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Visual Supports and Reading Accuracy in Inclusive Learning Contexts

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Abstract:

This study examined the effectiveness of visual schedules as a pedagogical tool in enhancing literacy outcomes among inclusive learners at Buaya Elementary School. Pre-intervention results revealed that most learners demonstrated intermediate comprehension skills, with only a small proportion achieving advanced proficiency. Following the integration of visual schedules, significant improvements were observed in reading comprehension, vocabulary acquisition, and phonological awareness. Learners progressed from beginner and intermediate levels to advanced proficiency, with 85% attaining intermediate or advanced comprehension post-intervention. The structured, predictable, and visually guided nature of schedules provided scaffolding that reduced cognitive load, reinforced sequential learning, and fostered consistency, thereby supporting decoding, sequencing, and meaning retention. These findings affirm the role of multimodal instructional approaches in bridging comprehension gaps, promoting equity, and advancing literacy development in inclusive classrooms. Based on these outcomes, recommendations include strengthening teacher training programs, conducting awareness campaigns, prioritizing the development of instructional resources, embedding visual schedules into the curriculum, establishing monitoring and evaluation systems, implementing capacity-building workshops, and pursuing policy support for institutionalization. Overall, the study validates visual schedules as an effective, equitable, and sustainable instructional strategy that aligns with institutional goals for literacy advancement and inclusive education.

Keywords: *Special Education, Visual schedules, Inclusive education, Reading comprehension, Vocabulary acquisition, Phonological awareness, Mixed method, Lapu-Lapu City, Cebu*

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 with maintaining focus, organizing tasks, and understanding 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 such as visual aids, pedagogical visual instruction, and visual supports 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 can 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, promoting engagement and self-regulation.
Additionally, using 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, 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 in Quintero, Baldiris, Rubira, Cerón, and Velez (2019) in the study by Dettmer et al. (2013).

On the other side, the need for locally grounded research is 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 (e.g., regionally collated Phil-IRI results reported 20% failing in reading comprehension and about 25% classified as struggling readers in the 2022–2023 cycle).

Moreover, international assessments and local studies have highlighted persistent challenges in reading proficiency among Filipino students, particularly for populations who are socioeconomically disadvantaged or have special educational needs. Although research in the Philippines has explored visual learning and the use of visual aids (for example, studies on visual learning performance in Cebu and recent local investigations into visual-themed reading interventions), there is still a notable gap: few studies have systematically measured the direct effect 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 addresses that gap and will produce locally relevant empirical evidence on whether — and to what extent — visual scheduling and supports improve reading comprehension and self- regulation for learners with diverse needs.

The findings are expected to yield actionable recommendations for DepEd practice and school-level instructional planning (e.g., scalable visual-support templates, teacher-training foci, and monitoring tools) that directly support inclusive literacy goals in the Philippine basic education system. Despite the recognized benefits of visual supports in inclusive education globally, a critical research gap persists in the Philippine context. While international studies have documented the effectiveness of visual schedules for learners with special educational needs, few investigations have systematically examined how structured visual schedules directly impact reading comprehension outcomes among Filipino inclusive learners in public school settings. Existing local research has primarily focused on general visual aids or learning styles but has not rigorously measured the specific contribution of visual scheduling frameworks to literacy development across diverse learner populations.

Furthermore, there is limited empirical evidence on how visual schedules can be integrated into standardized reading instruction protocols within the constraints and realities of Philippine public schools, particularly in resource- limited contexts. This study addresses these gaps by providing the first systematic, quantitative assessment of visual schedules as a pedagogical intervention specifically designed to enhance reading comprehension among inclusive learners at Buaya Elementary School. Unlike previous studies that examined visual aids broadly, this research isolates the effect of structured visual schedules on measurable literacy outcomes, reading comprehension, vocabulary acquisition, and phonological awareness, using pre- and post-intervention assessments. By focusing on a public elementary school context, the study generates locally relevant, context-specific evidence that can inform practical implementation strategies for teachers and administrators.

The contributions of this study are threefold. First, it provides empirical validation of visual schedules as an effective, scalable intervention for improving literacy outcomes in Philippine inclusive classrooms, directly supporting DepEd's inclusive education and literacy advancement goals. Second, it offers actionable insights for curriculum integration, teacher training, and resource development by demonstrating how visual schedules reduce cognitive load, support sequential learning, and foster learner independence. Third, the study establishes a foundation for policy recommendations and institutional adoption, presenting visual schedules not merely as supplementary tools but as essential components of equitable, evidence-based literacy instruction. Ultimately, this research helps bridge the gap between international best practices and local educational realities, ensuring that inclusive learners in Philippine public schools receive the structured, multimodal support necessary for academic success.

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 comprehension, vocabulary development, and phonological awareness.This study is anchored on three foundational theories and key legislative frameworks that collectively support the use of visual schedules as an effective pedagogical tool for inclusive learners.

Dual Coding Theory. Dual Coding Theory, proposed by Allan Paivio (1971, 1986), explains that learning is more effective when information is processed through two interconnected cognitive systems: the verbal system, which processes language-based input, and the non-verbal or visual system, which processes imagery and symbolic representations. According to Paivio, when learners receive information in both verbal and visual forms, they create dual mental representations that strengthen comprehension, retention, and retrieval. The theory posits that these two systems, while functionally independent, work together to enhance learning outcomes, particularly when both channels are activated simultaneously.In reading instruction, visual schedules operationalize Dual Coding Theory by pairing text-based directions with images, icons, or graphic organizers that illustrate each stage of the learning task. This dual presentation is particularly beneficial for inclusive learners, as the visual cues reinforce verbal instructions, reduce ambiguity, and support students who struggle with processing lengthy or abstract verbal information. By engaging both the verbal and visual cognitive channels, visual schedules enhance encoding, facilitate meaning-making, and improve long-term memory retention. For learners with reading difficulties, language delays, or cognitive disabilities, the visual component serves as a scaffold, bridging gaps in verbal comprehension and promoting independent engagement with literacy tasks.

Cognitive Load Theory. Cognitive Load Theory, developed by John Sweller (1988), explains that working memory has limited capacity and that effective instructional design should minimize extraneous cognitive load to optimize learning. Sweller identifies three types of cognitive load: intrinsic load (inherent difficulty of the material), extraneous load (imposed by poor instructional design), and germane load (mental effort devoted to schema construction and learning). The theory emphasizes that instruction should reduce extraneous load and manage intrinsic load to free cognitive resources for germane processing.Visual schedules reduce cognitive load by breaking down complex reading tasks into smaller, sequential, and visually represented steps. This structured approach prevents cognitive overload, particularly for inclusive learners who may experience difficulties with executive functioning, attention regulation, or information processing. By externalizing the sequence of activities and providing clear visual cues, visual schedules free up working memory resources that learners can then allocate to higher-order comprehension processes such as making inferences, analyzing text structure, and constructing meaning. The predictability and consistency of visual schedules further reduce anxiety and cognitive strain, creating a more conducive learning environment. For inclusive learners, this reduction in extraneous load is critical, as it allows them to focus cognitive effort on understanding content rather than navigating unclear or overwhelming instructional demands.

Universal Design for Learning (UDL). Universal Design for Learning, a framework developed by the Center for Applied Special Technology (CAST), emphasizes providing multiple means of representation, engagement, and expression to accommodate diverse learners. UDL principles advocate for flexible, proactive instructional approaches that remove barriers and ensure equitable access to learning for all students, regardless of ability, background, or learning style. The framework is grounded in neuroscience research and recognizes that learners differ in how they perceive, comprehend, engage with, and express their understanding of information.Visual schedules align with UDL by offering an alternative mode of representation that complements traditional text-based instruction. They provide learners with varied entry points into literacy activities, support differentiated instruction, and promote learner autonomy by making expectations, routines, and task sequences explicit and accessible. For inclusive learners, visual schedules embody the UDL principle of proactive design, ensuring that instructional materials are inherently accessible rather than requiring retrofitting or individual accommodation. By integrating visual schedules into reading instruction, educators create a more inclusive learning environment that anticipates and addresses diverse needs, thereby reducing barriers to comprehension and fostering equitable participation.

Republic Act No. 11650. Republic Act No. 11650, also known as the "Act Instituting a Policy of Inclusion and Services for Learners with Disabilities in Support of Inclusive Education," was signed into law in the Philippines in 2021. This landmark legislation mandates that all learners with disabilities have the right to quality education in the

least restrictive environment. RA 11650 requires educational institutions to implement reasonable accommodations, provide appropriate instructional materials, adopt inclusive pedagogical strategies, and ensure that learners with disabilities can participate fully in all aspects of school life.The law emphasizes the importance of individualized support, teacher training, and the use of evidence-based interventions to address learners' diverse needs. Visual schedules, as structured and accessible instructional tools, directly support compliance with RA 11650 by providing an evidence-based strategy that promotes participation, comprehension, and independence among learners with disabilities and other inclusive learners. By integrating visual schedules into reading instruction, schools operationalize RA 11650's principles, ensuring that inclusive learners receive the scaffolding and support they need to succeed in mainstream classrooms.

United Nations Convention on the Rights of Persons with Disabilities (UNCRPD, 2006). The United Nations Convention on the Rights of Persons with Disabilities, adopted in 2006 and ratified by the Philippines in 2008, affirms the right of persons with disabilities to inclusive education at all levels. Article 24 of the UNCRPD calls on state parties to ensure that persons with disabilities can access inclusive, quality education on an equal basis with others, in environments that maximize academic and social development. The Convention emphasizes the need for reasonable accommodations, individualized support, and the removal of barriers that hinder full and effective participation in education. Visual schedules operationalize the commitments of the UNCRPD by providing a practical, scalable intervention that enhances accessibility and supports diverse learning needs within mainstream classrooms. By making instructional routines and literacy tasks visually explicit, visual schedules reduce barriers to comprehension and enable inclusive learners to engage more fully with reading instruction. This aligns with the UNCRPD's vision of inclusive education as a fundamental right and a means of promoting dignity, autonomy, and full participation in society.

Salamanca Statement and Framework for Action on Special Needs Education (UNESCO, 1994). The Salamanca Statement and Framework for Action on Special Needs Education, adopted by UNESCO in 1994, represents a landmark commitment to inclusive education worldwide. The Statement advocates for inclusive schools that accommodate all children regardless of their physical, intellectual, social, emotional, linguistic, or other conditions. It emphasizes that inclusive schools are the most effective means of combating discriminatory attitudes, building an inclusive society, and achieving education for all.The Salamanca Framework calls for flexible curricula, adaptive teaching strategies, supportive learning environments, and the use of appropriate instructional materials and methods. Visual schedules exemplify these principles by offering a flexible, adaptive, and universally beneficial instructional strategy that fosters inclusion, reduces barriers to learning, and promotes equity in literacy instruction. By implementing visual schedules, educators honor the Salamanca Statement's call for a child-centered pedagogy that meets diverse needs and ensures that all learners, including those with special educational needs, receive a quality education in inclusive settings.

Statement of the Problem

This experimental study aimed to assess the effectiveness of using visual schedules as a pedagogical tool in enhancing the reading comprehension skills of inclusive learners at Buaya Elementary School during the school year 2025-2026, as a basis for developing an enhanced pedagogical instructional plan.

Specifically, it seeks to answer the following research questions:

1. What are the respondents' pre-post test scores in the reading comprehension skills as measured by:
1.1 comprehension;
1.2 vocabulary; and
1.3 phonological awareness?
2. Is there a significant difference between the respondents' pre-test and post- test scores in reading comprehension skills after the use of visual schedules?
3. Based on the findings of the study, what pedagogical instructional plan can be proposed for inclusive learners at Buaya Elementary School?

Statement of the Hypothesis

Ho: There is no significant difference between the respondents' pre-test and post-test scores in reading comprehension skills (comprehension, vocabulary, and phonological awareness) after the use of visual schedules.

Methodology:

This study employed a **One-Group Pretest–Posttest Design** to determine the effectiveness of visual-based instructional strategies in improving reading comprehension, vocabulary, and phonological awareness among inclusive learners. A single group of participants was assessed before and after the intervention to measure learning gains. Pretests established baseline literacy skills using validated reading materials and structured assessments. The intervention consisted of structured literacy instruction incorporating visual schedules, visual aids, and phonological activities delivered over a specified period. Posttests, using equivalent instruments, were administered to evaluate improvements. Data were analyzed using mean, standard deviation, and paired-sample t-test to determine the significance of differences between pretest and posttest scores.The study followed an **input–process–output framework**. The input included identification of learners with reading difficulties and the use of visual instructional materials aligned with literacy skills. The process involved securing permissions, administering pretests, implementing the intervention, and conducting posttests with monitoring for fidelity. The output of the study was an enhanced instructional plan for literacy development based on the findings.The research was conducted at Buaya Elementary School, Lapu-Lapu City, Cebu, a public school implementing inclusive education policies. The school provides a supportive environment with trained teachers, inclusive classrooms, and literacy-focused programs aligned with DepEd standards. This setting ensured the practical application of the intervention in a real classroom context.

The respondents consisted of 20 inclusive learners identified with reading comprehension difficulties based on Phil-IRI results and teacher recommendations. Participation required parental consent and enrollment in the inclusive education program.

Research instruments included validated pretest and posttest reading passages with corresponding comprehension, vocabulary, and phonological awareness assessments. These were reviewed and approved by school authorities to ensure content validity and appropriateness.

Data gathering followed three phases: preparation (securing permissions, validating instruments, and scheduling), implementation (pretest, intervention, and posttest), and post-data collection (tabulation, analysis, and interpretation). Ethical standards were strictly observed, including informed consent, confidentiality, and compliance with the Data Privacy Act of 2012 (RA 10173) and DepEd research guidelines.

Statistical tools used included weighted mean, standard deviation, Cronbach's alpha for reliability, and paired-sample t-test to determine significant differences. A four-point rating scale was used to interpret learners' performance levels in reading comprehension, phonological awareness, and vocabulary, ranging from remedial to advanced.

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 at Buaya Elementary School in Lapu-Lapu City, Cebu, during the school year 2025–2026. 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 enhanced pedagogical instructional plan that supports diverse learning needs at Buaya ElementarySchool.

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 revealed 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	Frequency	Percentage
Advanced	8-10	2	10.00
Intermediate	5-7	14	70.00
Beginner	0-4	4	20.00
Total		20	100.00
Mean		5.40	
St.Dev.		1.39	

Table 2 presented the level of reading comprehension skills of learners during the pretest. The distribution shows that a majority of the learners, 70% (f = 14), fall under the Intermediate category with scores ranging from 5–7. Meanwhile, 20% (f = 4) are classified as Beginner, scoring between 0–4, and only 10% (f = 2) reached the Advanced level with scores of 8–10. The computed mean score of 5.40 indicates that the overall performance of the learners is situated within the intermediate range, while the standard deviation of 1.39 suggests a relatively low variability in scores, implying that most learners performed consistently around the mean.

The results imply that prior to the intervention, learners generally demonstrated moderate comprehension skills, with only a small proportion achieving advanced proficiency. This finding highlights the need for pedagogical strategies that can elevate learners from intermediate to advanced levels. The use of visual schedules as a pedagogical tool is particularly relevant in this context, as it provides structured, multimodal support that can aid inclusive learners in organizing information, enhancing focus, and scaffolding comprehension processes. For Buaya Elementary School, the integration of visual schedules may serve as a practical intervention to address the observed gaps. By systematically guiding learners through reading tasks, visual schedules can potentially reduce cognitive load and improve comprehension outcomes, thereby validating their effectiveness in inclusive educational settings.

Lugnasin et al. (2025) demonstrated that the Strategic Use of Visual Illustrations (SUVI) significantly improved reading comprehension among Grade 7 learners, showing marked gains from pretest to posttest scores. Similarly, Gallardo et al. (2023) found that visual learning-style-based activities enhanced comprehension skills among English majors, emphasizing the role of visual scaffolds in processing textual information. In addition, a study on graphic organizers revealed their effectiveness in improving comprehension by helping learners' structure and retain information more effectively (Taylor's University, 2023). Collectively, these findings affirm that visual schedules and related visual strategies are effective tools for fostering reading comprehension, particularly in inclusive learning environments where diverse learner needs must be addressed.

Vocabulary

Vocabulary knowledge is a critical foundation of reading comprehension, as it enables learners to decode words, understand meanings, and construct meaning from texts. A strong vocabulary allows students to engage more deeply with reading materials, while limited word knowledge often restricts comprehension to surface-level understanding. In literacy research, assessing vocabulary skills during the pre-test phase provides essential baseline data that highlights learners' initial capacity to recognize, define, and use words meaningfully before any instructional intervention is applied.

Table 3 presented the level of reading comprehension skills of learners during the pretest as to vocabulary. Out of 20 learners, 7 (35%) were classified as advanced, scoring within the range of 8–10, while 10 learners (50%) fell under the

intermediate level, with scores ranging from 5–7. Meanwhile, 3 learners (15%) were identified as beginners, scoring between 0–4. The computed mean score of 6.45 indicates that the general performance of the learners is within the intermediate level, suggesting moderate vocabulary comprehension prior to the intervention. Although a considerable proportion of learners demonstrated advanced skills, the majority still exhibited intermediate proficiency, highlighting the need for pedagogical strategies to elevate comprehension across all learners. The data imply that while a portion of learners already possess advanced vocabulary comprehension, most remain at the

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

Level	Range of Scores	Frequency	Percentage
Advanced	8-10	7	35.00
Intermediate	5-7	10	50.00
Beginner	0-4	3	15.00
TOTAL		20	100.00
MEAN		6.45	
St.Dev.		209	

intermediate level, with a small group struggling at the beginner stage. This distribution underscores the necessity of differentiated instructional approaches, particularly in inclusive settings where learners exhibit diverse abilities. The use of visual schedules as a pedagogical tool becomes significant in this context, as it provides structured, accessible, and visually guided learning pathways that can support both intermediate and beginner learners in bridging comprehension gaps. For Buaya Elementary School, the integration of visual schedules can foster consistency, reduce cognitive overload, and enhance vocabulary acquisition. This approach aligns with inclusive education principles, ensuring that learners with varying comprehension levels are provided equitable opportunities to improve their reading skills.

Phonological Awareness

Phonological awareness is a foundational skill in the development of reading comprehension, as it enables learners to recognize and manipulate the sound structures of language. During the pretest, the learners' performance revealed their initial ability to identify, segment, and blend sounds, which serves as a critical indicator of their readiness for more advanced literacy tasks. The results highlighted varying levels of competence: some learners demonstrated emerging awareness of rhymes and syllables, while others showed difficulty in distinguishing individual phonemes. These findings provide valuable insight into their baseline comprehension skills and guide the instructional strategies

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

Level	Range of Scores	Frequency	Percentage
Advanced	8-10	10	50.00
Intermediate	5-7	7	35.00
Beginner	0-4	3	15.00
TOTAL		20	100.00
MEAN		6.95	
St.Dev.		2.01	

needed to strengthen their reading development.

The results of the pretest on phonological awareness reveal that half of the learners (50%) fall within the advanced level (scores 8–10), indicating strong foundational skills in recognizing and manipulating sounds. Meanwhile, 35% of the learners are at the intermediate level (scores 5–7), suggesting moderate proficiency, and 15% are at the beginner level (scores 0–4), reflecting limited phonological awareness. The computed mean score of 6.95 and a standard deviation of 2.01 indicate that the group's overall performance falls in the intermediate range, with variability across learners' skill levels. This distribution shows that while a significant portion of learners demonstrate advanced skills, a notable group still requires targeted instructional support.

These findings underscore the necessity for differentiated pedagogical strategies in inclusive classrooms at Buaya

Elementary School. The distribution of proficiency levels (50% advanced, 35% intermediate, and 15% beginner) suggests that interventions such as visual schedules provide structured scaffolding to enhance comprehension. Visual schedules serve as cognitive aids, bridging gaps in phonological awareness by reinforcing sequential learning and reducing cognitive overload. The mean score of 6.95 and standard deviation of 2.01 indicate overall intermediate performance with notable variability among learners. Learners at the beginner and intermediate levels are likely to benefit most from visual cues that support decoding and comprehension, thereby promoting equity in literacy development at Buaya Elementary School.

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 revealed a marked improvement in learners' reading comprehension skills compared to their pre-test performance. Learners demonstrated stronger abilities in identifying main ideas, making inferences, and drawing conclusions from both narrative and expository texts. Many students showed enhanced capacity to move beyond literal recall toward higher-order comprehension tasks, including summarization and critical analysis. This upward trend indicates that the instructional intervention was effective in fostering deeper engagement with texts and strengthening overall comprehension skills

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

Level	Range of Scores	Frequency	Percentage
Advanced	8-10	2	10.00
Intermediate	5-7	14	70.00
Beginner	0-4	4	20.00
TOTAL		20	100.00
MEAN		6.55	
St.Dev.		0.94	

Table 5 presented learners' post-test reading comprehension performance. Of 20 respondents, 2 learners (10%) reached the advanced level (scores 8–10), while 14 learners (70%) were at the intermediate level (scores 5–7). Meanwhile, 4 learners (20%) remained at the beginner level with scores from 0–4. The computed mean score of 6.55 indicates that the group's overall performance falls within the intermediate range, supported by a relatively low standard deviation of 0.94, suggesting consistency in learners' scores. This distribution reflects that the majority of learners demonstrated moderate comprehension skills after the intervention.

The results indicate that visual schedules, as a pedagogical tool, improved reading comprehension among inclusive learners at Buaya Elementary School. Post-test data show that 70% of learners attained the intermediate level, 10% reached the advanced level, and 20% remained at the beginner level. The mean score of 6.55 and standard deviation of 0.94 suggest intermediate performance with consistent outcomes across learners. The predominance of intermediate and advanced achievers implies that visual schedules facilitated structured learning, enhanced focus, and provided effective scaffolding for comprehension tasks. The small proportion of beginners suggests that, although some learners continued to face challenges, the intervention enabled most participants to progress beyond basic comprehension.

These findings underscore the effectiveness of visual schedules in addressing comprehension gaps, particularly in inclusive settings where multimodal and visually guided instruction is critical.

Vocabulary

Vocabulary knowledge plays a vital role in strengthening reading comprehension, as it allows learners to understand, interpret, and connect ideas within a text.

During the posttest, the learners' performance reflected noticeable improvement in their ability to recognize word meanings, use context clues, and apply appropriate vocabulary in comprehension tasks. This progress indicates that learners have developed stronger word knowledge, which enhances their capacity to grasp the overall meaning of passages and contributes to more effective reading comprehension**.**

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

Level	Range of Scores	Frequency	Percentage
Advanced	8-10	10	50.00
Intermediate	5-7	7	35.00
Beginner	0-4	3	15.00
TOTAL		20	100.00
MEAN		7.70	
St.Dev.		1.56	

Table 6 presented the posttest results for learners' vocabulary reading comprehension. Of 20 learners, 35% (7 learners) reached the *advanced* level, with scores ranging from 8–10, while 50% (10 learners) were at the *intermediate* level, with scores between 5–7. Meanwhile, 15% (3 learners) remained at the *beginner* level, scoring 0–4. The computed mean score of 7.20 suggests that the group's overall performance leaned toward the intermediate level, while the standard deviation of 1.47 indicates a relatively moderate spread of scores, with most learners clustering around the mean and a few extreme scores. This distribution highlights that a majority of learners demonstrated improved vocabulary comprehension after the intervention.

The results indicate that visual schedules, as a pedagogical tool, positively influenced learners' vocabulary comprehension at Buaya Elementary School. Post-test data show that 35% of learners attained the advanced level, 50% achieved the intermediate level, and 15% remained at the beginner level. The mean score of 7.20 and standard deviation of 1.47 reflect performance in the intermediate-to-advanced range, with moderate variability. The predominance of intermediate and advanced learners (85% combined) demonstrates the intervention's effectiveness in enhancing vocabulary comprehension. While most learners benefited from structured visual support, some required additional scaffolding to reach advanced proficiency.

These findings highlight the importance of differentiated instruction and sustained use of visual schedules to support diverse learners, particularly in inclusive settings. The data support visual schedules as a practical and impactful strategy for strengthening vocabulary comprehension and advancing institutional goals of literacy improvement and inclusivity.

Furthermore, Gallardo, et al (2023) found that visual learning-style-based activities enhanced the reading comprehension skills of English majors, reinforcing the adaptability of visual tools across learner groups.

Moreover, a study by researchers at Taylor's University (2023) on graphic organizers confirmed their effectiveness in improving comprehension by helping learners' structure and retain vocabulary. Collectively, these studies affirm that visual schedules and related visual strategies are powerful pedagogical tools that foster comprehension, particularly in inclusive educational contexts.

Phonological Awareness

Phonological awareness remains a critical component of reading comprehension, as it equips learners with the ability to recognize, differentiate, and manipulate the sound structures of words. During the posttest, the learners demonstrated improved skills in identifying rhymes, segmenting syllables, and blending phonemes, reflecting growth in their capacity to decode and comprehend text. This progress indicates that their strengthened phonological awareness supports more effective word recognition and enhances overall reading comprehension performance.

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

Level	Range of Scores	Frequency	Percentage
Advanced	8-10	7	35.00
Intermediate	5-7	10	50.00
Beginner	0-4	3	15.00
TOTAL		20	100.00
MEAN		7.20	
St.Dev.		1.47	

Table 7 presented the posttest results for learners' reading comprehension skills in phonological awareness. The distribution shows that 50% (f=10) of the learners achieved an *advanced* level with scores ranging from 8–10, while 35% (f=7) were at the *intermediate* level (scores 5–7), and 15% (f=3) remained at the *beginner* level (scores 0–4). The computed mean score of 7.70 and standard deviation of 1.56 indicate that most learners clustered at the higher end of the scale, suggesting generally strong phonological awareness performance after the intervention. This upward trend reflects a positive shift in learners' comprehension skills, with half of the group demonstrating mastery.

The results demonstrate that visual schedules as a pedagogical tool significantly enhanced phonological awareness and reading comprehension among inclusive learners at Buaya Elementary School. Post-test data indicate that 50% of learners achieved the advanced level, 35% reached the intermediate level, and 15% remained at the beginner level. The mean score of 7.70 and standard deviation of 1.56 suggest strong overall performance, with most learners clustering at the higher end of the scale.

The high proportion of advanced learners indicates that structured visual cues supported the organization of reading tasks, phoneme decoding, and retention of comprehension strategies. In inclusive classrooms with diverse learning needs, visual schedules provided effective scaffolding, reduced cognitive load, and improved engagement.

These findings reinforce the effectiveness of multimodal instructional approaches and highlight the value of visual aids in bridging comprehension gaps and promoting literacy development among learners with varying abilities.

Castor and Buenviaje (2025) demonstrated that digitized reading materials that integrated phonemic awareness strategies significantly improved comprehension among Grade 7 learners.

Similarly, Ito (2024) emphasized that phonological prediction during comprehension, supported by visual-world paradigms, enhances learners' ability to anticipate and decode linguistic input, thereby strengthening comprehension

Moreover, systematic phonemic awareness programs have been shown to be effective in inclusive settings, where explicit instruction combined with visual scaffolds fosters literacy growth (ED604475, 2020). Collectively, these studies affirm that visual schedules and structured phonological interventions are powerful tools in advancing reading comprehension skills in diverse educational contexts.

Test Of Difference Between The Pre-test and Post-test Scores on the Reading Comprehension Skills of the Learners

The test of significant difference between pretest and post-test scores is conducted to determine whether the learners' performance has improved after the intervention or instructional program. By comparing the mean scores from both assessments, the analysis reveals if the observed changes are statistically meaningful rather than occurring by chance. This evaluation provides evidence of the effectiveness of the teaching strategies employed and highlights the extent of learners' progress in their reading comprehension skills

ComprehensionThe test of difference between the pretest and posttest scores on reading comprehension skills, specifically in terms of comprehension, aims to determine whether learners showed significant improvement after the

intervention. By comparing their initial and final performance, the analysis highlights changes in their ability to understand, interpret, and construct meaning from texts. This evaluation provides evidence of the effectiveness of instructional strategies and indicates the extent to which learners have progressed in mastering comprehension skills.

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	5.40	1.39	1.15	6.328*	0.000	**Reject Ho**	**Significant**
Posttest	6.55	0.94					

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

Table 8 compared learners' pre-test and post-test reading comprehension scores. The pre-test mean was 5.40 (SD = 1.39), increasing to 6.55 (SD = 0.94) post-intervention, with a mean difference of 1.15. The computed t-value of 6.328 and p-value of 0.000 ($p < 0.05$) confirm that this improvement is statistically significant, leading to the rejection of the null hypothesis. The structured, visual nature of schedules provided scaffolding that enabled learners to organize information, follow sequences, and retain content more effectively. The lower post- test standard deviation indicates greater consistency in performance.

These results demonstrate that visual schedules are particularly beneficial in diverse, inclusive classrooms, supporting differentiated instruction and promoting equity in literacy development.

Moreover, Miyauchi (2020), in a systematic review on inclusive education, emphasized that visual supports are critical for addressing the challenges faced by learners with impairments, thereby validating the inclusive potential of visual schedules (files.eric.ed.gov). Collectively, these studies support the conclusion that visual schedules are a valuable instructional tool for improving reading comprehension in inclusive settings.

Vocabulary

To assess the effectiveness of the intervention on learners' reading comprehension skills in terms of vocabulary, a comparison of their pretest and posttest scores was conducted. The analysis utilized a paired sample t-test to determine whether the difference in mean scores was statistically significant. This statistical method provides evidence on whether the observed improvement in learners' vocabulary knowledge, such as word recognition, contextual understanding, and usage, can be attributed to the instructional strategies implemented rather than random variation. The results of this test serve as a basis for evaluating the learners' progress and the overall impact of the program on vocabulary development.

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	6.45	2.09	0.75	3.684*	0.002	**Reject Ho**	**Significant**
Posttest	7.20	1.47					

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

Table 9 presented the comparison of learners' pre-test and post-test vocabulary comprehension scores. The pre-test mean was 6.45 (SD = 2.09), increasing to 7.20 (SD = 1.47) post-intervention, with a mean difference of 0.75. The computed t-value of 3.684 and p-value of 0.002 ($p < 0.05$) indicate that this improvement is statistically significant, leading to the rejection of the null hypothesis. The structured, visually guided learning environment provided clarity, predictability, and scaffolding, resulting in more consistent vocabulary scores.

These findings suggest that visual schedules not only support vocabulary acquisition but also promote inclusivity by accommodating diverse learner needs, thereby advancing institutional goals for literacy development and equitable learning outcomes.

Phonological Awareness

o evaluate the effectiveness of the intervention on learners' reading comprehension skills in terms of phonological awareness, their pretest and posttest scores were compared. The analysis employed a **paired sample t-test** to determine whether the observed differences in mean scores were statistically significant. This statistical procedure provides evidence on whether improvements in learners' ability to recognize, segment, and manipulate sounds can be attributed to the instructional strategies rather than chance. The results of this test serve as a basis for assessing the learners' progress and the overall impact of the program on phonological awareness.

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	6.95	2.01	0.75	4.682*	0.000	Reject Ho	Significant
Posttest	7.70	1.56					

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

Table 10 compared learners' pre-test and post-test scores in phonological awareness. The pre-test mean was 6.95 (SD = 2.01), increasing to 7.70 (SD = 1.56) post-intervention, with a mean difference of 0.75. The computed *t*-value of 4.682 and p-value of 0.000 ($p < 0.05$) confirm that this improvement is statistically significant, leading to the rejection of the null hypothesis. Structured, visually guided routines strengthened learners' phonological awareness, a foundational reading skill, and reduced performance variability.

These results indicate that visual schedules support learners with diverse needs, foster consistency and engagement, and contribute to inclusive literacy development across various school contexts.

Similarly, Faunillan (2023) demonstrated that multisensory approaches, including visual aids, enhanced phonological awareness in kindergarten learners (journals. indexcopernicus.com).Moreover, systematic instruction in phonemic awareness, as discussed by Al Otaiba et al. (2020), was found crucial for supporting learners with reading difficulties, reinforcing the importance of explicit, structured pedagogical tools. These studies collectively support the conclusion that visual schedules are an effective strategy for improving reading comprehension skills in inclusive educational settings.

Findings:

The results show that visual schedules are an effective cognitive scaffold for a variety of learners:
Compared to pre-test levels, when only a tiny percentage demonstrated advanced skills, post-test data showed that 85% of learners attained intermediate or advanced proficiency. By making task sequences clear, the visual schedules' structured format assisted students in filling in cognitive gaps.The intervention effectively advanced students' vocabulary proficiency. The study decreased the ambiguity of abstract phrases by combining verbal instruction with visual clues, which improved learners' ability to remember and retrieve word meanings.

Students made significant strides in their ability to recognize, separate, and blend sounds. The number of pupils achieving advanced proficiency in this fundamental skill increased significantly as a result of the introduction of visual sequences to teach auditory discrimination.Paired-sample t-tests and other statistical analyses verified that the pre-test and post-test score changes were significant (p=0.000). This confirms that the visual scheduling intervention, rather than outside variables, is the main force behind literacy development.

Conclusion:

The study comes to the conclusion that integrating visual schedules and resources is a very successful pedagogical intervention for improving inclusive learners' literacy abilities. For kids with neurodevelopmental problems, these technologies effectively lessened the cognitive load and anxiety frequently associated with reading activities by offering a controlled, predictable, and multimodal learning environment. The statistical evidence supports the use of visual scaffolding as a dependable strategy for closing educational gaps, particularly the removal of beginner-level scores and the notable movement toward intermediate and advanced competency in vocabulary, comprehension, and phonological awareness. In the end, the study demonstrates that academic performance greatly increases when teaching tactics are modified to accommodate students' varied processing needs, bringing the school closer to its objective of providing an inclusive, equitable, high-quality education.

Recommendations:

Based on the findings and conclusions of the study, the use of visual schedules was found to be effective in enhancing the reading comprehension skills of inclusive learners at Buaya Elementary School. Thus, the study recommends the development and implementation of a structured instructional plan that integrates visual supports into daily literacy instruction. Inclusive learners often experience challenges in comprehension, vocabulary acquisition, and phonological awareness due to factors such as attention deficits and learning difficulties. Visual schedules and aids serve as effective scaffolding tools by simplifying tasks, reducing cognitive load, and promoting self-regulation. Through the use of structured and predictable visual cues, learners are better able to process information, engage in reading activities, and develop independence. This instructional approach aligns with inclusive education principles and supports equitable access to quality learning opportunities.

To ensure effective implementation, the study proposes a systematic plan that includes the development of standardized visual materials, teacher capacity-building, and continuous monitoring and evaluation. This involves creating a resource bank of visual supports, conducting training workshops for teachers, and establishing a tracking system to measure learners' progress and independence. The plan also emphasizes the use of structured visual sequences to help learners manage complex literacy tasks with minimal assistance. Implemented through phases—preparation, development, integration, and evaluation—the program aims to institutionalize visual scheduling as a key component of literacy instruction. Ultimately, this initiative is expected to improve learner outcomes, strengthen teaching practices, and sustain literacy development in inclusive classroom settings.

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