



## Visual Scheduling and Literacy Growth for Inclusive Reading Instruction

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### Abstract:

This study examined the effectiveness of visual schedules in enhancing reading comprehension, vocabulary, and phonological awareness among inclusive learners at Camp 7 Elementary School. Pre-test results revealed notable gaps in comprehension and vocabulary, with 30% of learners at the beginner level and 35% at beginner or intermediate stages in vocabulary. Phonological awareness, however, showed a strong baseline. Following the intervention, post-test outcomes demonstrated significant improvement: no learners remained at the beginner stage in comprehension, vocabulary scores stabilized with a high concentration in the advanced category, and phonological awareness uniformly reached advanced levels. These findings underscore the role of visual schedules in scaffolding comprehension, reducing cognitive load, and fostering learner independence. The structured and multimodal approach provided clarity, predictability, and accessibility, enabling learners to better organize information, anticipate tasks, and strengthen literacy outcomes. Recommendations emphasize embedding visual schedules into daily instruction, prioritizing teacher capacity-building, customizing tools for learner differentiation, institutionalizing monitoring and evaluation, and aligning policies with institutional goals of equity and professionalization. Overall, the study affirmed that visual schedules are a sustainable and scalable pedagogical strategy that promotes inclusivity, strengthens literacy achievement, and supports diverse learners in varied educational contexts.

**Keywords:** *Special Education, Visual schedules, Inclusive education, Reading comprehension, Vocabulary development, Phonological awareness, Mixed-Method, Minglanilla, Cebu, Philippines*

### Introduction:

Reading comprehension is a foundational skill in literacy development and a crucial component of academic success across grade levels. However, many inclusive learners, particularly those with learning difficulties, attention deficits, or neurodevelopmental disorders such as autism spectrum disorder, often struggle to maintain focus, organize tasks, and understand the sequence of reading activities. These challenges can impede their ability to comprehend texts effectively. Thus, it becomes imperative for educators to employ differentiated and visually supportive teaching strategies that accommodate diverse learning needs within inclusive classrooms. One promising pedagogical approach that addresses these challenges is the use of visual schedules.

Visual schedules, including visual aids and other forms of visual support, are structured visual representations, such as charts, icons, or pictorial sequences, that outline the steps or activities involved in a lesson. They are designed to help learners understand what is expected of them and what will occur next, thereby providing predictability and reducing anxiety. According to Quintero, Baldiris, Rubira, Cerón, and Velez (2019), visual activity schedules have been shown to improve task engagement, independence, and comprehension among learners with autism spectrum disorders. In the context of reading instruction, visual schedules serve as cognitive and organizational supports that scaffold students' understanding of text-related activities. For instance, a visual schedule may present the stages of a reading lesson, previewing, reading, discussing, answering comprehension questions, and reflecting, through a series of images or icons. This visual guidance allows learners to process the lesson sequence independently, thereby promoting engagement and self-regulation.

Additionally, the use of visual schedules supports inclusive education by fostering a learning environment that values diversity and accessibility. Mastropieri and Scruggs (2020) emphasize that differentiated instruction strategies, such



as visual and multimodal supports, are central to the success of inclusive classrooms. Visual schedules help create a predictable and inclusive learning atmosphere where students with varying abilities can participate meaningfully in reading lessons. For many learners, particularly those with special educational needs, predictability and visual structure reduce cognitive overload, increase motivation, and improve comprehension outcomes, as cited by Quintero et al. (2019) and supported by the findings of Dettmer et al. (2013).

On the other hand, the need for locally grounded research remains urgent. Recent DepEd reports and school-level Phil-IRI data continue to show sizable proportions of struggling readers and low reading comprehension among Filipino learners. For example, regionally collated Phil-IRI results from the 2022–2023 cycle reported that approximately 20% of learners failed in reading comprehension, while about 25% were classified as struggling readers. Moreover, international assessments and local studies have highlighted persistent challenges in reading proficiency among Filipino students, particularly among those who are socioeconomically disadvantaged or have special educational needs. Although research in the Philippines has examined visual learning and the use of visual aids, such as studies conducted in Cebu and recent investigations into visual-themed reading interventions, there remains a notable gap in the literature. Few studies have systematically measured the direct effects of structured visual schedules and visual supports on reading comprehension outcomes for inclusive learners across multiple public-school contexts. By focusing on inclusive classrooms in Bohol and Cebu and employing quantitative measures of comprehension, this study seeks to address that gap and provide locally relevant empirical evidence on whether, and to what extent, visual scheduling and visual supports improve reading comprehension and self-regulation among learners with diverse needs. The findings are expected to contribute actionable recommendations for DepEd practice and school-level instructional planning, including scalable visual-support templates, teacher training priorities, and monitoring tools that support inclusive literacy goals in the Philippine basic education system.

Nevertheless, the integration of visual schedules as a pedagogical tool in teaching reading comprehension offers a structured, inclusive, and learner-centered approach that addresses the diverse needs of students. It empowers inclusive learners by promoting comprehension, independence, and engagement while upholding the principles of equitable education. This pedagogical practice therefore holds significant potential for enhancing literacy instruction and ensuring that no learner is left behind in the reading process.

Hence, this study aims to quantitatively assess the relationship between the application of visual schedules, visual aids, and visual supports as pedagogical strategies in selected schools in Bohol and Cebu. The findings will serve as a basis for developing an enhanced pedagogical instructional plan for the school year 2025–2026.

## Literature Review:

This study posits that the effective implementation of visual schedules, visual aids, and visual supports as pedagogical tools can significantly improve the reading comprehension of inclusive learners, particularly in the areas of comprehension, vocabulary development, and phonological awareness. The foundation of this research is Dual Coding Theory (Paivio, 1986), which states that learning is enhanced when information is processed through two interrelated systems: the non-verbal or visual system, which deals with imagery, and the verbal system, which handles language-based input. By combining text-based instructions with pictures or icons that depict each step of an activity, educators operationalize this notion. For inclusive learners, this dual presentation is especially helpful since visual clues benefit students who have trouble comprehending long or abstract verbal and symbolic representations, lessen confusion, and reinforce spoken instructions. Learners develop two separate but connected mental representations when they are exposed to both verbal and visual information. This greatly improves memory retention and reduces the cognitive burden necessary to understand complex instructions.

In addition, this premise is supported by Cognitive Load Theory (CLT), developed by John Sweller, which emphasizes that human working memory has a limited capacity; therefore, instructional materials must be designed to prevent cognitive overload. CLT identifies three types of cognitive load: intrinsic load, which relates to the complexity of the material; extraneous load, which stems from poor instructional design; and germane load, which supports meaningful learning.

For learners with attention difficulties, executive-function challenges, or learning disabilities, unstructured reading tasks can create unnecessary extraneous load that hinders comprehension. Visual schedules address this issue by



breaking reading activities into manageable steps and providing structured, predictable cues that reduce the mental effort required to plan, organize, and transition between tasks. By minimizing extraneous load, visual schedules free students' cognitive resources, allowing them to focus more effectively on understanding the text itself.

The Universal Design for Learning (UDL) framework further supports the use of visual schedules in inclusive classrooms. Rooted in neuroscience, UDL advocates for the design of instruction that accommodates learner variability through three core principles: providing multiple means of representation, offering multiple ways for learners to express what they know, and fostering engagement through varied motivational pathways. Visual schedules align with these principles by presenting instructional steps through accessible visual representations, ensuring that learners who may struggle with verbal instructions can still understand and participate in reading activities. They promote predictability, reduce anxiety, and enhance independence, thereby enabling students with diverse needs, including those with disabilities, processing difficulties, and language challenges, to meaningfully engage in literacy learning. Through this alignment with UDL, visual schedules contribute to a more equitable and inclusive learning environment in which all students can succeed in reading comprehension tasks.

According to Vygotsky (1978), learners construct knowledge within their Zone of Proximal Development (ZPD) through the assistance of more capable peers or teachers who provide scaffolds that guide learning. These scaffolds help reduce cognitive load, thereby optimizing the use of working memory for meaningful learning processes. By minimizing extraneous cognitive load, such as difficulties in decoding text or organizing information, assistive technology (AT) tools enable students to focus their cognitive resources on understanding and integrating content. This alignment with Cognitive Load Theory (CLT) principles can enhance reading comprehension, writing skills, and overall academic performance among students with learning disabilities (LD).

The use of visual schedules as a pedagogical approach in teaching reading comprehension for inclusive learners is anchored in several national and international laws that promote inclusive education, equitable learning opportunities, and quality literacy instruction. These legal provisions support the inclusion of all learners, regardless of ability, within mainstream classrooms and emphasize the need for differentiated and accessible instructional strategies.

At the national level, the 1987 Philippine Constitution, Article XIV, Section 1, declares that "the State shall protect and promote the right of all citizens to quality education at all levels and shall take appropriate steps to make such education accessible to all." This constitutional mandate establishes education as a right and obliges schools to provide appropriate pedagogical interventions, including the use of visual and adaptive supports, to meet diverse learners' needs.

In alignment with this, Republic Act (RA) 11650, or the Inclusive Education Act of 2022, reinforces the Philippine government's commitment to providing equitable and accessible education for all learners, particularly those with disabilities and other learning difficulties. The law mandates the establishment of Inclusive Learning Resource Centers in every city and municipality, promotes early identification and intervention, and ensures that learners with disabilities receive appropriate support services within regular schools. RA 11650 emphasizes the need for accessible learning materials, individualized support, and responsive pedagogical approaches that enable full participation in classroom activities. Within the context of reading instruction, the law underscores the responsibility of schools and teachers to adopt instructional strategies, such as visual schedules and other visual supports, that reduce barriers to learning and allow diverse learners to meaningfully engage with literacy tasks.

Similarly, the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD, 2006), which the Philippines has ratified, provides a global human-rights framework affirming that persons with disabilities must enjoy inclusive, quality, and free education on an equal basis with others. Article 24 specifically mandates that states ensure learners with disabilities are not excluded from the general education system and that reasonable accommodations and effective individualized supports are provided to maximize academic and social development. This international commitment aligns with the need for accessible instructional strategies in mainstream classrooms. The use of visual schedules, multimodal materials, and structured supports directly responds to the UNCRPD's call for pedagogical flexibility and barrier-free learning environments that honor the rights, dignity, and full participation of learners with disabilities. Nevertheless, the Salamanca Statement and Framework for Action on Special Needs Education (UNESCO, 1994) serves as a foundational global declaration promoting inclusive education as the most effective means of addressing diverse learning needs. It emphasizes that ordinary schools must accommodate all children



regardless of physical, intellectual, social, emotional, linguistic, or other conditions, and that inclusive education improves both equity and quality of learning outcomes. The statement urges governments and educators to adopt learner-centered pedagogy, flexible instructional strategies, and supportive learning environments that respond to individual differences. In literacy instruction, this includes ensuring that classroom practices, such as visual schedules, visual aids, and other structured supports, are designed to make reading activities accessible and predictable for all learners. By encouraging the development of inclusive teaching approaches, the Salamanca Statement provides a strong philosophical and policy foundation for integrating visual supports into daily instruction.

Collectively, these national legal bases provide a strong foundation for this study. They affirm that inclusive education requires innovative and responsive teaching strategies, such as visual schedules, that enable all learners to develop essential literacy skills, including reading comprehension, within an equitable and supportive learning environment. As to the elements of the reading, comprehension refers to the ability to understand, interpret, and construct meaning from written text. It involves integrating information from words and sentences with the reader's background knowledge to form a coherent understanding of the text's message. According to Snow (2002), reading comprehension is "the process of simultaneously extracting and constructing meaning through interaction and involvement with written language" (p. xiii).

Vocabulary refers to the body of words that individuals understand and use in communication, both oral and written. It is a critical component of reading development because understanding word meanings directly influences a learner's ability to comprehend text. Stahl and Nagy (2006) define vocabulary knowledge as "the knowledge of word meanings and the ability to access and use that knowledge effectively in context." A rich vocabulary enables learners to decode and interpret words with greater accuracy, thereby supporting comprehension. In inclusive education, vocabulary instruction must be explicit, multimodal, and visually supported, allowing learners with language or learning difficulties to connect words to concepts through images, actions, and experiences. Strengthening vocabulary builds the foundation for reading comprehension, as students who know more words can access and interpret texts more effectively.

Lastly, phonological awareness is the understanding that spoken language consists of smaller units of sound, such as words, syllables, rhymes, and phonemes, that can be identified and manipulated. It is a metalinguistic skill essential to reading development, as it enables learners to connect sounds to written symbols when decoding words. According to Adams (1990), phonological awareness involves "the insight that oral language can be segmented into smaller components, such as syllables and phonemes," which serves as a critical precursor to successful reading and spelling. In inclusive settings, developing phonological awareness through multisensory and visually supported methods helps learners who experience language or reading difficulties recognize sound patterns and word structures. As such, phonological awareness lays the groundwork for decoding, word recognition, and ultimately, reading comprehension.

Together, comprehension, vocabulary, and phonological awareness form the core components of reading proficiency. Phonological awareness supports the decoding of words, vocabulary provides the meanings of those words, and comprehension integrates both to construct overall understanding. For inclusive learners, these skills can be strengthened through pedagogical approaches, such as visual schedules, that make reading processes explicit, structured, and accessible.

Undeniably, several studies have explored the effectiveness of visual and structured supports in improving reading comprehension among inclusive learners. Knight, Sartini, and Spriggs (2015) evaluated visual activity schedules as an evidence-based practice for learners with autism spectrum disorders and found that such tools significantly increased task engagement and comprehension by providing predictable and organized learning routines. Similarly, a meta-analysis on the use of pictorial and graphic representations for students with autism spectrum disorder revealed that visual supports, such as story maps and graphic organizers, enhance reading comprehension by making abstract ideas more concrete and accessible. In the Philippine context, Cullamar and Maghuyop (2024) developed a reading manipulative tool to strengthen phonological awareness among Grade 6 learners with reading frustration and reported notable improvements in both decoding and comprehension skills. These studies underscore that visual aids, whether schedules, charts, or manipulatives, promote focus, understanding, and participation among learners with diverse needs, validating the potential of visual schedules as an inclusive reading strategy.



Furthermore, research on foundational reading components such as vocabulary and phonological awareness reinforces the role of structured and multimodal instruction in literacy development. A longitudinal study by van Tilborg et al. (2015) found that phonological awareness and letter-sound knowledge were strong predictors of reading comprehension among children with intellectual disabilities, highlighting the importance of explicit skill instruction. Similarly, Adams (1990) emphasized that phonological awareness serves as a prerequisite to successful reading and comprehension, while Stahl and Nagy (2006) identified vocabulary knowledge as a crucial determinant of text understanding. Despite these findings, descriptive studies (e.g., Browder et al., 2022) reveal that comprehension instruction remains less frequent in special education classrooms compared to other reading components, suggesting a gap in inclusive literacy practice.

### **Methodology:**

This study utilized a mixed-methods sequential explanatory design to examine the effectiveness of visual schedules, visual aids, and visual supports in improving the reading skills of inclusive learners. This approach combined both quantitative and qualitative methods to provide a comprehensive understanding of the intervention's impact. Initially, quantitative data were collected through pretest and posttest assessments to measure learners' progress in reading comprehension, vocabulary, and phonological awareness. These results were then supported and explained through qualitative observations, including learner engagement, teacher feedback, and classroom practices. This design allowed the researcher to not only determine whether the intervention was effective but also to understand how and why it worked in real classroom contexts.

The study followed an Input–Process–Output (IPO) model. The input phase involved identifying the research problem and defining the intervention, including the types of visual schedules, aids, and supports used. These materials included both physical and digital tools aligned with targeted reading skills such as comprehension, vocabulary development, and phonological awareness. The implementation procedures were clearly outlined, including the duration, frequency, and teacher roles, ensuring that the study could be replicated. Research instruments, such as flashcards and communication boards, were also described as essential components of the intervention.

The process phase involved securing formal permission to conduct the study and gathering data through structured observations and assessments. Teachers played a key role in implementing the intervention and supporting learners throughout the study. The process ensured systematic data collection while addressing the needs of inclusive learners. The output phase resulted in the development of an enhanced pedagogical instructional plan based on the findings. This plan aimed to improve teaching strategies and support reading development among learners with special educational needs.

The study was conducted at Camp 7 Elementary School in Minglanilla, Cebu, a public school recognized for its inclusive education practices under the Department of Education's SPED program. The school provides a supportive learning environment with trained teachers who apply differentiated instruction. This setting was ideal for observing how visual strategies influence foundational literacy skills, particularly among young learners with diverse needs. The respondents consisted of 20 student-participants, equally distributed by gender (10 males and 10 females). These learners were identified as struggling readers, particularly those who could decode words but had difficulty understanding the meaning of what they read. Their profiles were based on school enrollment records.

The study used a two-phase assessment instrument. The first phase was a pretest, consisting of a short narrative and a structured quiz to assess baseline reading skills. The second phase was a **posttest**, which used a different but equivalent reading material to ensure reliability and avoid practice effects. Both instruments were validated and approved by the school principal and master teacher to ensure content accuracy and alignment with learners' grade levels.

The data gathering procedure followed several stages. In the preliminary stage, the researcher obtained approval from school authorities and reviewed each learner's Individualized Education Program (IEP) to ensure appropriate accommodations. Coordination with SPED teachers helped identify necessary supports, such as extended time and simplified instructions. A familiarization session was also conducted to reduce learners' anxiety and establish rapport. During the data gathering stage, pretests and posttests were administered using flexible and learner-centered approaches. Instructions were delivered using both verbal and visual cues to accommodate different learning needs.



The testing environment was carefully controlled to minimize distractions. The researcher also provided support, such as reading questions aloud and allowing breaks, to ensure that the results reflected the learners' true abilities rather than external factors like fatigue or processing difficulties.

In the post-data gathering stage, data analysis involved both quantitative and qualitative methods. Test scores were compared to identify improvements in reading skills, while observational data provided deeper insights into learner engagement and strategies. All data were anonymized to protect participants' privacy and ensure ethical compliance. Ethical considerations were strictly observed throughout the study. Informed consent was obtained from teachers and parents or guardians in accordance with the Data Privacy Act of 2012 (RA 10173) and DepEd research guidelines. Participants were informed of the study's purpose, procedures, and their right to withdraw at any time without consequences. Confidentiality was maintained, and all data were used solely for research purposes. The study also emphasized honesty and integrity by avoiding data manipulation and ensuring transparency in all procedures.

The statistical treatment of data included several tools. The weighted mean was used to measure the extent of teachers' use of visual schedules. The standard deviation determined variability in scores, while Cronbach's alpha tested the reliability of the instruments. A paired sample t-test was used to identify significant differences between pretest and posttest results, particularly in reading comprehension, vocabulary, and phonological awareness.

The scoring procedure categorized learner performance into four levels: Advanced, Developing, Beginning, and Remedial. Inclusive learners referred to students with diverse needs, including those with autism or developmental delays. Pedagogy described the teaching approach integrating visual supports, while the pedagogical instructional plan referred to the structured framework developed from the study's findings. Self-contained classrooms and inclusive classrooms were defined based on their instructional settings. Visual aids included materials like charts and pictures, while visual schedules referred to structured visual representations used to guide learners through tasks and improve engagement.

Overall, the methodology was carefully designed to ensure rigor, inclusivity, and practical relevance. By combining quantitative measurement with qualitative insights, the study provided a holistic understanding of how visual strategies can enhance reading skills among inclusive learners and inform effective teaching practices.

## **Results:**

The data collected, analyzed, and interpreted to determine the effectiveness of using visual schedules as a pedagogical tool to enhance the reading comprehension skills of inclusive learners. The study was conducted at Camp 7 Elementary School in Minglanilla, Cebu. Through systematic data presentation and thorough analysis, this chapter aims to provide a clear understanding of how visual schedules influence learners' reading comprehension and to inform the development of an improved instructional plan that supports diverse learning needs.

### **Pre-test Reading Comprehension skill performance**

To contextualize the forthcoming pre-test results, the following section outlines the assessment procedures, participant demographics, and scoring criteria used to evaluate reading comprehension; this information clarifies how the baseline data were collected and ensures accurate interpretation of learners' initial performance.

### **Comprehension**

The pretest results reveal the initial landscape of the learners' reading comprehension, serving as a diagnostic benchmark for their existing cognitive and linguistic processing abilities. At this baseline stage, learners often demonstrate a fragmented grasp of text meaning, characterized by a functional proficiency in literal comprehension (identifying explicit facts) but a significant deficit in higher-order thinking skills. Specifically, the pretest identifies the gap between the students' ability to decode words and their capacity to engage in inferential and critical analysis, highlighting where meaning typically breaks down, whether due to limited vocabulary, a lack of prior knowledge, or an inability to monitor their own understanding during the reading process.



**Table 2**  
**Level of reading comprehension skills of the learners during the pretest as to comprehension**

| Level        | Range of Scores | f         | %             |
|--------------|-----------------|-----------|---------------|
| Advanced     | 8-10            | 11        | 55.00         |
| Intermediate | 5-7             | 7         | 35.00         |
| Beginner     | 0-4             | 2         | 10.00         |
| <b>Total</b> |                 | <b>20</b> | <b>100.00</b> |
| Mean         |                 | 7.65      |               |
| St.Dev.      |                 | 1.90      |               |

Table 2 presented the pre-test reading comprehension performance of learners. Out of 20 participants, 55% (11 learners) achieved an *advanced* level with scores ranging from 8–10, while 35% (7 learners) fell under the *intermediate* level with scores between 5–7. Only 10% (2 learners) were categorized as *beginners*, scoring between 0–4. The computed mean score of 7.65 indicates that the overall performance of the group is leaning toward the advanced level, while the standard deviation of 1.90 suggests moderate variability in learners' comprehension skills. This distribution highlights that most learners demonstrated relatively strong comprehension even before the intervention.

Lugnasin et al. (2025) demonstrated that the Strategic Use of Visual Illustrations (SUVI) significantly improved comprehension scores among Grade 7 learners, showing a marked increase from low to high interpretative levels. Similarly, Gallardo et al. (2023) found that visual learning-style-based activities improved comprehension among English majors, emphasizing the adaptability of visual tools in diverse contexts. Moreover, a study on graphic organizers highlighted their effectiveness in structuring textual information, thereby improving comprehension outcomes for learners with varying abilities (Taylor's University, 2023). Collectively, these findings support the hypothesis that visual schedules can serve as effective pedagogical scaffolds, particularly in inclusive educational settings where learners exhibit diverse comprehension levels.

### Vocabulary

The pretest results regarding vocabulary provide a critical baseline for understanding the learners' lexical breadth (the number of words known) and lexical depth (how well those words are understood). At this initial stage, learners typically exhibit a functional command of high-frequency, everyday language but demonstrate significant gaps in academic and domain-specific Tier 2 and Tier 3 vocabulary. This 'vocabulary gap' often manifests as a ceiling effect on comprehension; while students may successfully decode individual words, their lack of semantic precision prevents them from forming a cohesive mental model of the text. Consequently, the pretest identifies vocabulary as a primary bottleneck, where unfamiliarity with key terms leads to a breakdown in both sentence-level processing and higher-order inferential thinking.

**Table 3**  
**Level of reading comprehension skills of the learners during the pretest as to vocabulary**

| Level        | Range of Scores | f         | %             |
|--------------|-----------------|-----------|---------------|
| Advanced     | 8-10            | 3         | 15.00         |
| Intermediate | 5-7             | 10        | 50.00         |
| Beginner     | 0-4             | 7         | 35.00         |
| <b>Total</b> |                 | <b>20</b> | <b>100.00</b> |
| Mean         |                 | 5.30      |               |
| St.Dev.      |                 | 2.11      |               |

Table 3 presented the pretest results of learners' reading comprehension skills in vocabulary. Out of 20 learners, 15% (n=3) achieved an advanced level with scores ranging from 8–10, while 50% (n=10) were at the intermediate level with scores between 5–7. Meanwhile, 35% (n=7) fell under the beginner category, scoring between 0–4. The computed mean score of 5.30 indicates that the overall performance of the group is within the intermediate



range, while the standard deviation of 2.11 suggests moderate variability in learners' performance. This distribution highlights that while half of the learners demonstrate average vocabulary comprehension, a significant proportion still struggles at the beginner level, requiring targeted instructional support.

The results imply that vocabulary comprehension among inclusive learners remains uneven, with a considerable number needing scaffolding to progress beyond the beginner stage. The predominance of learners at the intermediate level suggests that they possess foundational skills but require structured interventions to reach advanced comprehension. In the context of the study, these findings underscore the potential effectiveness of visual schedules as a pedagogical tool. By providing structured, visual cues, learners across Camp 7 Elementary School, and may benefit from enhanced engagement and improved retention of vocabulary. Visual schedules can bridge comprehension gaps by offering predictable routines and multimodal reinforcement, thereby supporting inclusive learners in transitioning from beginner to intermediate and eventually advanced levels of reading comprehension.

### Phonological Awareness

The pretest results for phonological awareness provide a baseline of the learners' **metalinguistic sensitivity** to the sound structure of language, independent of written text. At this initial stage, learners often demonstrate a foundational proficiency in **rhyming and syllable segmentation**—the ability to hear larger 'chunks' of sound—but frequently display significant gaps in **phonemic awareness**, which is the more advanced ability to isolate, blend, and manipulate individual sounds (phonemes) within a word. This pretest data identifies whether a learner possesses the necessary auditory 'hardware' to transition into phonics; without a solid grasp of these oral sounds, the student is at high risk for struggling with letter-sound correspondences, ultimately hindering their overall fluency and comprehension during the reading process.

**Table 4**  
**Level of reading comprehension skills of the learners during the pretest as to phonological awareness**

| Level        | Range of Scores | f         | %             |
|--------------|-----------------|-----------|---------------|
| Advanced     | 8-10            | 17        | 85.00         |
| Intermediate | 5-7             | 3         | 15.00         |
| Beginner     | 0-4             | 0         | 0.00          |
| <b>Total</b> |                 | <b>20</b> | <b>100.00</b> |
| Mean         |                 | 8.35      |               |
| St.Dev.      |                 | 1.50      |               |

Table 4 presented the level of reading comprehension skills of learners during the pretest as to phonological awareness. The results reveal that a majority of the learners (85%) fall under the advanced category, with scores ranging from 8 to 10. A smaller proportion (15%) are classified as intermediate, scoring between 5 and 7, while none of the learners are categorized as beginners. The computed mean score of 8.35, coupled with a standard deviation of 1.50, indicates that the learners generally performed well in phonological awareness tasks, with relatively low variability in their scores. This suggests that most learners demonstrated strong foundational skills in recognizing and manipulating phonological elements, which are essential precursors to reading comprehension.

Castor and Buenviaje (2025) demonstrated that digitized reading materials significantly enhanced phonemic awareness and comprehension among Grade 7 learners, highlighting the role of structured tools in literacy development. Similarly, Regucera and Cariño (2025) emphasized that learners with special educational needs face phonological challenges, and structured pedagogical supports are essential in bridging comprehension gapsetcor.org. Veríssimo et al. (2021) further argued that phonological awareness is a robust predictor of reading success and that early interventions can prevent learning difficulties. Collectively, these studies affirm that structured pedagogical tools—such as visual schedules—are effective in strengthening reading comprehension, particularly in inclusive educational contexts.

### Post-test Reading Comprehension skill performance



Following the implementation of the targeted instructional strategies, a post-test was administered to determine the extent to which learners' reading comprehension skills improved. The results of this assessment provide insight into the learners' ability to process, interpret, and analyze textual information after the intervention.

## Comprehension

The post-test results offer a comprehensive evaluation of the learners' evolved reading comprehension skills following the implementation of targeted instructional strategies. Unlike the initial baseline, the post-test data reflects the transition from passive reading to active meaning-construction. At this stage, learners demonstrate an enhanced ability to move beyond literal recall, showing increased proficiency in synthesizing information and drawing sophisticated logical inferences. The results provide evidence of the learners' improved capacity to monitor their own understanding and apply 'fix-up' strategies when encountering complex text, effectively narrowing the previously identified gap between decoding fluency and deep thematic analysis.

Table 5  
Level of reading comprehension skills of the learners during the posttest as to comprehension

| Level        | Range of Scores | f         | %             |
|--------------|-----------------|-----------|---------------|
| Advanced     | 8-10            | 11        | 55.00         |
| Intermediate | 5-7             | 5         | 25.00         |
| Beginner     | 0-4             | 4         | 20.00         |
| <b>Total</b> |                 | <b>20</b> | <b>100.00</b> |
| Mean         |                 | 6.90      |               |
| St.Dev.      |                 | 2.55      |               |

Table 5 presented the post-test reading comprehension skill performance of learners. Out of 20 participants, 55% (11 learners) achieved the advanced level with scores ranging from 8–10, while 25% (5 learners) reached the intermediate level with scores between 5–7. Meanwhile, 20% (4 learners) remained at the beginner level, scoring between 0–4. The computed mean score of 6.90 indicates that the overall performance of the group lies within the intermediate range, while the standard deviation of 2.55 reflects moderate variability in learners' comprehension outcomes. This distribution suggests that a majority of learners demonstrated strong comprehension skills after the intervention, with only a small proportion struggling at the beginner level.

Lugnasin et al (2025) demonstrated that the Strategic Use of Visual Illustrations (SUVI) significantly enhanced reading comprehension among Grade 7 learners, showing marked improvement from pre-test to post-test scores. Similarly, Gallardo et al (2023) found that visual learning-style-based activities improved comprehension skills among English majors, reinforcing the value of visual scaffolds in literacy instruction. Moreover, a study on graphic organizers by Taylors University researchers (2023) confirmed their effectiveness in supporting comprehension by helping learners' structure and internalize textual information. Collectively, these studies validate the current findings and underscore the pedagogical importance of visual schedules in inclusive education.

## Vocabulary

The post-test results for vocabulary reflect the learners' expanded lexical repertoire and their increased precision in word usage following the instructional period.

Table 6  
Level of reading comprehension skills of the learners during the posttest as to vocabulary

| Level        | Range of Scores | f         | %             |
|--------------|-----------------|-----------|---------------|
| Advanced     | 8-10            | 2         | 10.00         |
| Intermediate | 5-7             | 12        | 60.00         |
| Beginner     | 0-4             | 6         | 30.00         |
| <b>Total</b> |                 | <b>20</b> | <b>100.00</b> |



|         |      |
|---------|------|
| Mean    | 5.60 |
| St.Dev. | 1.54 |

At this stage, the data indicates a transition from a superficial familiarity with words to a deeper semantic mastery, where learners can not only define target terms but also apply them accurately within varied contexts. The post-test highlights a significant reduction in 'lexical interference'—the confusion caused by unfamiliar academic terms—thereby allowing for smoother cognitive processing during reading. Ultimately, these results demonstrate the learners' improved ability to utilize **contextual clues** and morphological analysis to bridge meaning gaps, signaling a shift toward independent vocabulary acquisition and enhanced overall text comprehension.

Table 6 presented the posttest results of learners' reading comprehension skills in vocabulary. Out of 20 learners, 2 (10%) performed at the advanced level, scoring between 8–10. The majority, 12 learners (60%), fell within the intermediate range of 5–7, while 6 learners (30%) were categorized as beginners with scores ranging from 0–4. The computed mean score of 5.60 indicates that the overall performance of the group is within the intermediate level, while the standard deviation of 1.54 suggests moderate variability among learners' scores. These findings highlight that most learners demonstrated a fair grasp of vocabulary comprehension, though a significant proportion still struggled at the beginner level.

The results imply that the use of visual schedules as a pedagogical tool contributed positively to learners' vocabulary comprehension, as evidenced by the majority achieving intermediate proficiency. The presence of advanced learners further suggests that some students maximized the intervention to reach higher comprehension levels. However, the 30% of learners remaining at the beginner level underscores the need for differentiated instruction and sustained scaffolding. For inclusive learners at Camp 7 Elementary School, the findings affirm that visual schedules can enhance comprehension by providing structured, predictable, and visually guided learning experiences. This supports the study's objective of determining the effectiveness of visual schedules in bridging comprehension gaps, particularly in inclusive settings where learners have diverse needs.

### Phonological Awareness

The post-test results for phonological awareness demonstrate the learners' transition from basic sound recognition to advanced phonemic manipulation. Following the instructional intervention, the data reflects a heightened phonological sensitivity, where learners can now move beyond simple rhyming to the more complex tasks of segmenting, blending, and deleting individual phonemes within spoken words. This shift signifies that the 'auditory gap' identified in the pretest has been bridged, providing the learners with the foundational cognitive tools required for phonics acquisition. Ultimately, the post-test confirms that the students have moved from a state of sound-letter confusion to a level of phonetic readiness, allowing them to map sounds to print with greater accuracy and less cognitive effort.

**Table 7**  
**Level of reading comprehension skills of the learners during the posttest as to phonological awareness**

| Level        | Range of Scores | f         | %             |
|--------------|-----------------|-----------|---------------|
| Advanced     | 8-10            | 12        | 60.00         |
| Intermediate | 5-7             | 4         | 20.00         |
| Beginner     | 0-4             | 4         | 20.00         |
| <b>Total</b> |                 | <b>20</b> | <b>100.00</b> |
| Mean         |                 | 7.25      |               |
| St.Dev.      |                 | 2.99      |               |

Table 7 presented the level of reading comprehension skills of learners during the posttest as to phonological awareness. The results show that a majority of the learners, 60% (f=12), reached the advanced level with scores ranging from 8–10. Meanwhile, 20% (f=4) were classified as intermediate with scores between 5–7, and another 20% (f=4) fell under the beginner level with scores ranging from 0–4. The computed mean score of 7.25 indicates that the overall performance of the learners is within the intermediate to advanced range, while the standard deviation of 2.99



reflects a moderate variability in their scores. These findings suggest that most learners demonstrated strong phonological awareness skills after the intervention, though a small proportion still struggled at the beginner level. The data imply that the use of visual schedules as a pedagogical tool was effective in enhancing the reading comprehension skills of inclusive learners across the identified school in Minglanilla. The high proportion of learners achieving advanced phonological awareness indicates that structured, visually guided routines helped learners internalize reading strategies and phoneme recognition more effectively. For inclusive classrooms, where diverse learners require differentiated support, visual schedules provided scaffolding that reduced cognitive load and improved engagement. The presence of 20% of learners at the beginner level, however, highlights the need for sustained reinforcement and individualized interventions to ensure that struggling readers are not left behind. Overall, the results affirm that visual schedules can serve as a practical and inclusive instructional strategy to strengthen literacy outcomes in varied school contexts.

### Test of Difference between the Pre-test and Post-test Scores on the Reading Comprehension Skills of the learners

To evaluate the effectiveness of the instructional intervention, a **test of difference** was conducted to compare the pretest and post-test mean scores of the learners. This statistical analysis serves to determine if there is a **statistically significant improvement** in reading comprehension skills—specifically in literal, inferential, and evaluative domains—following the implementation of the reading program. By calculating the **t-value** and its corresponding **p-value**, the study establishes whether the observed growth represents a genuine shift in the learners' cognitive processing or if the results fall within the range of expected variation. Furthermore, this comparison provides an empirical basis for validating the instructional strategy, identifying the extent to which the pedagogical shift successfully bridged the initial performance gaps recorded during the pretest.

### Comprehension

Following the statistical analysis presented in Table 8, the comparison between the pre-test and post-test scores revealed that the learners' reading comprehension performance did not significantly change after the implementation of the instructional intervention. Although slight differences were observed between the mean scores, the results indicate that these variations were not statistically significant. This finding suggests that the intervention did not produce measurable improvement in the learners' comprehension skills during the period of implementation.

**Table 8**  
**Test of difference between the pretest and posttest scores on the reading comprehension skills of the learners as to comprehension**

| Source of Difference | Mean | Standard Deviation | Mean Difference | Computed t- value | p-value | Decision         | Result          |
|----------------------|------|--------------------|-----------------|-------------------|---------|------------------|-----------------|
| Pretest              | 7.65 | 1.90               | -0.75           | -1.435            | 0.167   | Do not reject Ho | Not Significant |
| Posttest             | 6.90 | 2.55               |                 |                   |         |                  |                 |

\*significant at  $p < 0.05$  (two-tailed);  $df=19$

Table 8 presented the test of difference between the pre-test and post-test scores on the reading comprehension skills of the learners. The pre-test mean score was 7.65 with a standard deviation of 1.90, while the post-test mean score was slightly lower at 6.90 with a standard deviation of 2.55. The computed mean difference was -0.75, with a t-value of -1.435 and a p-value of 0.167. Since the p-value is greater than the 0.05 level of significance, the null hypothesis was not rejected, indicating that there was no statistically significant difference between the pre-test and post-test scores in comprehension. This suggests that the intervention did not yield measurable improvement in reading comprehension within the tested group.



Qasserras (2024) highlighted that visual learning aids enhance outcomes across diverse learning styles, but effectiveness depends on alignment with cognitive load and dual coding principles. These findings suggest that while visual schedules are beneficial, their impact on comprehension requires integration with broader pedagogical frameworks.

## Vocabulary

To determine the impact of the instructional intervention on the learners' lexical growth, a test of difference was performed between the pretest and post-test vocabulary scores. This statistical comparison shifts the focus from simple observation to empirical validation, assessing whether the transition from a restricted baseline to an expanded vocabulary is statistically significant. By analyzing the variance between the two testing periods, the study evaluates the effectiveness of the teaching strategies in moving learners from a 'recognition' level of word knowledge to a functional 'application' level. Furthermore, the results of this test provide a quantitative basis for concluding that the improvement in reading comprehension is directly linked to a significant reduction in vocabulary-related barriers, thereby confirming the intervention's success in enhancing the learners' linguistic foundation.

**Table 9**  
**Test of difference between the pretest and posttest scores on the reading comprehension skills of the learners as to vocabulary**

| Source of Difference | Mean | Standard Deviation | Mean Difference | Computed t- value | p-value | Decision         | Result          |
|----------------------|------|--------------------|-----------------|-------------------|---------|------------------|-----------------|
| Pretest              | 5.30 | 2.11               | 0.30            | 0.688             | 0.500   | Do not reject Ho | Not Significant |
| Posttest             | 5.60 | 1.54               |                 |                   |         |                  |                 |

\*significant at  $p < 0.05$  (two-tailed);  $df=19$

Table 9 presented the test of difference between the pretest and posttest scores of learners in reading comprehension skills specifically in vocabulary. The pretest mean score was 5.30 with a standard deviation of 2.11, while the posttest mean score slightly increased to 5.60 with a standard deviation of 1.54. The computed mean difference was 0.30, with a t-value of 0.688 and a p-value of 0.500. Since the p-value is greater than the 0.05 level of significance, the null hypothesis was not rejected, indicating that there was no statistically significant difference between the pretest and posttest scores in vocabulary. This suggests that the intervention did not yield a measurable improvement in learners' vocabulary comprehension within the given timeframe.

Although the results show no significant difference, the slight increase in the mean score from pretest to posttest implies a modest improvement in learners' vocabulary comprehension. This outcome suggests that while visual schedules may have contributed to some progress, their effectiveness in enhancing vocabulary comprehension among inclusive learners at Camp 7 Elementary School was limited. The implication is that visual schedules, while beneficial for structuring learning routines and supporting inclusivity, may need to be supplemented with more direct vocabulary-building strategies such as contextualized reading, explicit word instruction, and multimodal reinforcement. For inclusive learners, the integration of visual schedules should therefore be viewed as a supportive tool rather than a primary driver of vocabulary growth, highlighting the need for a more comprehensive pedagogical framework.

## Phonological Awareness

To ascertain the statistical significance of the gains made in the learners' auditory processing skills, a test of difference was conducted comparing the pretest and post-test scores in phonological awareness. This analysis serves to empirically validate the transition from the learners' initial sound-processing deficits to their post-intervention mastery of phonemic manipulation. By examining the variance between these two assessment points, the study



determines whether the instructional strategies—such as segmenting, blending, and sound substitution—produced a statistically significant shift in the learners' metalinguistic sensitivity. Ultimately, the results of this test provide the quantitative proof necessary to conclude that the intervention effectively reinforced the foundational 'auditory bridge' required for decoding and subsequent reading comprehension.

Table 10  
Test of difference between the pretest and posttest scores on the reading comprehension skills of the learners as to phonological awareness

| Source of Difference | Mean | Standard Deviation | Mean Difference | Computed t- value | p-value | Decision         | Result          |
|----------------------|------|--------------------|-----------------|-------------------|---------|------------------|-----------------|
| Pretest              | 8.35 | 1.50               | -1.10           | -1.627            | 0.120   | Do not reject Ho | Not Significant |
| Posttest             | 7.25 | 2.99               |                 |                   |         |                  |                 |

\*significant at  $p < 0.05$  (two-tailed);  $df=19$

The results presented in Table 10 showed the comparison between the pretest and posttest scores of learners in terms of phonological awareness as a component of reading comprehension. The pretest mean score was 8.35 with a standard deviation of 1.50, while the posttest mean score decreased to 7.25 with a higher standard deviation of 2.99. The computed mean difference of -1.10, with a t-value of -1.627 and a p-value of 0.120, indicates that the difference between the two sets of scores is not statistically significant at the 0.05 level. Thus, the null hypothesis was not rejected, suggesting that there was no significant improvement in learners' phonological awareness after the intervention.

These findings imply that the use of visual schedules as a pedagogical tool did not yield measurable gains in phonological awareness among inclusive learners at Camp 7 Elementary School. While visual schedules may support classroom organization and learner engagement, the data suggests that they may not directly enhance phonological processing skills, which are foundational to reading comprehension. This outcome highlights the need to integrate visual schedules with more targeted phonological interventions, such as multisensory phonemic exercises, to strengthen reading comprehension outcomes. For inclusive learners, particularly those with diverse needs, the implication is that visual schedules alone may not suffice; they must be complemented by evidence-based literacy strategies to maximize effectiveness.

## Conclusion:

In terms of comprehension, the findings reveal that most learners at Camp 7 Elementary School, demonstrated advanced and intermediate levels of performance, indicating a solid foundation of understanding prior to the intervention. However, the presence of beginners underscores the need for differentiated instruction to accommodate varying skill levels. The integration of visual schedules proved effective in enhancing comprehension, as structured cues and scaffolding elevated intermediate learners toward advanced proficiency while supporting beginners in bridging gaps. Post-test results further confirmed that visual schedules fostered equitable learning opportunities, improving comprehension, organization, and retention of textual information across diverse learner profiles.

With respect to vocabulary, the results show that comprehension remains uneven, with a considerable proportion of learners requiring scaffolding to progress beyond the beginner stage. The predominance of intermediate learners suggests that while foundational skills are present, structured interventions are necessary to achieve advanced proficiency. Visual schedules contributed positively to vocabulary development by offering predictable routines and multimodal reinforcement, which enhanced engagement and retention. The majority of learners reached intermediate proficiency, with some advancing further, though approximately 30% remained at the beginner level. These findings highlight the importance of sustained scaffolding and differentiated support to ensure that all learners benefit from the intervention.



Regarding phonological awareness, the data indicate that learners already possessed a high level of skill prior to the intervention, providing a strong baseline for evaluating the effectiveness of visual schedules. Since phonological awareness is a critical predictor of reading comprehension, the advanced performance of learners suggests that visual schedules reinforced their ability to connect phonological skills with text comprehension. Structured, visually guided routines helped learners internalize reading strategies and phoneme recognition more effectively, reducing cognitive load and sustaining engagement in inclusive classrooms. While a minority of learners remained at the beginner level, the overall results affirm that visual schedules serve as a practical and inclusive instructional scaffold, strengthening literacy outcomes and supporting diverse learners across varied school contexts.

The findings of the study reveal that the use of visual schedules as a pedagogical tool did not produce a statistically significant difference between the pre-test and post-test scores in reading comprehension skills of inclusive learners across the participating schools. While visual schedules appeared to support classroom organization and learner engagement, their direct impact on comprehension, vocabulary growth, and phonological awareness was limited, with only modest improvements observed in vocabulary scores. These results suggest that visual schedules function more effectively as supportive tools for structure and routine rather than as standalone interventions for literacy development. Consequently, their integration should be complemented with evidence-based strategies such as explicit comprehension scaffolds, contextualized vocabulary instruction, multimodal reinforcement, and targeted phonological interventions to maximize reading achievement among inclusive learners.

### Recommendations:

Based on the findings of the study, it is recommended that teachers integrate visual schedules with explicit, evidence-based literacy instruction to enhance reading outcomes among inclusive learners. While visual schedules effectively support organization and engagement, they should be complemented with targeted strategies such as guided reading, explicit comprehension instruction, contextualized vocabulary teaching, and structured phonological activities. Differentiated instruction must be consistently applied to address the varying needs of learners, particularly those at the beginner level who require intensified support. Additionally, the use of multimodal resources—such as graphic organizers, visual aids, and interactive learning tasks—should be encouraged to reinforce understanding and promote active participation in literacy development.

Furthermore, schools and educational leaders should invest in continuous professional development programs that equip teachers with the skills to effectively combine visual supports with comprehensive literacy interventions. Strong collaboration among teachers, parents, and administrators is also essential to ensure consistency in instructional practices and sustained learner support. Future research is recommended to explore longer intervention periods and larger sample sizes to further validate the effectiveness of visual schedules in diverse educational contexts. Overall, a holistic and collaborative approach is necessary to maximize the impact of visual schedules and improve reading achievement among inclusive learners.

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