and their skills are still developing, it is crucial to address their significant transition to the next grade level, progressing from elementary to high school in Grade 7. Furthermore, Dela Rosa and Paragas (2024) also recommend that teachers ought to offer students particular resources or strategies relevant or tailored to their demographic background, such as culturally appropriate materials for learners from a certain context. Consequently, interactive materials will be created to tackle the issues students face. This primary study's utilization of videos, images, or multimedia materials, and textual code-switching (Waray to English or vice versa) in paired text handouts, concerning respondents' prior knowledge and cultural linguistic

background as interventions, evaluated the reading comprehension of students through the help of context and interactive factors.

### **Sampling Technique**

To determine the specific sample for this study, one of the researchers in the group was tasked with going to the research locale to ask for the total number or population of Grade 7 students enrolled in the chosen school. According to the Educational Management Information System (EMIS) Office, there are 238 Grade 7 students of academic year 2023-2024, with 7 sections, of which 121 are males, and 117 are females. Through consultation with experts, another researcher went to the research locale to ask the Junior High School (JHS) Department, specifically the Grade 7, if there were any identified students who struggled with reading comprehension. Through school-to-school communication, English teachers provided the researchers with their Top 40 Grade 7 students who were identified as struggling with reading comprehension and requiring extra attention. These students share characteristics, such as attending the same school in the same academic year and being identified as struggling in reading comprehension by the Grade 7 English Subject Area Coordinators and teachers, making the population or sample highly homogeneous.

These 40 students served as the study's sample. This method is a type of non-probability sampling technique called Purposive or Purposeful Sampling, wherein units are selected, or respondents are chosen, because they have characteristics that researchers need in the sample. In simpler terms, units are chosen intentionally or on purpose in purposive sampling (Nikoloppulou, 2023). Furthermore, purposive sampling involves a selection of individuals or cases that fit a study, focusing in depth on relatively small samples (Nikoloppulou, 2023). This sampling technique was effective in determining which among the 238 Grade 7 students in the chosen school struggled with reading comprehension, making them suitable respondents for our study.

As it is said, samples formed in purposeful or purposive sampling are highly suitable for the context of research, survey, or experiment. In addition, this study is a type of educational research where this technique is relevant. According to Vijayamohan (2025), purposive sampling is used extensively for educational research. After identifying and determining the suitable respondents for this study, the researchers utilized a probability sampling strategy in assigning the 40 students to their respective groups (intervention or control), which is most commonly used in quantitative research. According to McCombes (2019), as cited by Allunam et al. (2023), probability sampling is the most trustworthy in terms of creating outcomes that would accurately represent the population. This means that each respondent of this primary study among the 40 identified grade 7 students has an equal chance of being assigned to either an intervention or a control group, often achieved through software algorithms or random sampling techniques.

The Random Ready Group Generator, an online randomization software, was used to assign the 40 students to their respective groups, according to the student number provided by the Grade 7 teachers in a given list. Utilizing random generator software or apps can significantly enhance the robustness and reliability of RCTs. The random group generator tool allows the randomization of the names or list items

and divides them into a specific number of groups. According to Random Ready, they aim to form the desired number of groups from a provided list. The tool can quickly mix or shuffle and randomize the entries to form groups randomly (Random Ready, 2023). Furthermore, the company of this tool states that it employs an advanced algorithm to divide a list of entries into the specified number of teams or groups, where advanced artificial intelligence enables it to deliver distinctive, singular, and unbiased results, which then allows for preventing selection bias, making the sampling distribution equal for both groups.

### **Research Instrument**

The research instruments for this study were: a reading comprehension test that was specifically designed to measure the quality and level of reading comprehension, scoring rubrics to determine their quality and level of reading comprehension, and the interventions: multimedia materials such as video and photos, paired and code-switched texts (also known as textual code-switching in paired texts), to test its effectiveness to the intervention group students. This study also used a randomized controlled trial (RCT).

In other words, participants are randomly assigned to either an intervention group or a control group. The intervention group receives the intervention that is being studied, while the control group does not receive the intervention. An RCT is the most rigorous type of experimental study, and it is the best way to determine the causal effects of an intervention. By randomly assigning participants to the intervention and control groups, RCTs minimize the risk of bias. In this way, participants are randomly assigned to one of two or more groups, and each group receives a different treatment. In this case, the two groups would be the intervention group and the control group.

*Construction/Origin.* Overall, this study utilized 4 types of research instruments. First, the proposed interventions are multimedia materials/ presentations that came from related literature and handouts that contain code-switched and paired texts (textual code-switching in paired texts: English-Waray), which aim to test their effectiveness and analyze their impact on students' reading comprehension. Second, the use of a Reading Comprehension Test (RCT) will help researchers test students' quality and level of reading comprehension, which are the center of focus in this study. The researchers chose a particular, existing reading passage entitled "The Boastful Turtle", which is suitable or fit for seventh graders. One of the books of the researchers, "Essential English: Worktext in Literature and Language for Grade 7" by Rex Bookstore Gonzales and Francisco (2017), paved the way for researchers to find the reading passage on the internet. Researchers also prepared their own version of a test questionnaire for the chosen reading material that helped analyze the study's dependent variables, the students' reading comprehension in terms of the focused aspects.

Some test styles of the prepared test questionnaire were adapted from an unpublished study by Allunam et al. (2023) titled "Impact of English-Language Series with Subtitles on the English Proficiency of Grade 12 Students from a Private Learning Institution in Tacloban City", wherein they adapted their test questionnaire from English– Language Proficiency Assessment made by Transparent English, which includes questions that test the respondents' reading comprehension. They were also involved in making their own research instrument, such as their self-made survey questionnaire for the demographic

information of their respondents, which was then validated by research experts. Validation of research experts on this study's self-made or newly prepared version of the test questionnaire for the chosen reading passage was strongly considered as well.

Furthermore, the researchers adapted Part I of their survey questionnaire for the demographic information section of this study. Another instrument for this study was the use of scoring rubrics or criteria for students in order to assess or evaluate their quality and level of reading comprehension, and compare the performance of the intervention and control groups through their scores. The rubrics come from existing related literature, which was modified according to the study's objectives, which were chosen or further validated by English experts or research professionals. Last but not least, utilizing a Randomized Controlled Trial in this study aided in comparing the reading comprehension of students through the difference in treatments between the groups, which led to evaluating the effectiveness of the intervention.

*Reliability/ Validity.* The use of the research instruments mentioned helped the researchers find answers to their formulated research questions and measure the intended variables of the study. To further ensure the validity of the research instruments, consultation with English or research experts was conducted.

### **Ethical Standards**

This section of the study includes ethical considerations for the respondents' well-being, such as Informed Consent, Confidentiality, Privacy, Protection of Participants, and Seeking Approval for the Research Instrument. Researchers will ensure that respondents' personal experiences or their assessment scores and results will be responsibly managed and kept discrete so as not to threaten their security, image, and reputation. Furthermore, strict measures will be implemented to mitigate any potential bias arising from respondents' personal experiences with the research subjects.

To uphold respondent choice, the researchers have granted students the option to use aliases or nicknames to preserve the security and confidentiality of their identities. For instance, in the research study, students have the choice to either use their actual name, such as "John Smith," or opt for an alias like "Student123" to safeguard their privacy during the investigation. Either way, whether they choose to use their true names in the study or not, their names will not be used during the discussion of results since this is a quantitative study that usually uses numbers or quantities for research findings and discussions. For example, the intervention group demonstrated better reading comprehension performance, displaying higher assessment scores in the aspects of quality and level of reading comprehension. Conversely, among the control group, students' scores indicate a great need for exposure to intervention/s to address challenges in reading comprehension and related skills.

Emphasizing the voluntary nature of participation, students are assured the freedom to withdraw from the study at any point, and no explanation is required for their decision. Seeking advice or approval from research professionals to carry out the study was considered. Generally, the results or findings of this

study will be kept discrete and are purely for research and educational purposes only. This commitment to ethical practices reinforces the integrity of the research process.

## **Research Procedure**

### ***Pre-data Collection***

1. Obtain permission from the EMIS Office for initial data gathering, such as asking the school's identified Grade 7 students of Academic Year 2023-2024 who are struggling with reading comprehension, contact information for the sake of school-to-school communication, and such.
2. Prepare the interventions and develop a reading comprehension test that is specifically designed to measure the quality and level of reading comprehension. [Instrument development]
3. Seek feedback or recommendations, approval, or validation from English or Research experts regarding the interventions and questionnaire, then pilot the test with a small group of students to ensure that it is reliable and valid [Instrument refinement]
4. Randomly assign the students to either an intervention or a control group.
5. Obtain permission from the school principal and the research respondents or participants. [Administrative]

### ***Validation of Research Instruments***

1. Write a letter obtaining permission from the chosen experts who will check or validate the specific instruments, and provide feedback or recommendations.
2. Provide experts a copy of the instruments that need to be validated with the research paper, along with a validation sheet containing necessary information such as the research title, researchers, the expert's highest educational attainment or degree, and the school they graduated from, a feedback box, their printed name and signature.
3. Compile the instrument feedback sheets of the experts or validators.
4. Make necessary corrections or adjustments according to the expert's feedback.

### ***Actual Data Collection***

1. Implement the specific intervention/s with the intervention group. [Intervention implementation]
2. Provide the control group with the usual instruction. [Controlled group treatment]
3. Administer the reading comprehension test to both the intervention and control groups at the end of the intervention period. [Data collection]

### ***Post-Data Collection***

1. Finalize or check the scores of the students in the test questionnaire.
2. Evaluate or determine their reading comprehension performance using the scoring rubric.
3. Compare the results of the two groups to determine the effects of the intervention on students' quality and level of reading comprehension.

### *Scoring Rubrics on Students' Level of Reading Comprehension*

Table 1, shown below, was used to interpret the Level of Reading Comprehension of the respondents based on their scores. This table was adapted from the study of Richard Sambajon Agbayani, as cited by Allunam et al. (2023), with his study entitled “Assessment toward Determining the Writing Proficiency Level of STEM, HUMMS, and ABM Twelfth Graders.” This table underwent a few modifications through consultations or validation from English and Research experts.

**Table 1.** *Scoring Rubrics to Assess Student's Level of Reading Comprehension.*

Range of Scores	Category/ Level	Description
17-20	Excellent	Student accurately demonstrates with high level: understanding of text
13-16	Good	Student accurately demonstrates understanding of text
10-12	Average / Fair	Student partially demonstrates understanding of text
6-9	Poor	Student has difficulty/ struggles in understanding the text
5 below	Very Poor	Student does not demonstrate understanding of text

### **Paired-Samples t- Test**

The researchers used a comparison-type test, specifically the Paired-Samples t- test in Microsoft Excel. A t-test is a statistical method that infers whether there is a significant difference between the means of two groups and their relationship (Hayes, 2025). It is frequently applied in hypothesis testing to assess if a treatment or process truly impacts the population of interest, or if there are differences between two groups (Bevans, 2023). In this study, the t-test will be useful in comparing the mean scores of students from the intervention and control groups, and testing the hypothesis to whether the interventions used have a significant effect on students' reading comprehension. Moreover, the Paired Samples t Test analyzes the means of two measurements obtained from the same person, object, related units, or uniform population, and its primary aim is to assess if there is statistical evidence that the average difference between paired observations significantly differs from zero (Kent State University Libraries, n.d)

## **RESULTS AND DISCUSSION**

### **Demographics of the Respondents**

Table 2 of this study shows the ages of the respondents in this research; it is categorized as follows: 26 or (65%) of the respondents are 13 years old which represents the majority of the respondents, 8 or (20%) are aged 12 years old which comes the second highest, 4 or (10%) are 14 years old which comes the third highest, and 2 or (5%) are 15 years old which is the minority.

**Table 2.** *Age of Grade 7 Students in a School in Burauen, Leyte*

Age	Frequency (f)	Percentage (%)
12	8	20%
13	26	65%
14	4	10%
15	2	5%
Total (N)	40	100%

Table 3 reveals the gender of the respondents in a school in Burauen, Leyte. As can be observed, males made up the majority of survey respondents with 33 (82.5%), followed by females with 6 (15%), and then prefer not to say with 1 (2.5%).

A study by Oda & Kadhim (2017) on the relationship between gender and reading comprehension at the College Level revealed that females outperform males in the "critical level" to a statistically significant extent. Given this, when college researchers in reading comprehension include "gender" in their studies, it becomes even more significant for research at lower grade levels. Moreover, the findings of their study align with our study's outcomes, showing that most of the males in the sample face greater challenges in reading comprehension than females. This highlights the need for future studies to focus on the comprehension growth of males.

**Table 3.** *Gender of Grade 7 Students in a School in Burauen, Leyte*

Gender	Frequency (f)	Percentage (%)
Male	33	82.5%
Female	6	15%
Prefer not to say	1	2.5%
Total (N)	40	100%

### Reading Comprehension Test Results

Table 4 shows the items per category in the given test questionnaire to the respondents from each of the two groups, and the total number of correct answers per category. According to the data gathered for the intervention group, there are 42 correct answers in the easy category, 40 in the medium, and 35 in the hard category, for a total of 117 correct answers in the test of students from the intervention group. Meanwhile, the control group had 41 correct answers in the easy category, 43 in the medium, and 28 in the hard category, for a total of 112 correct answers. Therefore, more students from the intervention group got correct answers in the easy category, more students from the control group got correct answers in the medium category, and more students from the intervention group got correct answers in the hard category.

Overall, more students from the intervention group got correct answers in the reading comprehension test than students from the control group, with slight gaps

**Table 4.** *Total Number of Correct Answers per Category in Each Group.*

Test Category and Items	Total Number of Correct Answers per Category (Intervention Group)	Total Number of Correct Answers per Category (Control Group)
Easy (1-8)	42	41
Medium (9-16)	40	43
Hard (17-20)	35	28
Total (N)	117	112

### **Grade 7 Students' Range of Scores and Level of Reading Comprehension**

Tables 5 and 6 below present the range of scores and level of reading comprehension of both groups through percentages and frequencies. It is clear that the majority of the students fall under the “Poor” to “Very Poor” level, and only a few made it to “Average”.

The results of this study reveal a complex landscape of reading comprehension difficulties among struggling Grade 7 students in remote areas like a school in Burauen, Leyte. The findings indicate poor scores and low levels of comprehension, illustrating both alignment and contradiction with the aforementioned theoretical frameworks and literature. A critical evaluation of these results highlights the various difficulties faced by these students while trying to enhance their reading comprehension skills.

The study strongly supports the Prior Knowledge Theory (Yin, n.d), which posits that a learner's foundational skills and existing background knowledge significantly affect their understanding of new information, and this includes reading comprehension. This was particularly evident during data collection, where students struggled with basic vocabulary in test questions as they asked about the meaning of words on some questions or choices in the test questionnaire. It is important to note at this point that understanding the story through the provided interventions is still less effective in aiding students' reading comprehension level when they do not even get to fully understand the test questions.

The anecdotal evidence from one of the teachers in the locale, who was also the English Subject Coordinator, indicated that only 2 out of 150 students passed the recent Philippine Informal Reading Inventory (Phil-IRI) assessment due to insufficient vocabulary. The teacher further stated that the major reasons were due to students not even knowing the most basic words and that many were struggling with foundational literacy problems. This aligns with the studies of Ricketts, Nation, and Bishop (2007) and Chou (2011), and local studies by Tavera and Casinillo (2020), as well as Oclarit and Casinillo (2021), who identified limited vocabulary as a primary barrier to reading comprehension. Furthermore, this also aligns with the findings of Vertucio (2019), which revealed that many Grade 7 students at San Nicolas National High School struggled with reading comprehension significantly due to deficits in vocabulary and background knowledge. Despite the interventions' attempt to utilize code-switching from English to Waray-Waray to build on students' linguistic prior knowledge, the results suggest that this strategy alone

was inadequate in overcoming foundational comprehension challenges. In addition, this aligns with the findings of Hulme and Snowling (2011), emphasizing the connection between reading-comprehension challenges and oral-language weaknesses. The foundational issues of Grade 7 students in a school at Burauen, Leyte, both tapped and untapped, might indicate deeper or more complex problems that short-term interventions fail to address adequately.

Moreover, international studies by Lim and Eur (2017) and Parisayeganepoor et al. (2016) emphasized that these interventions significantly improved reading comprehension for low-proficiency learners. A local study by Desoyo (2021) in Tanauan, Leyte, also affirmed the value of code-switching in improving reading comprehension. This study's findings showed an effect, evident in how the intervention group scored slightly higher than the control group, which somehow aligns with a few studies in the literature. However, the small score gaps or slight differences between the groups, and the lack of a statistically significant difference in this study's intervention group based on statistical tests, imply that the interventions or processes used do not guarantee effectiveness in aiding students' reading comprehension, are not significantly effective, and thus indicates that these methods may not be as robust as previously suggested.

Furthermore, the results of this study contradict Mayer's Cognitive Theory of Multimedia Learning (1997), which suggests that learning is optimized or improved when information is presented in multiple formats, such as text and visuals (watching videos complementing the text or goals/lessons), or in terms of integrating social interactions such as explicit discussions, introspection or how students observe and discover how they comprehend readings, physical movement and being in tune with nature. The intervention group may have engaged with multimedia presentations, and they may have scored slightly higher than the control group, but their improvement or score difference based on the results was not statistically significant. This then suggests that multimedia exposure alone may not be enough for students with significant or severe reading comprehension challenges. This aligns with the study Mwaamukange (2018), which found that videos are most effective as supplementary tools within a broader instructional framework. This leads to analyzing Gardner's Theory of Multiple Intelligences (1983), suggesting that varied teaching methods should involve several learning styles. Although the interventions used various strategies, they may not have sufficiently covered a wide range of intelligences. Incorporating additional interactive and kinesthetic tasks, along with chances for social learning and self-reflection, may have enhanced the study.

Overall, the results show an effect of the used interventions due to the intervention group's higher score than the control group. However, the small score gap is not statistically significant and indicates that the interventions were not highly effective enough in aiding students' reading comprehension, or the higher intervention group score might have been due to chance or other factors. The interventions used may need further development alongside other potentially effective interventions in aiding students' reading comprehension and foundational literacy.

In addition, the results of this study on reading comprehension challenges faced by Grade 7 students in rural areas correspond with and are further clarified by several supporting studies:

The respondents' performance based on the results, and the chosen school in Burauen, Leyte, with many students from far barangays facing logistical and socio-economic barriers, corresponds with the findings of Torres (2024) on challenges faced by students living far from school, leading to poor academic performance. Moreover, the complex challenges of students that were evident in this study, particularly their struggles with basic vocabulary, may be significantly linked to their linguistic background and home/community environment, given that many of these students come from far-flung barangays or remote areas. These align with the broad factors identified by Manaois (2021) in studying the factors affecting the reading comprehension and performance of Grade VI pupils, by focusing on integrating the Waray-Waray mother tongue in this study and acknowledging the local community context as interventions, as well as analyzing the learners' remote environment. Silab et al. (2023) also emphasized challenging factors such as road conditions, rainy season impact, and insufficient transportation in remote areas. This supports the respondents' remote area backgrounds, which may have significantly affected consistent school attendance and focus, thus contributing to the low reading comprehension levels and performance of students.

The following literature was also significant in emphasizing and analyzing the interventions' design and purpose, which significantly contributed to the interpretation of findings in this study, which may then critically contribute to future, further studies:

This study's interventions, which evaluated the use of English-Waray code-switching as an intervention to leverage prior knowledge and linguistic background of the respondents, align with the study of Claros (2024) that explored code-switching (including Waray) as an impactful tool for understanding complex experiences in Daryll Delgado's novel, *Remains*. While this study's interventions did not show a statistically significant effect, Claros (2024) provided a framework for the potential of code-switching to foster deeper understanding. Moreover, the latest study by Simbre and Cabigas (2025) strongly supported this study's objective for utilizing code-switching to Waray-Waray, which concluded that MTB-MLE positively impacts language development, cognitive skills, and academic performance, which supports the theoretical underpinnings of this study's approach to leveraging students' familiar language and prior knowledge to facilitate learning. Despite the interventions not showing statistically significant effects, the findings of Simbre and Cabigas reinforce the broader benefits and importance of considering cultural and linguistic backgrounds in education, and call for further research.

Hence, this study's results of prevalent poor reading comprehension among Grade 7 students in a school in Burauen, Leyte, are strongly contextualized and supported by the supporting literature. The environmental and locale-focused studies emphasized the socio-economic and logistical challenges faced by students in remote areas, which directly impacted their academic performance, including reading comprehension. The cultural, local, or Waray context literature theoretically validates the interventions used in this study, despite the statistically insignificant difference or effect. These highlight the complex interplay of interventions, environmental factors, and linguistic backgrounds in affecting reading comprehension outcomes in the region, and are also crucial considerations and contributions for further studies on such matters.

**Table 5.** *Students' Scores of the Intervention Group*

Range of Scores	Level of Reading Comprehension	Frequency (f)	Percentage (%)
17-20	Excellent	0	0%
13-16	Good	0	0%
10-12	Average / Fair	3	15%
6-9	Poor	8	40%
5 below	Very Poor	9	45%
	Total (N)	20	100%

**Table 6.** *Students' Scores of the Control Group*

Range of Scores	Level of Reading Comprehension	Frequency (f)	Percentage (%)
17-20	Excellent	0	0%
13-16	Good	0	0%
10-12	Average / Fair	1	5%
6-9	Poor	9	45%
5 below	Very Poor	10	50%
	Total (N)	20	100%

Table 7 presents the quantified data of the total, mean, and standard deviation scores of both the intervention and the control group. With a total score of 118 and 112, respectively, the intervention group scored higher than the control group. This shows, at first look, that the interventions may have had an effect.

However, in terms of significance, the researchers fail to reject the null hypothesis due to the small score gap or 6-point difference between the groups, and a hypothesized mean difference of 0, indicating that the impact of the interventions based on the score difference is not statistically significant enough to assert that the interventions were highly effective. This may be due to a lack of respondents in the sample size, a lack of finding other interventions, other third factors (mediating variables), or the need to further develop the interventions used in the study.

**Table 7.** *Other Quantitative Data and Paired Samples t-Test Results*

Quantitative Data	Intervention Group	Control Group
Total Scores	118	112
Mean Score	5.9	5.6
Standard Deviation	2.27	2.28
Paired Samples t-Test Results	Data	
t computed value (test statistics)		0.069

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t- critical value	1.729
Hypothesized Mean Difference	0
Pearson Correlation	0.9277

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Furthermore, the results of the Paired Samples t-Test showed a hypothesized mean difference of 0. According to Statistics How To (n.d.), the hypothesized mean difference arises in applications such as Microsoft Excel when executing specific analyses (like a t-test), and that by itself, the mean difference does not provide much information (aside from showing a numerical difference), which may be statistically significant or simply a result of random variations or chance. Thus, a hypothesized mean difference is the expected or anticipated difference between the average values (means) of two or more groups or conditions in quantitative research. In addition, according to BC campus (n.d.) and National University Academic Success Center (n.d.), “Null” means “nothing”, which then claims that there is no significant difference among groups or no correlation between variables. Furthermore, it is an assumption of existing conditions or no difference. A hypothesized mean difference of zero, which leads to a null hypothesis, implies that there is no significant difference or effect between the groups being compared in this study. The test also showed a t-computed value or test statistic of 0.069, less than the t- t-critical value of 1.729. According to Cuemath (n.d.), if the t-computed value or test statistic is less extreme than the t-critical value, then the null hypothesis cannot be rejected. Since the t-computed value is less than the t-critical value in this study, after conducting the paired samples t-test in Excel, the researchers retain the null hypothesis and reject the alternative hypothesis.

Lastly, a Pearson Correlation of 0.9277 indicates a high degree of correlation between the two variables mentioned in the Conceptual Framework: Exposure to Intervention/s, which is the independent variable, and Students’ Level of Reading Comprehension, which is the dependent variable. According to Complete Dissertation by Statistics Solutions (n.d.), values between  $\pm 0.50$  and  $\pm 1$  suggest a strong or high degree of correlation. Furthermore, a coefficient above 0.75 or below -0.75 is considered a high degree of correlation Nickolas [64]. However, Khan Academy (n.d) states that even if there is a correlation between two variables, researchers cannot conclude that one variable directly affects or causes a change in the other. This relationship could be coincidental, or a third factor may be causing both variables to change. Moreover, Hayes (2024) from Investopedia noted that it is essential to recognize that correlation does not automatically mean causation. Variables A and B could increase and decrease simultaneously, or A could increase while B decreases; however, it is not always the case that one factor's increase directly impacts the other’s rise or fall. Both could result from an underlying third factor, like commodity prices, or the observed connection between the variables might be merely coincidental.

In this study, the moderating or mediating variable, which is the Scores in the Reading Comprehension Test, may have influenced the change in variables, and this may potentially be the underlying third factor. Another possible factor may be due to a lack of respondents, the types of test questions, or the interventions themselves, and many others. Therefore, a high degree of Pearson Correlation between the interventions and reading comprehension level does not necessarily mean that the interventions were highly effective enough to aid in students’ reading comprehension. Explanations regarding the paired samples t-test result from existing literature validate this and are also evident in the findings, notably the hypothesized mean difference of zero (null), as well as small score gaps or

differences between the groups. There was no significant difference, and any correlation or effect observed in the test was potentially due to chance or other underlying third factors.

## CONCLUSION

This study investigated the effectiveness of interventions, specifically the use of multimedia materials such as videos and photos, handouts with code-switched and paired texts containing relevant information about the given passage. As stated in the introduction, the purpose of this study is to evaluate how certain interventions affect the quality and level of reading comprehension of students. The researchers come up with the following conclusions after analyzing the study's findings. The results showed students from the intervention group scored 6 points higher in the Reading Comprehension Test than students from the control group. Adding all of the scores of the respondents from the intervention group, it garnered a mean of 5.9 (from a total score of 118), while the control group got a mean of 5.6 (from a total score of 112). The mean scores between the two groups through the Paired Samples t-test, to evaluate the interventions' effectiveness on students' reading comprehension, showed no significant relationship between the variables. Therefore, though it holds true that the intervention group scored higher than the control group, the 6-point score gap or difference is not statistically significant. In other words, the interventions and specific processes used in the study do not necessarily guarantee effectiveness in aiding Grade 7 students' reading comprehension. The results from the criteria to assess Grade 7 Students' Range of Scores and Level of Reading Comprehension show that most of the respondents fall under the "Poor" and "Very Poor" level, while only 4 made it to "Average/Fair", and 0% got into "Good" and "Excellent". Furthermore, during the checking of answer sheets, researchers found that the highest score was 11 out of 20. This indicates that the respondents really have reading comprehension difficulties, which needs further research on how interventions are carried out. The t-computed value of 0.069 is less than the t-t-critical value of 1.729, as stated in the previous chapter. Therefore, we retain the null hypothesis. A Pearson Correlation of 0.9277 indicates a high degree of correlation because it's higher than  $\pm 50$  or 0.75, but due to score results and quantitative data shown, it does not mean that the interventions were highly effective enough for students' reading comprehension, which may be due to chance, as stated in the previous chapter. The intervention group scored higher than the control group, which indicates an effect. However, the small sample size potentially limits the generalizability of the findings. This, in turn, could explain the lack of a statistically significant difference or effectiveness of the intervention in reading comprehension between the two groups, which is evident in the small score gap. Although the interventions indicated a minor positive shift in scores, the absence of statistical significance and the ongoing basic vocabulary challenges emphasize that short-term, targeted interventions may not be enough to tackle deep, foundational reading comprehension issues in Grade 7 students, especially those in remote areas with existing oral-language weaknesses. The effectiveness of comprehension strategies, including those that employ familiar linguistic methods such as code-switching, is greatly hindered by students' lack of prior knowledge of basic vocabulary. Effective reading comprehension may not fully develop if students continuously face unfamiliar words within the comprehension test questions, no matter how successful the intervention may be at communicating the story content. Although there is a strong positive correlation between the interventions and reading

comprehension based on the paired samples t-test, the statistical analysis underscores that this correlation does not immediately indicate causation. This implies that future studies should go beyond just noting relationships in analyzing the comparison of variables, and instead focus on examining the true and more complex causal factors or moderating variables that genuinely enhance reading comprehension, rather than depending only on exposure to interventions.

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