

Storytelling Materials: An Intervention to Improve Reading Comprehension

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Abstract—The purpose of the study was to determine the effectiveness of the teacher-developed storytelling intervention materials on the reading comprehension level of the intermediate pupils of South Cembo Elementary School for the school year 2023-2024. The study profiled the pupil-respondents in terms of sex, socioeconomic status (SES), and pupils'-parents educational attainment, and PHIL-IRI Group Screening Pre-test and post-test Results based on the comprehension levels: 1. Frustration, 2. Instructional, and 3. Independent. There were three major phases undertaken by the researcher in the development of the intervention materials: 1. Revisiting of the reading strategies and models, 2. Crafting of the teacher-developed storytelling intervention materials, and 3. Assessment of the teacher-developed storytelling intervention materials by eight (8) identified experts and one (1) user to determine the effectiveness using the following criteria: (1) User-friendliness, (2) Accessibility, (3) Flexibility, (4) Suitability, and (5) Creativity. It further aimed to find out the difference between the PHIL-IRI Group Screening pre-test and post-test results of the pupil-respondents when grouped according to sex, socioeconomic status, and parents' educational attainment. The study employed a pre-experimental research design. It involved one group of 73 intermediate pupils purposely selected. The statistical tools used were frequency and percentage, mean and standard deviation, and paired t-test. The result of the study showed that the majority of the pupil-respondents are male, belong to the poor class, which typifies the pupils in the public elementary school in the Philippines, and whose parents have reached high school and college. The majority of the pupils were under the frustration level of comprehension based on the PHIL-IRI group screening pre-test. Eight experts assessed the teacher-developed storytelling intervention materials as effective ($\bar{x}=3.99$, $SD=0.519$) using five major criteria, meaning "highly effective".

Index Terms—Effectiveness, Intervention, Reading Comprehension, Storytelling,

I. Introduction

Reading comprehension has always been a prerequisite and a very crucial skill that needs to be developed in every 21st-century learner. It becomes a gateway to easily learn all subject areas that are relevant to developing the competencies needed in building the right skill set for daily living. Comprehension is not just being able to recognize words read, but the ability to understand them. The pronunciation and recognition of words do not completely meet the goal of reading (Brandon, 2021).

Reading and Writing are not enough for somebody to comprehend, but also the words being said. Comprehension is the key variable that gives sense to every learner to become confident to learn about the world, appreciate its beauty, understand others' culture and face all the challenges in life (Ongpin, 2022). Therefore, it is imperative for an educator to understand explicitly the broad spectrum of learning and application of the language comprehension in real-life. It is in this premise, that the researcher as a classroom teacher, should understand how pupils conceive ideas that would help to find useful strategies and interventions that will make reading comprehension easy for pupils to achieve.

Hence, reading comprehension is a complex activity that includes linguistics, cognitive and metacognitive skills, and inferences (Channa et al, 2015). Reading comprehension levels need to be developed among readers are literal, inferential, and critical thinking.

Extracting meaning such as listing the key facts, opinions, or ideas in various text types is a way of assessing comprehension. These would help readers answer questions and summarize texts. This would give premium to the construction of meaning that they can, later apply to their own personal experiences (McEwan, 2022).

In reading, activation of prior knowledge serves as a scaffold for the readers to fully understand the texts being read. This unlocks language barriers and helps readers contextualize what they are reading (Ferlazo and Sypnieski, 2018).

There are various reading models in the instruction of literacy. A few of these are Top-Down, Bottom-up, and Interactive reading models (Browne, 1998). Skills Model, Psycholinguistic Model, and Socio-Cultural Model (ChalkyPapers, 2022).

Comprehension, which is a must skill needed to be developed in every learner to be ready and can ride along with the demand of the realm of life, should also be aligned as required in the era of the Fourth Industrial Revolution. With the advent of technology, the delivery of education has also been impacted. Therefore, it becomes a necessity for teachers to be equipped with emerging technological skills that can aid in the instruction of literacy. This would result positively in the increase of human capital, which could help in sustainable development and nation-building (Lase 2019).

Today's generation is surrounded by digital technology. Computers, electronic games, video cameras, mobile phones, and digital

music players have been prevalent and indispensable in their routines. They even communicate and read through various multimedia (Tamin et al. 2011).

The Fourth Industrial Revolution has given an advantage in the delivery of education across the globe. The emerging technology helped teachers and learners continue the hampered education and changed the educational paradigm caused by the pandemic (WEF, 2020).

Storytelling has been one of the important strategies in developing reading comprehension, which is the transfer of meaning or the sharing of one's ideas and experiences with others through words and action (Behmer 2005). This is being done traditionally through the reading of texts by the teacher or the students. The advent of technology gave potential to Digital Storytelling as a tool for reading comprehension improvement. The technological advancement has positively contributed not only in the improvement of pupils' reading comprehension but as well as in improving classroom instructions across all learning areas. As education yields toward digitalization, in the researcher's lens, the teaching-learning styles should be adaptive to the demands of the 21st-century learners. The traditional ways of teaching should evolve to respond to the existing needs of the learners, targeting the desired competencies that they have to achieve. In a nutshell, educators shall equip themselves with the technological tools that would improve the teaching-learning process at the same time increasing the digital literacy of the learners.

Careful selection and creation of texts, such as stories, must be taken into consideration. It must be appropriate to the grade level of the reader. Selecting the right digital media, sequencing events, and combining them with the systematic arrangement of information must be observed to produce effective digital storytelling (Ohler, 2008). In addition, as a classroom teacher, getting any available resources from the vast internet pool and then using them in the classroom instruction will not be effective except they are thought to be appropriate at their own grade level and arranged in proper order that would facilitate easy conception of ideas.

Storytelling videos not only make the materials appealing or interesting to readers, but also make the abstract ideas or concepts understandable. In the storytelling videos, it not only emphasizes the voice of the storyteller but as well as eliciting what exactly is happening in the story. They can be able to associate the meaning of words with actions taking place (Robin 2008). In general, the storytelling videos or other video-assisted learning tools activate pupils' prior knowledge as they try to organize and reorganize ideas based on their previous experiences and also relate to the story while associating facts and information that they can visualize with the words being spoken. In the classroom setting, the researcher observed that pupils enjoy watching videos while learning as they try to make sense of the things around them.

In storytelling, the storyteller uses his or her own voice, where the personal element is given value and is linked to other people, places, or interests, giving a personal touch (Norman, 2011). These add more excitement to the readers as they can relate more to the story being told. Being a classroom teacher, it can be noticed that pupils have full respect and participation when they are given tasks. When the teacher reads a story, the pupils feel the story more as they see the teacher in person, they listen to how words are being pronounced, and how those actions and events happen with the help of the teacher's emotion and diction.

Reading comprehension, as a built-in part of learning across the subject areas, is also rooted in the way that a learner learns. Therefore, a variety of learning paradigms must be looked into as they serve as a guide to understanding how an individual learns. In digital storytelling, constructivist foci are the construction, organization, and arrangement of educational content that help in information management, as well as remembering and retrieving information (Anderson, 2018). It is on this premise that the researcher and classroom teacher want to look into the development of these kinds of reading materials that could improve the reading comprehension of the pupils. The classroom reading assessments of the pupils served as the motivation and the baseline for the researcher to explore strategies and interventions that would solve the existing problem in reading comprehension.

Therefore, to achieve the goals of reading, understanding the learning paradigms, and observing all the necessary ways in creating storytelling materials are pivotal in the improvement of pupils' reading comprehension.

II. Literature Review

This chapter presents a review of related literature and studies organized according to the following topics: 1) Reading Comprehension and Its Relationship to Other Variables, 2) Reading Techniques and Strategies, 3) Technology and the Development of Reading Materials, 4) Reading Assessments, and 5) Theories in Reading Comprehension

1. Reading Comprehension

The development of reading ability, compared to other language skills, is the fundamental competence of the foreign language (Li, 2021a). Reading is an active, dynamic, and complex cognitive process that involves noting details, association of information with personal experience, and integration of information with the reader's background knowledge (Lin et al., 2020).

Literacy is a tool necessary for the survival of society in a competitive world that is knowledge-driven. A literate individual must be able to read various forms of knowledge representation and generate and disseminate ideas to others (Orencia, 2018). It is therefore a necessity to look deeply into the quality of pupils' reading comprehension. This includes the way they comprehend as well as the quality of comprehension being gained from reading that contributes to the success in their education (Hittleman, 1988; Luz, 2007).

Reading is a dynamic process that is both an active and receptive process in which the reader finds a connection of ideas in the text (McKee, 2012). Reading requires the utilization of many mental processes as information is collected, processed, and analyzed. Also, reading is a source of enjoyment for individuals (Li and Wilhelm, 2008).

Reading comprehension can be drawn from various underlying processes such as oral language comprehension, word identification accuracy, and naming speed (Wolf and Katzir-Cohen, 2001). Oral reading fluency may not suffice for reading comprehension, as some words unfamiliar to pupils need to be unlocked before they can easily read them with proper phrasing and intonation (Swearing, 2006).

Reading Comprehension Relative to Sex

Teaching and Language are important factors that contribute to the cultural orientation and behavior of pupils. The way that the teacher delivers instruction and the learning environment affect pupils' performance and characteristics. One of the important factors that contributes to a gap in reading is sex. Pupil's characteristics and ability between male and female may result in different reading performance (Anantaza, et. al, 2019).

In the study conducted (Espinoza & Strasser 2020), females outperformed males when it comes to reading comprehension achievement. With this result of the experiment, it can be attributed to two factors, such as a lower value of reading and self-concept, considering their motivation. This is proven to be true, whereas according to the expectancy-value theory, individuals who exhibit higher value and expectancy with regard to a given subject are more likely to get involved in those activities (Wigfield and Eccles 2000).

According to Annantasa (2016), in the study about "Gender Differences in Reading Comprehension Achievement", males' underachievement could be explained by their lack of interest and motivation. It can be found that twenty-five percent (25%) of boys' participants and thirty-three percent (33%) of girls participants got high scores in reading comprehension. It was clearly articulated that most females love reading activities, especially during leisure time.

In the study conducted about reading comprehension, it had been proven that there is a significant difference between sexes. It is concluded that females outperform males (Minoza and Montero 2019). However, this study specifically drew conclusions in terms of Oral Reading.

According to Asgarabadi (2015), learners' sex does not have a significant difference after an experiment was conducted focusing on two macro-genres, which are Descriptive and Narrative text types. It can be found that for descriptive text, $t=-1.52$, $p = 0.135$, and narrative text, $t=0.053$, $p = 0.95$, in terms of reading comprehension, it turned out to be that both genders have equal reading comprehension ability, as both groups compared did not reach statistical significance with an alpha level set at 0.05. In the gender similarities hypothesis, Hyde (2005) holds that males and females are alike on most (but not all) psychological variables, including the learner's reading comprehension. Extensive evidence from meta-analyses of research studies on gender differences supports the gender similarities hypothesis (Hyde, 2005).

Gender differences in reading comprehension ability were observed in the study of Mirafuentes (2017), where group achievement varies at the Literal and Evaluative level but not at the Inferential and Critical Level. These variances could be attributed to learners' reading attitudes and individual practices.

Reading Comprehension Relative to Parents' Educational Attainment

The influence of parents' educational attainment is a common variable in the analyses of pupils' reading comprehension. However, there are studies with similar factors that reveal that its influence on reading comprehension may vary at a wide range.

In the study conducted by Cano (2018), the parents' educational attainment is a predictor of pupils' reading performance. It was found that a prediction value of around 10% of the variability of pupils' reading performance, similar to 14% to 33% of the variance in pupils' academic performance (Freeman and Viarengo, 2014). It was also claimed that a high level of education in parents increases the chances of their children succeeding in school (Davis-Kean, 2005).

Parents' educational attainment is also positively correlated to parental participation and support, and the family's socio-economic status. The help of the parents in the homework increases the pupils' expectations, which improves their academic performance (School & Parsons, 2002).

Socio-economic status, which is also related to parent' educational attainment, showed differences between groups when it comes to their reading comprehension. It was revealed that those who belong to average to high SES have better opportunities towards reading proficiency (Minoza and Montero, 2019).

Focusing on Socioeconomic Status (Dolean, et.al, 2019, it was an evident variable that affects the reading comprehension ability of learners. Multiple factors were found to have direct or indirect effects on learners to develop good reading comprehension. Parents' education level was a consistent and significant contributor to the SES construct in all models, and letter knowledge was clearly the strongest mediator of the four cognitive and linguistic variables. Notably, other environmental factors than home literacy could also play an important role. One such factor is poor nutrition in low SES families (Darmon & Drewnowski, 2015; Wang & Beydoun, 2007). Since poor nutrition is associated with poor neural and cognitive development (e.g., Rosales, Reznick & Zeisel,

2009), this might have a direct effect on the cognitive and linguistic mediators and, thus, an indirect effect on reading skills.

This strong relationship between parents' educational attainment and pupils' academic performance is mainly because those parents with a high level of education can provide a more conducive environment for their children (Bouchard & McGue, 1981).

These variables, namely sex and parents' educational attainment, have been suggested to have or not have significant differences based on the prior studies. There are some underlying characteristics that females manifest that are different from males, which cause differences in their reading comprehension. Some studies state that females are more exposed to reading, thus outperforming males due to this nature. The sexes may also vary in their reading skills or reading comprehension questions and types of texts that they read, depending on the motivation. Furthermore, parents' educational attainment is said to be a determinant of better reading comprehension, as this is correlated with socioeconomic status. The higher the educational attainment of the parents, the more they can provide a better environment, sufficient or even more when it comes to the basic and educational needs of their children. Thus, the researcher wants to determine if these variables create variation when it comes to the results of this present study. This study will also look into possible interventions that will improve the reading comprehension of the pupils for both sexes and regardless of the parents' educational attainment.

2. Reading Techniques and Strategies

Reading comprehension is considered to be a complex activity; it involves two processes, which are referred to as High and Low Levels (Grabe and Stoller, 2002). To be able to comprehend what is read, a person needs to be familiar with text structure and topic, aware of reading strategies, and how to use these strategies in the processing of material and word recognition" (Pang, 2008).

"No one process defines reading comprehension by itself, but together they provide a fairly accurate account of the processes required for fluent reading." (Grabe and Stoller, 2002:17) In a similar earlier work, Janzen and Stoller (1998) identified ten processes or strategies of reading comprehension as being the following: "identifying a purpose for reading, previewing, predicting, asking questions, checking predictions or finding and answer to the questions, connecting the text to prior knowledge, summarizing, connecting one part of the text to another, and recognizing text structure".

Guide O Rama

Reading Guide O Rama strategy is a reading strategy in the Form of written "prompts" to pupils as a good way to read and think about a given reading passage. It serves as a reading road map to help pupils understand content reading. It helps pupils process the major points and concepts of a passage while reading (Sari, 2020). It is in the form of a series of questions or instructions that lead pupils through reading the passages and note important details. The questions are aligned in the passages.

In the study conducted by Yari (2020), the result showed that the pupils' reading improved from 26.7% to 60% and eventually to 86.7% in their post-test I and post-test II, respectively.

Interactive Reading Technique

It is the use of animated instructional video lessons to improve the reading fluency of the pupils. It is a series of episodes entitled Word World, which it includes talking animals whose body is made up of the spelling of their names. This technique was based on the theory of Bandura and Vygotsky, the social learning theory, which claims that human beings learn much through the cognitive processes of observation and imitation. This strategy involves dialogic reading and explicit print-referencing using the printed materials while utilizing the educational videos played on the television.

The use of this technique in improving the reading fluency of the pupils was effective, with the results at the mean of 3.63 and 5.75, pre-test and post-test, respectively (Godfrey, 2014).

Read Naturally

Read Naturally is a repeated readings intervention program that allows pupils to enhance their fluency by reading and rereading passages on their independent reading level and at their own pace. This is implemented with the help of the teacher who orally reads a passage with proper fluency and prosody together with the pupils. Then the pupil practices rereading the story until they confidently read the passages based on their self-determined rate. When the pupils mastered the reading of passages, they proceeded to answer the comprehension questions or retell the story. In a nutshell, the read-naturally strategy incorporates teacher modeling, repeated readings, and progress monitoring to assess pupils' reading performance (Davidson, 2006).

Self-Questioning Reading Strategy

Self-questioning reading strategy is the use of a set of self-questions about the texts or passages read by pupils. The self-questioning reading strategy consists of questions intended for noting details, both for implicit and explicit comprehension. This strategy helps pupils create their own motivation for reading.

In the study of Bajer (2005), prior to a qualitative reading inventory assessment and after the implementation of the strategy, twelve of the fourteen subjects who utilized the self-questioning reading strategy showed improvements from the pretest to the posttest.

3. Development of Reading Materials

The integration of the technology, e.g., smartphones, tablets, computers, and online platforms in learning a foreign language has been up to date found useful (Shadieff, et al., 2020).

The survival of societies in a knowledge-based global economy depends on literate citizens. Literacy today implies being able to read multiple forms of knowledge representations and generate and disseminate knowledge to others through technology (International Literacy Association, n.d.).

Reading comprehension of written texts can be achieved with the help of animated films, as these increase the learners' concepts about print, story structure, and other elements of the text (Rog 2001). Moreover, the use of animated materials that become a source of motivation for readers would add to the chance of them becoming lifelong readers, increasing the chances that reading life doesn't end with high school graduation (Kimmel and Segal, 1983). Atwell (1987) mentioned that the students are affected by using animation films and that these activities motivate them to look for the books being shared, locate other books by the same author, and respond actively and personally to the text.

According to Danan (2004), "audiovisual materials enhanced with captions or subtitles may function as a powerful educational tool in many ways. For example, 1) facilitate language learning by helping students visualize what they hear and 2) increase language comprehension and lead to additional cognitive benefits, such as greater depth of processing".

Lonergan (1995) says that the learners will be eager to watch, even if their comprehension is limited. Therefore, even if a learner struggles to comprehend the text, this will not be a reason for them to stop watching the video. With the aid of these storytelling materials in the reading skills of learners, they can get the idea by synchronizing the text they read and watched (Pelani, 2016).

Strategy instruction shows effectiveness in reading comprehension. Although students have background knowledge, they still experience difficulty in making inferences from the texts being read (Barnes et al., 1996), thus, integrating technology to hook pupils' attention towards reading is considered.

The narrative task is a well-established task type in English as a Foreign Language (EFL) or English as a Second Language (ESL) literature that is frequently researched. Such a task type usually involves the creation of a story in response to a stimulus: a picture strip or a short film, for example. As in most cases, the stimuli given are purely visual and their verbal representations depend on the storyteller to a great extent, though it is also used in the written mode. This task type, further, seems ideal as far as the manifestation of creativity is concerned (Albert & Kormos, 2004).

For a student to learn independently in each text, the reader must utilize strategies. However, we lack an idea of how to use it effectively. As readers progress, more specialized strategies are required for engaging with text. All subject areas require different types of text analysis skills (Shanahan & Shanahan, 2008).

In the study conducted on Iranian Intermediate EFL Learners (Mohammadian, et al., 2018), they found that learners had significant development in their reading comprehension with the help of video materials. The pre-test and post-test mean values of 18.73 and 19.80 show development in the participants' reading proficiency. The estimated p-value is more than 0.05 ($0.19 > 0.05$).

Furthermore, in the experimental study that was conducted, watching videos as a pre-reading technique was applied to activate students' background knowledge, had helped in improving students' reading comprehension (Saeidi & Ahmadi 2016).

Making use of video clips helps readers to build background knowledge that enables them to understand texts through the visual images being presented. Visualization is also considered to be a prerequisite for a reader to improve reading comprehension skills (Draper, 2012).

4. Reading Assessments

Reading assessment is a powerful tool that helps researchers, administrators, and teachers to be informed of the pupils' performance and improve instruction.

Southeast Asia Primary Learning Metrics (SEA-PLM) 2019

The Southeast Asia Primary Learning Metrics (SEA-PLM) is a large-scale student learning assessment program designed by and for countries in the Southeast Asian Region to assess Grade 5 pupils' learning outcomes. It has been developed after the analysis of the curricula of different countries in the Southeast Asian region. It primarily measures learning outcomes in the domains of reading, writing, mathematics, and global citizenship (GC). The assessment was administered using a paper-and-pencil test.

The results reveal that the majority of the Grade 5 pupils (63%) can read a range of everyday texts fluently and begin to engage with their meaning; however, only 10% were able to meet the reading proficiency level at the end of primary education (DepEd, n.d.). The results also reveal that Filipino girls outperformed boys in reading literacy.

Program for International Student Assessment (PISA) 2018

This assessment is an internationally recognized assessment that measures 15-year-old students' reading, mathematics and science literacy every three years. This measures general or cross-curricular competencies such as problem-solving. The program intends

to measure the functional skills that learners have gained. The result of the 2018 PISA which was participated by the Philippines participated, we were ranked second-to-last out of 79 participating countries and economies. Based on the results, both sexes got significantly low scores.

Philippine Informal Reading Inventory 2018

This reading assessment is anchored in the “Every Child a Reader Program” of DepEd that aims to make every Filipino child a reader and writer at their own grade level. It is a classroom-based assessment tool developed by experts to measure and describe the reading ability of the learner. It is an annually conducted assessment of the schools nationwide. It consists of the PHIL-IRI group screening pre-test and post-test to determine the reading level of the pupil and graded passages.

2013 National Early Grade Reading Assessment (EGRA)

This reading assessment is administered to determine the extent of mother-tongue-based multilingual education (MTB-MLE) implementation at scale in the Philippines, in the pupils’ reading and writing skills at the end of Grade 3. All participating pupils are given one English assessment and one Filipino assessment in a one-on-one interview. The assessment is composed of several short, timed or time-limited tasks that measure building blocks of reading, such as listening comprehension, letter-sound knowledge, decoding, nonword reading, passage reading, and comprehension (DepEd, 2019).

5. Theories in Reading Comprehension

According to Vygotsky (1978), the best learning experience, which is considered to be a social process, is to provide pupils with an environment where they can freely think and talk aloud among their classmates and teachers about their thoughts and inquiries (Tankersley, 2005, p. 18). However, to develop a good reader, decoding skills and grammatical knowledge of the text are insufficient. The schema theory suggests that to improve reading comprehension, a reader must be able to activate knowledge of the reading topic and knowledge of the way language works.

Piaget’s reading theory (Friedman, 2019), a child’s age between 7 and 12 years old falls under the concrete operations stage of cognitive development. This is when a child develops the capacity to gain logical and abstract ideas, which is necessary to comprehend ideas and gain an understanding of the importance of reading. Reading aloud to children is one of the effective strategies in enhancing comprehension skills. At this stage, a child must be able to read and conceive what it means. Piaget’s theory also stresses assimilation of materials in the learner’s long-term memory.

Bottom-Up View

This traditional reading theory suggests that reading comprehension can be achieved through drills, repetition, and error correction. Novice readers are taught using a hierarchical pattern of instruction that starts from the phonics, which requires reader to match letters and sounds, then decode a text word by word and link it to phrases, finally to sentences (Gray and Rogers, 1987). This theory of behaviorism became the basis of the audio-lingual method to learn a second language. This focuses on the response of the reader to the stimuli using the building blocks of sounds and words and does not give priority on the reader’s background knowledge as it relies fully on the literal comprehension based on the formal features of the language, such as words and structure.

The Cognitive View (Top-Down Processing)

This theory pertains to the power of the mind in learning. This opens the idea of how humans acquired their first language. This also explains how internal representations of the foreign language develop within the learner’s mind (Omaggio, 1993:57). This emphasizes the importance of meaningful learning over rote learning. It claims that meaningful learning, which is the power of the mind to connect background knowledge into the relevant texts that can be added to own’s cognitive structure, becomes permanent. On the other hand, rote learning, which focuses on memorization of a list of words or rules, is temporary and subject to loss.

In this new cognitive approach, reading is a dialogue between the reader and the text, which brings out meaning-making of the texts read by integrating background knowledge (Tierney and Pearson, 1994).

Schema Theory

This theory is similar to the cognitive view as it acknowledges the usefulness of background knowledge that interacts with the reading task and illustrates the reader’s comprehension by putting together existing knowledge and previous experiences. Thus, the more schemata that get in, the more likely the reader is to easily comprehend texts.

According to Smith (1994:14), schemes are an extensive representation of more general patterns or habitually occurring experiences. Schema theory suggests that past experiences lead to the formation of a cognitive framework that helps a reader make sense of new experiences.

Anderson and Pearson (1988:38) state that the interaction between old and new information leads to comprehension. These schemes will reinforce the reader to make space for new information or modify existing mental space to accommodate newly gained ideas.

Piaget’s Cognitive Development Theory and Intentional Learning

Play is an important way of learning for a child to develop socially, emotionally, and cognitively. As the child interacts with the

environment through play, the child starts to form his/her reality. The child's exposure to the environment leads to the gathering of various knowledge around him/her and gains personal experience. Similar to language learning, the symbols of language and images tend to be illogical and unsystematic in their own lenses, and as a result, the child is forced to organize and reorganize their thought processes.

III. Methodology

This chapter describes the processes starting with the research design to be used, research locale, respondents of the study, population and sampling technique, the development of research instruments, the type of data gathering procedure, and data treatment.

Research Design

This study will employ the pre-experimental research design, a one-group pretest-posttest design. It focuses on determining the effectiveness of the teacher-developed storytelling materials in the comprehension level of intermediate pupils, which will serve as an intervention between the pre-test and post-test.

O1 X O2

O1 refers to the pre-test results of the PHIL-IRI Group Screening Test. X refers to the interactive storytelling materials, otherwise known as the intervention. O2 refers to the post-test results of the PHIL-IRI Group Screening Test.

According to Shadish, Cook, and Campbell (2002), an experiment is a study in which an intervention is implemented to find out its effect (p. 12). In relation to the current study being conducted, the use of teacher-developed interactive storytelling materials as an intervention that seeks to improve the reading comprehension performance of the pupils will be introduced. This will be conducted for intermediate pupils of South Cembo Elementary School in the Division of Makati City for School Year 2022-2023.

Locale of the Study

The researcher is currently teaching in the same school where the problem of reading comprehension also exists. It is for this purpose that the research will be conducted among the intermediate pupils of South Cembo Elementary School, District V, Division of City Schools, Makati City, S.Y. 2023 – 2024, located in Barangay South Cembo, Makati City.

South Cembo Elementary School, founded in 1974, is located on Gen. Luna Street, categorized as a small school in the schools division of Makati. It has thirty-six (36) permanent teachers, three (3) master teachers, and one admin employee. It has a pupil population of 989.

Unit of the Study

The researcher used the purposive sampling method in choosing the respondents of the study. There were 447 pupils enrolled in the intermediate level for the school year 2023-2024 at South Cembo Elementary School, District of Taguig. The study involved 73 pupils from Grades 4,5, and 6. They were selected based on the PHIL-IRI group screening pretest results, and those who scored below 14 out of 20. Employing the statistical tools helped to analyze the scores of the pupils.

GRADE LEVEL	ENROLMENT			NO. OF PUPILS WHO DID NOT PASS THE GST		
	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL
4	72	77	149	12	5	17
5	88	62	150	16	15	31
6	87	61	148	21	4	25
TOTAL	247	200	447	49	24	73

Data Gathering Instrument

In order to obtain all the necessary information and successfully implement the experiment, this study will subscribe to (3) major instruments, namely as 1. questionnaires for the experts, 2. the adopted PHIL-IRI Group screening pre-test and post-test, and 3. the teacher-developed storytelling materials that will be administered as an intervention.

PHIL-IRI Group Screening Test

The PHIL-IRI Group screening pre-test aimed to determine the current reading comprehension level of the pupils. This serves as a baseline for the researcher towards the implementation of the proposed intervention. On the other hand, the PHIL-IRI Group screening post-test aims to determine the effectiveness of the teacher-developed storytelling materials on the improvement of the pupils' reading comprehension.

The adopted PHIL-IRI Group Screening Test of DepEd, a twenty-item (20) Pre-test that is divided into three (3) comprehension

levels. This consists 4-stories with five follow-up questions for each story. Six items (6) focusing on Literal Levels, seven items (7) on Inferential, and seven items (7) on Critical Levels were administered to assess the learner's needs. After the pre-test, the learners will undergo an intervention utilizing the teacher-developed storytelling material to be implemented by schedule to accommodate pupils in the school computer laboratory and following the IATF health guidelines. The stories include follow-up questions to help students with knowledge retention. Finally, an adopted PHIL-IRI Post-test will be administered to pupils to evaluate the effectiveness of the teacher-developed storytelling materials in improving their reading comprehension.

Development of Interactive Storytelling Materials

The development of teacher-developed interactive storytelling materials required important considerations of the schema reading comprehension theory, which states that activating prior knowledge, information, and personal experiences helps readers improve reading comprehension as they relate these ideas to the text they read (Anderson & Barlett). The researcher considered the results of the prior studies related to the utilization of interactive storytelling materials. Literacy trend implies being able to read multiple forms of knowledge representations and generate and disseminate knowledge to others through technology (International Literacy Association, n.d.). Audiovisual materials enhanced with captions or subtitles may function as a powerful educational tool by facilitating language learning through visualization of what pupils hear and increase language comprehension leading to additional cognitive benefits such as greater depth of processing.

The researcher made use of the google slide application powered by Google website, as a platform to create the storytelling materials. It consists of a total of 82 slides. Incorporated in the slides are the 12 reading passages, vocabulary enrichment, comprehension questions, and titles of the passages designated for every grade level. To make it interactive for pupils, the researcher included clickable buttons that are linked to the pages in the entire Google Slides. The necessary images or pictures related to every passage were also attached to every slide, recorded storytelling video materials, and audio buttons.

The researcher utilized Canva.com, which is an online and free application that can be used in various digital or printed materials, in recording the story passages. Similarly, vocaroo.com was used by the researcher in recording the clickable audio materials, and google.com in searching for the relevant images in every slide.

The teacher-developed storytelling materials will be subjected to content and face validation by three experts in the field of Education, composed of one (1) Education Program Supervisor in English, two (2) Principals, and two (2) seasoned Teachers who have been teaching the English subject for 10 years.

Survey Questionnaires for the Experts

The survey questionnaires aimed to test the validity of the teacher-developed storytelling materials.

The researcher-constructed survey questionnaires are divided into six (6) criteria, namely as follows: 1. Accessibility, 2. Creativity, 3. Flexibility, 4. Suitability, 5. User-friendly. The accessibility aimed to assess whether the storytelling materials can be easily used or obtained. The creativity aimed to assess whether the materials have certain characteristics that have multiple integration of multimedia elements appropriate for the users and their quality. The flexibility aimed to assess the storytelling materials' usefulness at any place, time, and rate. The suitability aimed to assess whether the storytelling materials are appropriately developed considering the age, grade level, reading standards set by DepEd, and the competencies in the K-12 Curriculum. Lastly, the User-friendly criterion aims to assess whether the reading materials can be navigated easily at the pupils' own pace and time.

The survey questionnaires were composed of a total of 60 items. In every criterion, there are 10-item indicators that are juggled by the researcher. There are seven (7) positive item indicators and three (3) negative item indicators. The validators of the instrument tick one box per item indicator to reflect their evaluation as to what extent the interactive storytelling materials are effective in every criterion. The following legends were reflected in the survey questionnaires: Strongly Agree (SA) – 5, Agree (A) – 4, Neutral (N) – 3, Disagree (D) – 2, and Strongly Disagree (SD) – 1.

PHIL-IRI Group Screening Test

The PHIL-IRI Group screening pre-test aimed to determine the current reading comprehension level of the pupils. This served as a baseline for the researcher toward the implementation of the proposed intervention. On the other hand, the PHIL-IRI Group screening post-test aimed to determine the effectiveness of the teacher-developed storytelling materials on the improvement of the pupils' reading comprehension.

The adopted PHIL-IRI Group Screening Test of DepEd, a twenty-item (20)-Pre-test is divided into three (3) comprehension levels. This consists of four (4) stories with five follow-up questions for each story. Six items (6) focusing on Literal Levels, seven items (7) on Inferential, and Seven items (7) on Critical Levels were administered to assess the learner's needs. After the pre-test, the learners underwent an intervention utilizing the teacher-developed storytelling material that was implemented by schedule to accommodate pupils in the school computer laboratory and following the "No Disruption Policy" of DepEd. The stories included follow-up questions to help students with knowledge retention. Finally, an adopted PHIL-IRI Post-test was administered to pupils to evaluate the effectiveness of the teacher-developed storytelling materials in improving their reading comprehension.

Development of Interactive Storytelling Materials

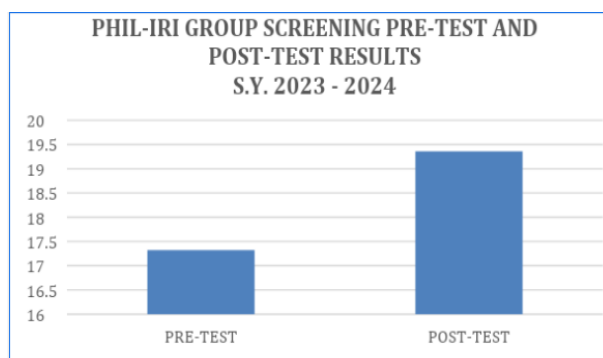
The development of teacher-developed interactive storytelling materials required important considerations of the schema reading comprehension theory, which states that activating prior knowledge, information, and personal experiences helps readers improve reading comprehension as they relate these ideas to the text they read (Anderson & Barlett, n.d.). The researcher considered the results of the prior studies related to the utilization of intervention storytelling materials. Literacy trend implies being able to read multiple forms of knowledge representations and generate and disseminate knowledge to others through technology (International Literacy Association, n.d.). Audiovisual materials enhanced with captions or subtitles may function as a powerful educational tool by facilitating language learning through the visualization of what pupils hear and increasing language comprehension, leading to additional cognitive benefits such as greater depth of processing.

The researcher made use of the Google Slides application, powered by the Google website, as a platform to create storytelling materials. It consists of a total of 82 slides. Incorporated in the slides were the 12 reading passages, vocabulary enrichment, comprehension questions, and titles of the passages designated for every grade level. To make it interactive, the researcher included clickable buttons that were linked to the pages in the entire Google Slides. The necessary images or pictures related to every passage were also attached to every slide, recorded storytelling video materials, and audio buttons.

The researcher utilized Canva.com, which is an online and free application that can be used in various digital or printed materials, in recording the story passages. Similarly, vocaroo.com was used by the researcher in recording the clickable audio materials, and google.com in searching for the relevant images in every slide.

The teacher-developed storytelling materials were subjected for assessment by 8 identified experts in the field of Education, composed of one (1) Education Program Supervisor in English, one (1) Public School District Supervisor, two (2) English Language professors, both with Doctorate Degree, two (2) school principals where one has Master's Degree in Language Education and both with Doctorate units, one (1) Head Teacher with Master's Degree in Language Education, (1) Master Teachers who have been teaching the English subject for 10 years and one (1) user of the reading materials.

Pilot Test Results



The graph shows the PHIL-IRI Group Screening pre-test and post-test results of the 25 pupil-respondents apart from the target pupil-respondents for the pilot test in the intermediate level. The data posits that there is an improvement in the overall score of the pupils, given the average in the pre-test (17.32) as compared to the post-test (19.36).

Data Collection Procedures

The researcher presented a letter of approval to the school principal and the school's division superintendent of Taguig to conduct the study. The pre-test was administered on August 14, 2023, and the Post-test was administered to the pupils in January 2024, through a paper-and-pencil test. The storytelling intervention materials were utilized for the experiment during the second grading period of the school year 2023-2024.

The experiment took 10-30 minutes to complete one passage together with the comprehension questions. Grade four (4) and five (5) levels made use of the narrative texts; on the other hand, grade six (6) pupils used expository texts. A post-test was administered to determine the effectiveness of the materials. The researcher used the school's Computer Laboratory for the implementation of the intervention.

The researcher collected the data, which were tallied and drew out frequencies and the Mean of the test results. These results were subjected to appropriate statistical tools for data analysis. The researcher interpreted the results of the study.

IV. Results

This chapter presents the analysis and interpretation of data gathered in determining the effectiveness of teacher-developed storytelling materials on the reading comprehension of the intermediate pupils of South Cembo Elementary School for School Year 2023-2024.

Demographic Profile of Pupil-Respondents

Sex

Table 1 Respondents' Profile in terms of Sex

Sex	Frequency	Percent
Male	49	67
Female	24	33
Total	73	100

As presented in the table, the majority or 67% of the pupil-respondents are male, and the rest 33% are female. This shows that the respondents of the experiment were mostly males.

Socioeconomic Status

Table 2 Respondents' Profile in terms of Socioeconomic Status

Socioeconomic Status	Frequency	Percent
Poor	43	59
Low Income	21	29
Low Middle Class	6	8
Middle Class	3	4
Total	73	100

The basis for determining the socioeconomic status of the pupils was drawn from the Philippine Institute for Development Studies (PIDS, 2023). The table shows that in terms of socioeconomic status, the majority, 43 or 59% of the pupils are poor, followed by those in the low-income bracket (21 or 29%).

Socioeconomic status in the country plays an important role in the success of every Filipino. However, 22.4% or 25.24 million Filipinos have a per capita income that is not sufficient to meet their basic food and non-food needs. Moreover, 8.7% or about 9.97 million Filipinos could not buy even the basic food needs (PSA, 2023; PIDS).

Profile in terms of Level of Educational Attainment

Table 3 Parents' Profile in terms of Level of Educational Attainment

Level of Educational Attainment	Father		Mother	
	Frequency	Percent	Frequency	Percent
Elementary	5	7	4	5
High School	33	45	45	62
College	29	40	23	32
Post Graduate	3	4	1	1
No Formal Schooling	3	4	0	0
Total	73	100	73	100

Data reveals in Table 3 that of the 73 parents, the majority of the parents, both father (33 or 45%) and mother (45 or 62%) have reached high school level. Coming second are those parents who have reached college level, as evidenced by 29 or 40% of the fathers and 23 or 32% of the mothers. However, it can be gleaned from the table that the mothers somehow attended formal schooling at different levels compared to the fathers, where 3 or 4% have not attended schooling. Parents' educational attainment is a predictor of pupils' reading performance (Cano et. al, 2019).

In addition, there are pupils classified under an instructional level. It is the level at which a pupil makes the most progress. The pupil scores 90 – 96% in word reading or 13-16 points (59 to 79%) in comprehension. It could be that the pupils belonging to this category have parents who have reached college education, or the pupils are highly motivated in terms of their academic work. Or could it be that these pupils have developed good study habits?

In the study conducted by Esteban et al. (2020), parents' academic qualifications, profession, and educational role are the most influential aspects of the predictability in the variability of their children's reading skills, and according to Syafitri N. (2019), study habits and reading comprehension skills are proportionally related to each other.

PHIL-IRI Group Screening Pre-Test Results of the Pupil-respondents

Table 4PHIL-IRI Group Screening Pre-Test Results of the Pupil-respondents

Reading Comprehensio n Level	Frequency	Percent
Frustration	47	64
Instructional	26	36
Independent	0	0
Total	73	100

Table 4 shows that 47 or 64% of the intermediate pupils congregated at the frustration level, followed by 26 or 36% at the instructional level. No one reached the independent level. Further, the data reveals that most of the pupil-respondents are at the frustration level.

The frustration level is considered the lowest reading level. The pupil commits errors in reading, such as reversal, repetition, substitution, insertion, mispronunciation, and inability to interpret punctuation. The pupil scores 89% & below in word recognition or scores 0-12 points or 58% and below in comprehension. From the researcher's lens, several factors may contribute to pupils' poor reading comprehension, such as inadequacy or non-availability of reading materials, poor study habits, lack of motivation, home monitoring, and parental supervision. The combination of these factors may be attributed to pupils' socioeconomic status and parents' educational attainment.

According to Tuell (2021), pupils living in low socioeconomic status are faced with challenges that are beyond their control and create a chain of obstacles in terms of their educational needs.

Furthermore, learners with high motivation who use three reading strategy categories (pre-, while, and post-reading strategies) more frequently than those with moderate reading motivation, result to have a better reading comprehension (Kassem, Hassan & Alqahtani, Demah, 2023).

Intervention Materials Developed to Improve the Pupils' Reading Comprehension Level

The researcher undertook three (3) major phases in developing the intervention materials to improve the pupils' reading comprehension level as follows:

Phase I

The first phase that the researcher did was to revisit various reading strategies and models that may improve the reading comprehension of the pupils, such as Guided O'Rama, Interactive Reading Techniques, Read Naturally, and Reading Aloud. In addition, the researcher has been utilizing the reading intervention materials for the grade five (5) pupils in the classroom setting for one year.

Reading Guide O Rama strategy is a reading strategy in the form of written "prompts" to pupils as a good way to read and think about a given reading passage. It serves as a reading road map to help pupils understand content reading. It helps pupils process the major points and concepts of a passage while reading (Sari, 2020). This gave idea to the researcher to incorporate similar parts of the strategy into the reading materials. Instead of using written prompts, the reading materials are presented through video and instructions using clickable buttons, and the questions are presented at the end of every passage or video.

Another way to improve reading comprehension is to employ interactive reading techniques. It is a combination of approaches and theories in reading, such as reading aloud, repeated reading, shared reading, and guided reading, top-down theory, which emphasizes comprehension and meaning making, and the bottom-up theory, which focuses on decoding of words (Kulo, et. al, 2019). This strategy helped the researcher in designing and integrating audio-video functions, both for vocabulary words and passages.

The essence of employing reading naturally is to build a solid foundation in the fundamentals of reading. It starts with activating background knowledge, language structure, verbal reasoning, and literacy knowledge. This involves phonological awareness, decoding, and sight recognition (Whaley, 2021). Hence, the researcher ensures that the audio and video functions work perfectly in a sense that pupils can repeat and copy how unfamiliar words to them are pronounced.

Furthermore, Interactive reading aloud is a process that contains dialogic reading because it is considered a read-aloud strategy. Dialogic reading is the method of reading illustrated books to children by an adult. However, this reading greatly differs from ordinary readings. In traditional reading, an adult reads, and a child listens, but in dialogic reading, the child learns to be a storyteller (Ceyhan S. and Yildiz M. 2020 as cited in Whitehurst et al., 1994). The text talk strategy is a read-aloud strategy aiming to foster vocabulary growth (Ceyhan S. and Yildiz M. 2020 as cited in Beck & McKeown, 2001). With the provision of silent reading passages and storytelling video materials, similarly, the pupils can read on their own, and they can also listen to the story being told through the video materials.

Phase II

The second phase dealt with the crafting of the reading intervention materials with the use of Google Slides on the Google website. The platform was selected by the researcher for the following reasons:

1. Google Slides are free and available.
2. The researcher is more adept at using the Google Slides by Google website, attributed to the in-service training attended during the pandemic.
3. The pupils are familiar with the Google Slides of Google websites during the pandemic, wherein online learning took place.

Incorporated in the slides are the 12 reading passages, vocabulary enrichment, comprehension questions, and titles of the passages designated for every grade level. To make it interesting to the pupils, the researcher included clickable buttons that are linked to the pages in the entire Google Slides. The necessary images or pictures related to every passage were also attached to every slide, recorded storytelling video materials, and audio buttons. The materials were used during the second grading period.

The researcher utilized Canva.com in video-making for the following reasons:

1. It is easy to use as the researcher has attended seminars about the use of the application.
2. It has a free version and available pre-designed templates that are also editable.
3. Visually appealing content can be created through canva.com. Hence, the researcher used the application in recording the story passages.

Similarly, vocaroo.com was used by the researcher in recording the clickable audio materials, and google.com in searching for the relevant images in every slide because it is free, available, and can record audio instantly with just one click.

Phase III

The third phase was devoted to the assessment of the teacher-developed reading materials by the 8 identified experts. They are composed of one (1) Education Program Supervisor in English, one (1) Public School District Supervisor, two (2) English Language professors, both with Doctorate Degree, two (2) school principals where one has Master's Degree in Language Education and both with Doctorate units, one (1) Head Teacher with Master's Degree in Language Education, (1) Master Teachers who have been teaching the English subject for 10 years and one (1) user of the reading materials. The materials were assessed using the following criteria: 1) user-friendliness, 2) accessibility, 3) flexibility, 4) suitability, and 5) creativity. In general, the experts assessed the reading materials in terms of their effectiveness as "to an extent," generating a mean ($\bar{X}$) of 3.99 with a standard deviation (SD) of 0.519. This means that the reading intervention materials developed by the researcher are effective "to an extent". The experts are adept at the use of technology and are in the field of education.

Extent of Effectiveness of the Materials Developed as Assessed by Experts

User-Friendly

Table 5 Extent of Effectiveness of the Materials Developed as Assessed by Experts in terms of being User-friendly

No.	Indicators	Mean	SD	Verbal Interpretation
1	The instructions are clearly stated in every slide	4.56	0.527	Very High
2	The materials are easy to navigate.	4.56	0.527	Very High
3	The embedded buttons in every slide work quickly and perfectly.	4.44	0.726	High
4	The texts are readable.	4.67	0.500	Very High
5	The overall storytelling materials are visually appealing.	4.44	0.726	High
6	The reading materials contain a lot of unnecessary information.	2.33	1.414	Low
7	The user can navigate through different passages and activities smoothly.	4.44	0.726	High
8	The passages used in the reading materials are standardized and compliant with the DepEd Reading Programs.	4.44	0.726	High
9	The reading materials is hard to be installed and used by the users.	2.44	1.424	Low
10	The reading materials contains errors.	3.67	1.118	High
Composite		4.00	0.534	High

*Legend: 1.00-1.50-Very Low 1.51-2.50-Low; 2.51-3.50-Moderate; 3.51-4.50-High; 4.51-5.00-Very High

Table 5 shows the extent of effectiveness of the materials in terms of their user-friendliness. In general, the reading materials were assessed, generating a mean of 4.00 with a standard deviation of 0.534, meaning highly user-friendly. The obtained standard deviation suggests that the responses of the experts are close to the mean.

The experts found items 1 and 2, on the “clarity of instruction in every slide” and “ease of navigating the slides” ($\bar{X}$ =4.56, SD=0.527), to be user-friendly very highly. Likewise, on item 4, “buttons work perfectly in every slide” ($\bar{X}$ =4.67, SD=0.500).

In addition, “the content containing unnecessary information” ($\bar{X}$ =2.33, SD=1.414) and “long time it takes to install and be used” ($\bar{X}$ =2.44, SD=1.424) were found by the expert to be low in terms of being user-friendly. Therefore, the materials having just the right amount of information, and the length of time it takes to install and load onto any device, are the least of their concerns.

Moreover, item 10, “manual means of correcting errors in the materials” ($\bar{X}$ =3.67, SD=1.118), meaning highly user-friendly, is one of the concerns of the experts. This reflects that the developer of the reading intervention materials has sole access in terms of editing the materials. The editing option was restricted by the developer to prevent users in making unnecessary changes to the overall slides of the reading intervention materials.

Accessibility

Table 6 Extent of Effectiveness of the Materials Developed as Assessed by Experts in terms of Accessibility

No.	Indicators	Mean	SD	Verbal Interpretation
1	The reading materials cater to all users including those with disabilities.	4.67	0.500	Very High
2	The buttons in the storytelling materials are clickable.	4.89	0.333	Very High
3	The storytelling materials include captions that can be visualized clearly.	4.78	0.441	Very High
4	The storytelling materials include audio and video content.	4.78	0.441	Very High
5	The slides in the reading materials crash for some time.	3.78	1.093	High
6	Alternative buttons are unavailable to proceed to other slides back and forth.	2.44	1.509	Low
7	The storytelling materials can be loaded on any gadget, e.g., mobile phone, laptop, or desktop with an internet connection.	4.22	0.972	High
8	The texts, audio, and videos can be used easily.	4.11	0.928	High
9	The materials can be operated to all technological devices.	4.44	0.882	High
10	The reading materials can be used for a long time. It can continuously work despite logs on the internet and can be used for a long period of time.	4.22	0.972	High
Composite		4.23	0.490	High

*Legend: 1.00-1.50-Very Low 1.51-2.50-Low; 2.51-3.50-Moderate; 3.51-4.50-High; 4.51-5.00-Very High

Table 6 shows the extent of effectiveness of the materials in terms of their accessibility. In general, the reading materials were assessed, generating a mean of 4.23 with a standard deviation of 0.490, meaning highly accessible. The obtained standard deviation suggests that the responses of the experts are close to the mean.

The experts perceived items 1, 2, 3, and 4 on the “accessibility of the materials to all users” ($\bar{X}$ =4.67, SD=0.500), “buttons in the slide being clickable” ($\bar{X}$ =4.89, SD=0.333), “captions can be visualized easily” and “inclusion of audio and video” ($\bar{X}$ =4.78, SD=0.441), to be accessible “to a great extent”. On the other hand, the experts found item 6, “non-availability of alternative buttons” ($\bar{X}$ =2.44, SD=1.509), to be low in terms of being accessible.

From the researcher’s perspective, it is important that a user of the reading intervention materials must be able to access all the embedded functions. In this way, they can be able to maximize and experience how the clickable buttons work and at the same time achieve the purpose of utilizing the audio and video content. In addition, with the help of these audio-video materials, even people with disabilities can be able to use them. Furthermore, pupils focused well on the materials when they could access all the embedded buttons while playing the audio and video.

Accessibility is important to enable users and those who have disabilities to access information. According to the World Wide Web Consortium’s (W3C) Web Accessibility Initiative, accessibility is “essential for developers and organizations that want to create high-quality websites and web tools, and not exclude people from using their products and services” (Lawton Henry 2018a).

The effect of appearance and ease of use of an application or program is quite large. When the display looks comfortable, the user will be interested in trying it. Consequently, when they discover the functions embedded and can use them with ease, the more they will continuously utilize the program (M A T Pratama and A T Cahyadi 2020).

Flexibility

Table 7 Extent of Effectiveness of the Materials Developed as Assessed by Experts in terms of Flexibility

No.	Indicators	Mean	SD	Verbal Interpretation
1	The user can access the materials at their own pace.	4.56	0.726	Very High
2	The materials can be used in any setting with an internet connection.	4.11	0.928	High
3	The storytelling materials contain buttons to move to any intended reading level passages.	4.56	0.726	Very High
4	The storytelling materials have multi-function features, e.g. speaker buttons, next-back page buttons, home buttons, etc.	4.56	0.527	Very High
5	The storytelling materials can be updated and modified in real time by the author or whoever is given permission.	4.11	1.364	High
6	The slides look the same when accessed on other devices.	4.33	0.866	High
7	The texts in the reading materials are readable on any screen size.	4.56	0.726	Very High
8	The texts in the reading materials overlap with the other texts when zoomed in by the user's fingertips.	2.56	1.333	Moderate
9	The reading materials cater only to users with normal visions.	2.78	1.394	Moderate
10	The slides in the reading materials look smaller when used on a desktop/laptop compared to a mobile phone.	2.56	1.333	Moderate
Composite		3.87	0.561	High

*Legend: 1.00-1.50-Very Low 1.51-2.50-Low; 2.51-3.50-Moderate; 3.51-4.50-High; 4.51-5.00-Very High

Table 7 presents the effectiveness of the materials in terms of their flexibility. In summary, the reading materials were assessed, generating a mean of 3.87 and a standard deviation of 0.561, meaning highly flexible.

The experts found items 1, 3, and 7, on the “user being able to access the materials at their own pace”, “availability of button to move to intended slide”, and “readability of the texts in the materials to any gadget screen size” ($\bar{X}$ =4.56, SD=0.726), to be very highly flexible. Likewise, on item 4, “reading materials having multi-function features” ($\bar{X}$ =4.56, SD=527).

However, experts found items 8 and 10, on the “overlapping of texts when zoomed”, and “size of texts in the reading materials when displayed through desktop/laptop vs mobile phones” ($\bar{X}$ =2.56, SD=1.333), to be moderately flexible. Likewise, item 9, on the “inclusivity of users” ($\bar{X}$ =2.78, SD=1.394).

From the researcher’s perspective, the reading materials provide a great advantage to the pupils’ experience as they can spend the time they need in reading from one slide to another. However, there is a need to check the materials on how it can cater to users with visual issues or concerns.

The flexibility of an e-learning application provides enough time, place, and pace for users. Hence, this provides opportunities to engage in the learning process effectively with the aid of e-learning technologies (Kim, Hong & Song, 2019).

Suitability

Table 8 Extent of Effectiveness of the Materials Developed as Assessed by Experts in terms of Suitability

No.	Indicators	Mean	SD	Verbal Interpretation
1	The texts, videos and images are suited to their age and grade level.	4.22	0.833	High
2	Graphics / colors / sounds are used for appropriate for instructional reasons	4.33	0.866	High
3	The reading materials are adequate or can be used by all pupils in any place.	4.33	0.866	High
4	The reading materials provide sufficient information and drills to help pupils improve reading comprehension.	4.11	0.928	High
5	The reading materials used are consistent with the core and basic competency in the K-12 curriculum.	4.33	0.866	High
6	The number of words or sentence length in every passage length is appropriate to the grade level.	4.00	1.118	High
7	The level of difficulty of the vocabulary used in the text is appropriate to the grade level.	4.11	1.054	High
8	The number of items for drills in every passage is suitable for every grade level.	4.33	0.866	High
9	The reading materials or passages are contextualized in a Philippine culture and setting.	3.11	1.364	Moderate
10	The entire content of the reading materials meets its purpose to improve reading comprehension.	4.22	1.093	High
Composite		4.11	0.775	High

*Legend: 1.00-1.50-Very Low 1.51-2.50-Low; 2.51-3.50-Moderate; 3.51-4.50-High; 4.51-5.00-Very High

Table 8 shows the effectiveness of the materials in terms of their suitability. In general, the experts assessed the materials, generating a mean of 4.11 and a standard deviation of 0.775, meaning highly suitable.

The experts found items 2, 3, 5, and 8, on the “Graphics/colors/sounds being appropriate for instructional reasons”, “adequacy and usage of the reading materials for all pupils”, “consistency of the reading materials in core and basic competency of k-12 program”, and “suitability of the number of items for drills to their grade level” ($\bar{X}=4.33$, $SD=0.866$), to be highly suitable. Likewise, items 1, 4, 6, 7, and 10, on the “suitability of the texts, images, and videos to pupils’ age and grade” and “materials achieving its purpose to improve reading comprehension” ($\bar{X}=4.22$, $SD=0.833$), “sufficiency of drills and information” ($\bar{X}=4.11$, $SD=0.98$), “appropriateness of passages’ length to the grade level” ($\bar{X}=4.00$, $SD=1.118$), and “level of difficulty being age appropriate” ($\bar{X}=4.22$, $SD=1.093$). On the other hand, the experts found item 9, on the “materials not being contextualized” ($\bar{X}=3.11$, $SD=1.364$), to be moderately suitable.

According to their assessment, in general, it is good to note that the materials used are aligned with the nationally accepted reading standards set by DepEd, are adequate or can be used by all pupils whether synchronously or asynchronously, are consistent with the core and basic competency in the K-12 curriculum, and the types of texts are interesting and motivating. Hence, pupils’ overall learning experience is guided with the standards and competencies set and required by the Department of Education. However, the reading materials or passages are neither contextualized nor culture-based, thus not activating prior knowledge. As perceived by the experts, the graphics and background images used in the reading intervention materials must reflect the Philippine setting and culture.

The suitability of the reading materials must be appropriate to the developmental needs of the pupils. Therefore, instructional or intervention materials must be adaptive considering the competencies with respect to their age. Customizing the content and setting up an adaptive e-learning environment improve the quality of online learning. Furthermore, it should be adaptable based on the needs and learning styles of each student in the same course. (Franzoni & Assar, 2009; Kolekar et al., 2017).

Creativity

Table 9 Extent of Effectiveness of the Materials Developed as Assessed by Experts in terms of Creativity

No.	Indicators	Mean	SD	Verbal Interpretation
1	The storytelling materials are interactive and fun.	3.89	0.928	High
2	The materials have audio clip instructions for the users to listen to.	4.22	0.833	High
3	The pupils can test their comprehension with the help of practice questions at their own pace and time.	4.44	0.726	High
4	The storytelling materials have images, videos, and sound elements that are visually appealing to users.	4.11	1.054	High
5	The storytelling materials used creative designs that attract user’s attention.	4.00	1.000	High
6	The slides in the storytelling materials include animations that make them enjoyable for users.	4.00	1.000	High
7	The types and sizes of fonts are unique and visually compelling.	4.11	1.054	High
8	The materials are not content centered and users hardly see options that they are interested in.	3.78	1.202	High
9	The materials are too colorful which makes the entire materials not appealing to users.	2.44	1.424	Low
10	The reading materials do not meet its main objective which is to improve reading comprehension.	2.22	1.202	Lor
Composite		3.72	0.585	High

*Legend: 1.00-1.50-Very Low 1.51-2.50-Low; 2.51-3.50-Moderate; 3.51-4.50-High; 4.51-5.00-Very High

Table 9 presents the effectiveness of the materials in terms of their creativity. In general, the materials were assessed, generating a mean of 3.72 with a standard deviation of 0.585, meaning it's highly creative.

The experts found that items 1 to 9, on the “storytelling materials being interactive and fun” ($\bar{X}=3.89$, $SD=0.28$), “presence of audio clip instructions” ($\bar{X}=4.22$, $SD=0.833$), “presence of practice questions” ($\bar{X}=4.44$, $SD=0.726$), “visually appealing video and images, and audio element” and “unique and visually compelling font types and sizes” ($\bar{X}=4.11$, $SD=1.054$), “materials used creative designs” and “inclusion of animation” ($\bar{X}=4.00$, $SD=1.000$), “materials not being content centered” ($\bar{X}=3.78$, $SD=1.202$), and “materials not being able to improve reading comprehension” ($\bar{X}=2.22$, $SD=1.202$), to be highly creative. On the other hand, the experts found item 9, on the “materials being colorful, thus not appealing to users” ($\bar{X}=2.44$, $SD=1.424$), to be low in terms of creativity.

This implies that the reading materials are highly effective, interactive, engaging, with multimedia elements, and use creative designs. One of the advantages of the materials is, the pupils can test their comprehension with the help of practice questions at their own pace and time. Also, experts are happy that the materials have audio clip instructions for the users to listen to. Embedding audio in the reading materials helps pupils to practice reading words that are unfamiliar to them and improves their listening skills. On the other hand, the interactive and fun parts of the materials need to be taken into consideration.

Prior to the COVID-19 pandemic, online learning had been continuously blooming in the 21st century. Making instructional materials creative posts excites the users. Therefore, teachers are forced to create an attractive teaching and learning environment capable of academic excellence and creative students in 21st-century education (Pazzin et. al, 2022).

Table 10 Summary of Extent of Effectiveness of the Materials Developed as Assessed by Experts

Variables	Mean	SD	Verbal Interpretation
User-friendly	4.00	0.534	High
Accessibility	4.23	0.490	High
Flexibility	3.87	0.561	High
Suitability	4.11	0.775	High
Creativity	3.72	0.585	High
Composite	3.99	0.519	High

*Legend: 1.00-1.50-Very Low 1.51-2.50-Low; 2.51-3.50-Moderate; 3.51-4.50-High; 4.51-5.00-Very High

Table 10 shows the summary of the effectiveness of the materials. In summary, the materials were assessed, generating a mean of 3.99 and a standard deviation of 0.519, meaning highly effective.

The experts found that materials' "accessibility", with a mean of 4.23 and a standard deviation of 0.490, meaning "to an extent", obtained the highest mean. This implies that users can freely access the reading materials at their own pace and time. On the other hand, the "creativity" of the materials ($\bar{X}$ =3.72, SD=0.585) obtained the lowest mean. However, this still implies that the materials are effective "to an extent".

The experts' comments on the storytelling intervention materials such as 1) The responses to the multiple questions in the Google form for the reading /listening comprehension should be arranged alphabetically or according to the length of the phrase or sentence responses--the principle of test construction; 2) Comprehension questions should follow the HOTS; include a higher level of questions for application, evaluation, and creation; 3) Reading/listening materials' length and difficulty should be appropriate to age; some materials are appropriate for the primary level; 4) Ensure seamless cutting of the narration in the video; 5) Provide motive questions before reading a text. 6) Identifying the level of comprehension questions (Literal, Inferential, or Critical), 7) making it appealing to target users to improve their reading comprehension and love for reading, were considered in the improvement of the teacher-developed storytelling intervention materials.

All the criteria are equally important and need to be observed in developing reading-intervention materials. These provide the best opportunities for the attainment of progress in reading comprehension for the pupils. The likelihood of hooking pupils' attention to utilize these reading materials with the help of the functions and features is evident.

Designing instructional materials must consider cognitive load. Since this reading material contains a combination of aural and visual information, the objective of the entire material must be clear. Understanding how our brain works must also be considered. Cognitive load "is a theory about learning built on the premise that since the brain can only do so many things at once, we should be intentional about what we ask it to do" (Heick, 2019).

PHIL-IRI Group Screening Post-test Results of the Pupils

Sex

Table 11 PHIL-IRI Group Screening Post-Test Results of the Pupils According to Sex

Sex	Frustration		Instructional		Independent	
	f	%	f	%	f	%
Male	4	80	29	66	16	67
Female	1	20	15	34	8	33
Total	5	100	44	100	24	100

Data reveal that most of the pupils (44 or 60%) obtained an instructional level based on the PHIL-IRI group screening posttest. Most of them are males (29 or 66%). Coming second are females (15 or 34%). This is followed by 24 pupils (33%) who obtained the independent level. Most of them (16 or 67%) are males, followed by 8 females (33%). However, 5 pupils (7%) remained in the lowest comprehension level, the frustration level.

Male pupil-respondents have better performance than females. As compared to the pretest results, these participants performed better in the posttest. The Plethora of research conducted related to reading comprehension, where sex was considered as a variable, has shown different results demonstrating that females outperform males, vice versa, or even no relationship at all. These variances in terms of reading comprehension can be attributed to various reasons, such as reading attitudes, individual practices, lower value of reading, and self-concept, considering their motivation.

On the contrary, there is research that reveals females outperforming males or vice versa, or no relationship at all in terms of reading comprehension. In the study of Espinoza & Strasser (2020) when it comes to reading comprehension, and in the study of Minoza & Montero (2019), females outperformed males in terms of oral reading. However, according to Osikomaiya O. (2020), there is no generally accepted consensus that females have an edge over males. It depends on the positive attitude and readiness of the learner to learn.

Furthermore, according to Danielle (2019), other studies reveal that girls only do better than boys if they read texts that sound feminine. In comparison, boys will have greater comprehension achievement if they read texts that sound masculine. They will also do better than females in passages with science-oriented topics.

This implies that males perform better in the post-test compared to females after the intervention was implemented.

Socioeconomic Status (SES)

Table 12 PHIL-IRI Group Screening Post-Test Results of the Pupils According to Socioeconomic Status

Socioeconomic Status	Frustration		Instructional		Independent	
	f	%	f	%	f	%
Poor	3	60	25	57	15	63
Low Income	2	40	13	29	6	25
Low Middle Class	0	0	4	9	2	8
Middle Class	0	0	2	5	1	4
Total	5	100	44	100	24	100

Data reveal that most of the pupils (44 or 60%) obtained an instructional level based on the PHIL-IRI group screening posttest. Most of them are males (29 or 66%). Coming second are females (15 or 34%). This is followed by 24 pupils (33%) who obtained the independent level. Most of them (16 or 67%) are males, followed by 8 females (33%). However, 5 pupils (7%) remained in the lowest comprehension level, the frustration level.

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Low Income	2	40	13	29	6	25
Low Middle Class	0	0	4	9	2	8
Middle Class	0	0	2	5	1	4
Total	5	100	44	100	24	100

Data reveals that majority of the pupils, across all levels of comprehension, (43 or 59%) belong to poor family, followed by 21 pupils (29%) who belong to low-income class, and 6 pupils (8%) who belong to low middle class, and 3 pupils (4%) who belong to middle class. This typifies a public elementary school in the country.

The majority (60%) of the pupils under the frustration level are poor, and forty percent (40%) belong to low-income families. Coming second are those who fell under the Instructional level, where fifty-seven (57%) percent are poor, twenty-nine (29%) percent are low income, nine (9%) percent are in the lower middle class, and five (5%) percent belong to the middle class. Lastly, there is the independent level where sixty-three (63) percent are poor, twenty-five (25%) percent are in the low-income class, and eight (8%) are in the middle class. Adequate support for the pupils' basic needs is crucial for them to thrive to their utmost potential. They would better learn and focus when the stomach is full, reading materials are available, and guidance or support from the parents.

However, these pupils living in low socioeconomic environments are faced with challenges that are beyond their control. This issue creates a chain of obstacles for pupils from a lack of parental support at home, insufficiency, to the non-availability of reading resources, to their feeling of inferiority in fulfilling academic success (Tuell, 2021).

Furthermore, Socioeconomic Status (Dolean, et.al 2019), is an evident variable that affects the reading comprehension ability of learners. Multiple factors were found to have direct or indirect effects on learners to develop good reading comprehension. Parents' education level was a consistent and significant contributor to the SES construct in all models, and letter knowledge was clearly the strongest mediator of the four cognitive and linguistic variables.

Parents' Educational Attainment

Table 13 PHIL-IRI Group Screening Post-Test Results of the Pupils According to Parents' Educational Attainment

Educational Attainment	Mother						Father					
	Frustration		Instructional		Independent		Frustration		Instructional		Indepen	
	f	%	f	%	f	%	f	%	f	%	f	%
Elementary	0	0	3	7	1	4	0	0	3	8	2	5
High School	3	60	28	64	14	58	4	80	18	41	11	46
College	1	20	13	29	9	38	0	0	19	43	10	43
Post Graduate	1	20	0	0	0	0	1	20	2	4	0	0
No Formal Schooling	0	0	0	0	0	0	0	0	2	4	1	4
Total	5	100	44	100	24	100	5	100	44	100	24	100

Data reveal that most of the pupils (44 or 60%) who performed better in the post-test are those with fathers (19 or 43%) who reached college and with mothers (28 or 64%) who reached high school. Coming second are those with fathers (18 or 41%) who reached high school and with mothers (13 or 29%) who reached college. These pupils have instructional-level results. Most pupils at the independent level are those whose father (11 or 46%) and mother (28 or 64%) have reached high school. On the other hand, there were 4 pupils (5%) whose fathers and mothers have reached high school, and 1 pupil (1%) whose father has reached post-graduate, remaining in the frustration level. Likewise, there are 2 pupils (3%) whose mothers reached college and high school, and 3 pupils (4%) whose mothers reached high school.

Parents' involvement and interest in the children's work a predictors of reading and academic performance. These data suggest that those mothers who reached high school level or higher have a great advantage in supporting their children's reading fluency and academic success. In addition, in the Philippine culture, most mothers spend more time with their children than fathers. Filipino fathers and mothers are taking on traditional roles in the home, with fathers being providers and "protectors" but having limited time in the daily lives of their children, and mothers taking on the tasks of childrearing, discipline, and "managing the home" (Alampay LP & Jocson RM, 2019).

In addition, according to Alampay LP & Jocson RM (2019) stating about mothers having more time to spend with their children than fathers, due to work in order to provide for the family needs, their interest in the academic work of their children posts motivation to progress in their studies. Furthermore, the higher the educational level they attain, the easier for them to assist their children in schoolwork.

Difference Between the Pre-test and Post-test on the Reading Comprehension Level of the Pupils

Sex

Table 14 Difference Between the Pre-test and Post-test on the Reading Comprehension Level of the Pupils when grouped according to Sex

Sex	Pretest		Posttest		T-value	Sig	Deci-sion	Interpre-tation
	Mea n	SD	Mea n	SD				
Male	7.12	2.71	12.7	3.41	-9.890	.00	Reject Ho	Significant
Female	6.88	2.42	13.8	3.28	-6.968	.00	Reject Ho	Significant

***Significant at 0.05**

The data reveal that there is a significant difference in the pretest and posttest results on the reading comprehension level of both male and female pupils. This is based on the sig values, which were less than 0.05 ($P < 0.05$) level of significance.

This shows that there is an improvement in the performance of both males and females. Male pupils have an increase of six points, from the mean of 7.12 in the pretest to the mean of 12.71 in the posttest. Female pupils have an increase of seven points, from the mean of 6.88 in the pretest to the mean of 13.79 in the posttest.

Therefore, it could be drawn that the teacher-developed storytelling intervention materials are highly effective on improving the pupil-respondents' reading comprehension for both males and females.

According to Osikomaiya O. (2020) there is no generally accepted consensus that females have edge over males. It depends on the positive attitude and readiness of the learner to learn. Furthermore, according to Danielle (2019) other studies reveal that girls only do better than boys if they read texts that sound feminine. In comparison, boys will have greater comprehension achievement if they read texts that sound masculine. They will also do better than females in passages with science-oriented topics.

Socioeconomic Status

Table 15 Difference Between the Pre-test and Post-test on the Reading Comprehension Level of the Pupils when grouped according to Socioeconomic Status

Socioeconomic Status	Pretest		Posttest		T-value	Sig	Deci-sion	Interpre-tation
	Mean	SD	Mean	SD				
Poor	6.81	2.736	13.02	3.602	-8.761	.000	Reject Ho	Significant
Low Income	7.04	2.459	12.52	3.311	-6.058	.000	Reject Ho	Significant
Low Middle Class	8.33	2.422	14.67	2.041	-4.238	.008	Reject Ho	Significant
Middle Class	7.67	2.082	15.33	2.309	-23.000	.002	Reject Ho	Significant

Significant at 0.05

Data reveal that there is a significant difference in the pretest and posttest results on the reading comprehension level of pupils when they are grouped according to socioeconomic status. This is based on the sig values, which were less than 0.05 ($P < 0.05$) level of significance. An improvement in the scores of these pupils, as reflected in their scores, is evident. Most of the pupils in the middle class have better performance in the pretest ($\bar{X} = 7.67$, $SD = 2.082$), while those in the low middle class have better performance in the post-test ($\bar{X} = 14.67$, $SD = 2.041$). Those in the low middle class obtained the highest mean in both the pretest (7.67) and posttest (14.67). Furthermore, pupils who belong to poor family class got the lowest mean in the pre-test (6.81) and also improved in the post-test (13.02).

Hence, it could be drawn from these results that socioeconomic status plays an important role in developing pupils' reading comprehension.

Studies reveal that low economic status has a detrimental effect on the academic and linguistic development of pupils, unlike average or high economic status, as a result of a lack of parent support at home, insufficient to non-availability of reading resources, leading to inferiority in fulfilling academic success (Tuell, 2021). On the other hand, the data reveal that the intervention helped improve the overall performance of the pupils' reading comprehension.

Parents' Educational Attainment

Table 16 Difference Between the Pre-test and Post-test on the Reading Comprehension Level of the Pupils when grouped according to Father's Educational Attainment

Father's Educational Attainment	Pretest		Posttest		T-value	Sig	Decision	Interpretation
	Mean	SD	Mean	SD				
Elementary	7.00	3.162	12.80	3.834	-2.610	.059	Accept Ho	Not Significant
High School	6.73	2.637	13.00	3.674	-8.388	.000	Reject Ho	Significant
College	7.41	2.428	13.48	2.641	-8.440	.000	Reject Ho	Significant
Post Graduate	7.00	2.646	10.33	4.041	-1.429	.289	Accept Ho	Not Significant
No Formal Schooling	7.00	4.359	13.00	6.245	-1.169	.363	Accept Ho	Not Significant

Significant at 0.05

In terms of fathers' educational attainment, a significant difference in the pretest and post-test results on the reading comprehension level of pupils is evident between those fathers who reached high school (Pre-test: $\bar{X}=6.73$, $SD=2.637$; Post-test: $\bar{X}=13.00$, $SD=3.672$) and college (Pre-test: $\bar{X}=7.41$, $SD=2.428$; Post-test: $\bar{X}=13.48$, $SD=2.641$). This is based on the sig values, which were less than 0.05 ($P<0.05$) level of significance. A mean difference of six points is observed. On the contrary, there is no significant difference between those pupils whose fathers reached or finished elementary (Pre-test: $\bar{X}=7.00$, $SD=3.162$; Post-test: $\bar{X}=12.80$, $SD=3.834$), postgraduate (Pre-test: $\bar{X}=7.00$, $SD=2.646$; Post-test: $\bar{X}=10.33$, $SD=4.041$), and no formal schooling (Pre-test: $\bar{X}=7.00$, $SD=4.359$; Post-test: $\bar{X}=13.00$, $SD=6.245$). This is based on the sig values, which were less than 0.05 ($P>0.05$) level of significance. Hence, the higher the level of the father's education, the better they can assist when their children experience difficulties in terms of reading and academic activities.

In the study of Çalışkana E.R. & Ulaşb A.H., (2021), fathers with higher educational attainment have a great impact on their children's academic success.

Table 17 Difference Between the Pre-test and Post-test on the Reading Comprehension Level of the Pupils when grouped according to Mother's Educational Attainment

Mother's Educational Attainment	Pretest		Posttest		T-value	Sig	Decision	Interpretation
	Mean	SD	Mean	SD				
Elementary	7.50	1.00	10.5	3.11	-1.60	.21	Accept Ho	Not Significant
High School	7.16	2.62	13.3	3.54	-8.79	.00	Reject Ho	Significant
College	6.83	2.82	13.4	2.73	-9.35	.00	Reject Ho	Significant

*Significant at 0.05

In terms of mothers' educational attainment, a significant difference in the pretest and posttest results on the reading comprehension level of pupils is evident between those mothers who reached high school and college. This is based on the sig values, which were less than 0.05 ($P<0.05$) level of significance, and a mean difference of seven points is observed. There is no significant difference between those pupils whose mothers reached or finished elementary. This is based on the sig values, which were less than 0.05 ($P>0.05$) level of significance. There is no result for postgraduate because there is only one respondent.

The result reveals that the mother's educational attainment posts a great advantage in the improvement and development of the pupils' reading comprehension. Furthermore, in the study conducted by Esteban et. al. (2020), parents' academic qualifications, profession, and educational role are the most influential aspects of the predictability in the variability of their children's reading skills. Hence, when the mother has high educational attainment, complemented with most of their time with their children, the more they can assist them in terms of schoolwork.

V. Summary of Findings and Conclusions

The study aimed to improve the reading comprehension of the pupils in the intermediate level of South Cembo Elementary School for the school year 2023-2024, with the use of teacher-developed storytelling intervention materials. The reading materials were validated by 8 experts who are adept at using technology, and one pupil as a user. The data were obtained from 73 pupils in Grades

4 to 6. The pre-experimental research design was employed, and the collected data were analyzed through Statistical Package for Social Sciences (SPSS), using frequency, percentage, mean, and standard deviation, and paired T-test.

Summary of Findings

The findings of the study were summarized, thus:

1. Pupils' Respondents Profile in Terms of

1.1 Sex

The majority, or 67% of the pupil-respondents, are male.

1.2 Socioeconomic Status (SES)

The majority, or 59% of them, are poor or have a monthly income of ₱10,987 or below.

1.3 Parents' Educational Attainment

The majority of the parents of the pupil-respondents, both father (33 or 45%) and mother (45 or 62%), have reached high school level.

2. Group Screening Pre-test Results of the pupils based on the Comprehension Level The majority, or 64% of the pupils, fall under the frustration level, and the remaining 36% fall under the instructional level.

3. Intervention materials developed to improve pupils' reading comprehension the researcher developed storytelling-intervention materials that aim to improve pupils' reading comprehension.

Incorporated in the slides are the 12 reading passages, vocabulary enrichment, comprehension questions, and titles of the passages designated for every grade level. It also contains clickable buttons that are linked to the pages in the entire Google Slides. Also present in the materials are images or pictures related to every passage that were also attached to every slide, recorded storytelling video materials, and audio buttons. The materials were used during the second grading period.

4. The extent of Effectiveness of the storytelling intervention materials as perceived by the experts based on the following indicators:

4.1 User-friendliness

The materials developed in terms of user-friendliness are highly effective, as assessed by the experts. They praise the materials in terms of the quick response of the embedded button, clearly stated instructions and easy navigation.

4.2 Accessibility

The experts assessed the effectiveness of the materials as highly accessible. The clickable buttons of the materials and the inclusion of audio and video were admired.

4.3 Flexibility

In terms of flexibility, the experts assessed the materials as highly effective. The highest mean was attributed to "having buttons to move to any intended reading level passages", "having multifunction features", and "readable reading materials on any screen sizes".

4.4 Suitability

The materials developed in terms of its suitability is highly effective, as assessed by the experts. It is good to note that the materials used are aligned with the nationally accepted reading standards set by DepEd, are adequate or can be used by all pupils whether synchronously or asynchronously, are consistent with the core and basic competencies in the K-12 curriculum, and the types of texts are interesting and motivating.

4.5 Creativity

In terms of the creativity of the teacher-developed reading materials, the experts assessed them as highly effective. Utilizing the materials, pupils can test their comprehension with the help of practice questions at their own pace and time. Furthermore, the materials have audio clip instructions for the users to listen to.

In summary, the teacher-developed storytelling intervention materials are highly effective, as assessed by the experts, with a composite mean of 3.99 and standard deviation of 0.519. Accessibility obtained the highest mean of 4.23 and standard deviation of 0.490, while creativity got the lowest mean assessment with a mean of 3.72 and standard deviation of 0.585.

5. Respondents PHIL-IRI Group Screening Post-test Results in terms of Sex, Socioeconomic Status, and Pupils' parents' Educational Attainment

5.1 Sex

The majority (44 or 60%) of the pupil-respondents obtained an instructional level wherein male pupil participants performed better than females.

5.2 Socioeconomic Status (SES)

The majority (57%) of the pupil-participants under the instructional level are poor, and (29%) belong to low-income families.

5.3 Pupil-Parents' Educational Attainment

The majority of the pupil-participants who performed better in the post-test were those fathers who reached college and those mothers who reached high school. Significant difference between the pre-test and post-test on the reading comprehension level of the pupils.

6. Difference Between Pre-test and Post-test on the Reading Comprehension Level of the Pupils

6.1 Sex

There is a significant difference in the reading comprehension level of both male and female pupil-participants in terms of the pretest and post-test results.

6.2 Socioeconomic Status (SES)

When pupil-participants are grouped according to socioeconomic status, a significant difference exists between the pretest and post-test results on reading comprehension. Most of the pupil-participants in the middle class have better performance in the pretest, while those in the lower middle class have better performance in the posttest. Educational Attainment

6.1 Educational Attainment

Parents' educational attainment has a significant difference in the pretest and posttest results on the pupil-participants' reading comprehension between those who reached high school and college. On the contrary, there is no significant difference between those pupils whose parents reached or finished elementary. It can be cited, based on the data, that there is no result for postgraduate studies since there is only one respondent.

7. Proposed enhancements to further improve the quality of the storytelling materials based on the findings of the study.

Based on the findings, the researcher had undertaken the following enhancements to further improve the quality of the storytelling intervention materials.

The storytelling intervention materials, including background color, were enhanced to make them more visually appealing, and the text sizes for vocabulary words were adjusted to make it easy to read. The clickable buttons were also ensured to be working perfectly so they to respond quickly. The unnecessary information and instructions, which have no bearing on the storytelling intervention materials, were also removed and replaced with words that are simple and concise.

The comprehension questions were also edited, wherein they can be answered and checked in real time. Alternative buttons have also been added to all the slides to ensure a smooth transition from one slide to the next.

Furthermore, the principle of test construction for the comprehension questions was considered, wherein choices were arranged depending on the length of the phrases or sentences. Motive questions were also included prior to the presentation of every passage. The graphics or images of the intervention materials were also modified to make them more appealing to users. Finally, the levels of comprehension questions were also identified (Literal, Inferential, and Critical).

VI. Conclusions

Based on the results of the findings in the study, it can be drawn that the "Teacher-developed Storytelling Intervention Materials" are effective in developing the pupils' reading comprehension. Therefore, intensive training for teachers in crafting interventions or innovative materials should be undertaken to further improve the quality of the teaching-learning process. The reading comprehension level of the pupils' can be improved regardless of their sex. Hence, creating or designing instructional materials could help to captivate pupils' interest while acquiring knowledge and developing a love for reading. The educational attainment of the parents is a predictor of the pupil's academic performance and reading development. As revealed by the pre-test and post-test results after the intervention, the higher their educational attainment, the more likely the pupils are to have better reading performance. Hence, the perception of the importance of education should be instilled in the entire community. Based on the findings, the socioeconomic status of has a significant effect on the pupil-respondents' reading comprehension. Hence, exploring different means and ways of teaching and learning is essential to continue improving the quality of education. Given the reality that intervention or innovative materials help pupils learn and develop reading comprehension, teachers should unceasingly think and cultivate their innate potential in coming up with new and motivating teaching tools that would aid pupils in their academic journey.

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