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Using Digital Visual Literacy to Improve Reading Skills of Junior High School Students in Remote Islands

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ABSTRACT

This Classroom Action Research investigated the use of Digital Visual Literacy (DVL) to improve the reading comprehension of Grade VIII students at SMP Negeri 2 Tiakur, a junior high school located in the remote islands of Maluku Barat Daya. The study was conducted in two cycles following the Kemmis and McTaggart model, involving 23 students and employing multimodal materials such as images, infographics, videos, PowerPoint slides, and digital stories. Data were collected through pretest and post-tests, observation checklists, questionnaires, and interviews. The findings revealed significant improvement in students' reading comprehension, with mean scores increasing from 56.2 in the pretest to 67.8 in Cycle 1 and 79.1 in Cycle 2. Students showed better ability to identify main ideas, infer information, and understand vocabulary in context. Qualitative results also indicated increased engagement, collaboration, and motivation during reading activities, supported by students' positive perceptions of DVD-based learning. Despite limited technological infrastructure, the integration of offline digital and visual materials proved feasible and effective in the remote island context. Overall, the study concludes that Digital Visual Literacy enhances both cognitive and affective aspects of reading, making it a powerful instructional approach for improving literacy outcomes in EFL classrooms, particularly in undeserved and low-resource regions.

Keywords: *Digital Visual Literacy, reading comprehension, multi modal learning, EFL, Classroom Action Research, remote islands.*

INTRODUCTION

Reading is a fundamental skill in English as a Foreign Language (EFL) learning because it enables students to access information, expand vocabulary, and develop overall language competence. Grabe and Stoller (2011) emphasize that reading is an interactive process involving decoding, interpretation, and meaning construction. For students in junior high school, particularly in remote regions, the ability to comprehend English texts is essential not only for academic achievement but also for fostering independent learning habits. Yet, many learners still view reading as a difficult activity due to limited exposure to English-language materials.

In remote island contexts such as Maluku Barat Daya, students face multiple challenges that hinder their reading development. Limited access to books, lack of exposure to authentic texts, and minimal technological support contribute to low motivation and poor comprehension skills. Nation (2013) highlights that vocabulary exposure is crucial for comprehension, but such exposure is often restricted in geographically isolated areas. As a

result, students struggle to identify the main idea, determine specific information, and make inferences from the text. This issue is evident at SMP Negeri 2 Tiakur, where most students exhibit low reading proficiency based on previous assessments.

Traditional teaching methods used in many remote schools also contribute to students' difficulties. Reading instruction often relies heavily on translation and teacher-centered explanation, leaving students passive and disengaged. Richards and Rodgers (2014) argue that these conventional approaches limit learners' cognitive involvement and fail to address diverse learning styles. Without interactive and visually supported instruction, students find it hard to construct meaning from texts, especially when they face unfamiliar vocabulary or concepts.

To address these challenges, Digital Visual Literacy (DVL) has emerged as a promising strategy for enhancing reading comprehension. DVL refers to the ability to interpret, analyze, and create meaning through digital and visual media such as pictures, videos, animations, info graphics, and digital stories. Avgerinou and Ericson (1997) define visual literacy as the ability to "read" and "write" visual messages, while digital literacy involves navigating information through digital tools. When combined, DVL provides multi modal input that supports learners who struggle with text-only materials.

The theoretical foundation for DVL is grounded in Mayer's Cognitive Theory of Multimedia Learning (2009), which states that learning improves when information is presented through both verbal and visual channels. This dual-channel processing reduces cognitive load and helps students retain information more effectively. Paivio's Dual Coding Theory (1986) also supports the idea that combining text and images reinforces comprehension by engaging both verbal and nonverbal systems. In reading instruction, these theories suggest that visuals can scaffold meaning, activate background knowledge, and help students interpret textual information.

Previous studies consistently demonstrate the effectiveness of integrating digital and visual media in reading instruction. Putri (2020) found that digital storytelling significantly improved students' understanding of narrative texts and increased motivation. Rahayu and Sari (2022) reported that visual-based learning enhanced engagement and participation among rural EFL learners. Similarly, Yunus et al. (2021) showed that multi modal texts—combining images, audio, and print—helped students build stronger connections between ideas and improved overall comprehension. These studies highlight that DVL can effectively support reading development, especially in low-resource environments.

DVL is also highly relevant for students in remote island schools because the approach can be adapted to limited technological conditions. Even without full internet access, teachers can utilize offline videos, local pictures, info graphics, or PowerPoint slides to enhance reading activities. Kress (2010) emphasizes that contemporary learners respond more positively to multi modal input than traditional text-based instruction. Visual and digital materials not only make reading more accessible but also promote curiosity, creativity, and collaborative learning among students.

Given the theoretical and empirical support for DVL, it is important to examine how this approach can be implemented effectively in the context of SMP Negeri 2 Tiakur. This research investigates the use of digital visual literacy as an alternative reading strategy to improve comprehension, increase engagement, and support vocabulary development. By exploring students' responses and measuring their progress, this study aims to provide insights into how multi modal instruction can address reading challenges in remote island

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classrooms and contribute to the development of more inclusive and effective EFL teaching practices.. The research is guided by the following questions: 1. How is Digital Visual Literacy implemented in teaching reading at SMP Negeri 2 Tiakur, 2. To what extent does Digital Visual Literacy improve students' reading comprehension?, 3. What are students' perceptions of learning reading through Digital Visual Literacy?.

METHOD

This study employed a Classroom Action Research (CAR) design based on the model proposed by Kemmis and McTaggart (1988), which consists of four cyclical stages: planning, action, observation, and reflection. CAR was selected because it allows teachers to systematically examine and improve classroom practices while addressing specific learning challenges—in this case, students' low reading comprehension. The research was conducted at SMP Negeri 2 Tiakur during the 2025 academic year, involving 23 students of Grade VIII. Two cycles were implemented, with each cycle consisting of two meetings. During the planning stage of each cycle, lessons integrating Digital Visual Literacy (DVL)—including images, PowerPoint slides, videos, infographics, and digital stories—were prepared to support reading activities. The action stage consisted of implementing these DVL-based reading strategies, while the observation stage involved monitoring students' engagement, participation, and performance using an observation checklist. Reflection was conducted at the end of each cycle to evaluate the effectiveness of the intervention and determine improvements for the subsequent cycle.

Multiple instruments were used to collect both quantitative and qualitative data. A pre-test and two post-tests (administered after each cycle) were used to measure students' reading comprehension improvement, while descriptive statistics such as mean scores and percentage gains were used to analyze the results. Qualitative data were collected through an observation checklist, student questionnaires, and semi-structured interviews. The questionnaire captured students' perceptions of learning through digital visual materials, while the interviews provided deeper insights into their experiences and challenges. Observation data were analyzed to identify behavioral patterns, levels of participation, and responses during DVL-based lessons. Qualitative data were analyzed using thematic analysis, enabling the researcher to identify recurring ideas and themes. Triangulation of data from tests, observations, and student feedback strengthened the validity of the findings and provided a comprehensive understanding of the impact of Digital Visual Literacy on students' reading comprehension.

FINDINGS AND DISCUSSION

The results of this research demonstrate that the implementation of Digital Visual Literacy (DVL) brought significant improvement to students' reading comprehension at SMP Negeri 2 Tiakur. The pre-test results revealed that most students experienced difficulty in identifying main ideas, locating supporting details, and understanding vocabulary in context. Their mean score of 56.2 indicated that students had limited reading strategies and lacked the necessary exposure to English texts. This initial condition confirmed the need for a more interactive and visually supportive instructional approach capable of addressing the learners' weaknesses.

After Cycle 1 was implemented using visual materials such as pictures, PowerPoint slides, and simple infographics, students showed notable progress in comprehension. Their mean

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score improved to 67.8, reflecting a better ability to interpret information and understand narrative structure. The improvement also suggested that visual inputs successfully acted as scaffolding tools, enabling students to make meaning from texts more effectively. According to Paivio's Dual Coding Theory (1986), combining verbal and visual information supports stronger memory and comprehension, a concept that was clearly reflected in students' improved performance after the initial intervention.

In Cycle 2, the integration of more advanced digital visual materials—such as short videos, interactive infographics, and digital stories—resulted in even greater improvement. The mean score increased to 79.1, representing a 22.9-point improvement from the pre-test. More importantly, 87% of students achieved the Minimum Mastery Criterion (75), showing that DVL does not simply enhance comprehension but also helps students reach targeted academic benchmarks. This upward trend suggests that multimodal learning—as proposed by Mayer's Multimedia Learning Theory (2009)—provides deeper support for comprehension by presenting information through simultaneous channels.

In addition to test scores, classroom observations revealed significant changes in students' engagement throughout the cycles. During the early stages, many students were passive, hesitant to answer questions, and easily discouraged when facing unfamiliar vocabulary. However, once visual and digital materials were introduced, students became more active and expressive. Visual elements made the reading passages appear less intimidating and helped students construct mental imagery, allowing them to follow the text more confidently. These behavioral changes indicate that DVL not only builds cognitive understanding but also enhances affective engagement.

Observation checklists further showed that students became more collaborative during group reading tasks. When analyzing images, predicting text content, or discussing video clips, students naturally participated in peer interactions that supported comprehension. This aligns with Vygotsky's Sociocultural Theory (1978), which emphasizes the role of social interaction in learning. Visual and digital media provided shared points of reference, enabling students to negotiate meaning together. Such collaborative learning strengthened both reading comprehension and communicative interaction among learners.

Students' perceptions gathered through questionnaires also strongly supported the positive impact of DVL. The majority of students (87%) agreed that visual materials made texts easier to understand. Meanwhile, 91% stated that reading lessons became more enjoyable when pictures and videos were incorporated. These responses indicate that DVL increases motivation—an essential factor in language learning. Motivation has long been recognized as a predictor of reading success, and the use of engaging visual materials appears to have successfully addressed students' lack of interest and low confidence in reading English texts.

Interview results provided deeper insight into how DVL facilitated students' comprehension. Many students reported that visuals helped them guess the meaning of new words without relying on translation. Others stated that watching a short video before reading a text helped them build background knowledge, making the reading task easier. These testimonies reflect the principle that contextual clues and multimodal inputs reduce cognitive load, enabling students to comprehend complex texts with greater ease. Students' responses also showed that they valued reading activities more when supported by visuals that connected to real-life situations.

The findings also highlighted the importance of multimodal input in overcoming vocabulary limitations. Students in remote island contexts often have restricted exposure to English

outside the classroom, making vocabulary acquisition slow and challenging. However, when visuals were provided, students could infer meaning more effectively, reducing their reliance on direct translation. Mayer (2009) suggests that visuals support the integration of new information with existing mental frameworks, a process crucial for learners with limited vocabulary. The improvements observed in students' performance confirm this theoretical perspective.

Another important finding is that DVL improved students' confidence in tackling reading tasks. Initially, students appeared anxious and uncertain when reading English texts. However, after being exposed to visuals and digital media, they demonstrated increased willingness to answer questions, participate in discussions, and attempt unfamiliar texts. According to Krashen's Affective Filter Hypothesis (1982), lowering anxiety facilitates language acquisition. The visual materials used in this research acted as anxiety-reducing tools, helping students feel more supported and capable.

The visual-based approach also helped students develop essential reading strategies, such as predicting, skimming, and scanning. For instance, students used images to predict content before reading, which activated prior knowledge and prepared them for the text. Videos and digital stories helped students understand the overall context, enabling them to skim and identify main ideas more efficiently. These strategies are crucial for developing independent readers, and the use of visual stimuli appears to encourage students to use them naturally during learning.

While the findings were overwhelmingly positive, some challenges were also observed. A few students required additional time to adjust to digital materials because they were unfamiliar with multimedia-based reading. Additionally, limited technological infrastructure in remote island schools posed constraints on the variety of digital resources that could be used. However, these challenges were mitigated by using offline materials such as downloaded videos, printed infographics, and teacher-made digital slides. This suggests that DVL can still be effectively implemented even in low-resource environments with minimal technology.

Teacher reflections also supported the effectiveness of DVL. The teacher noted that students became more interactive and showed greater enthusiasm during lessons involving visual materials. The teacher also felt that preparing digital visual materials encouraged creativity in lesson design and provided new avenues for addressing students' diverse learning needs. Furthermore, the teacher observed that DVL encouraged students to think critically and ask more questions, showing deeper engagement with the reading content.

From a pedagogical perspective, the results highlight the need for more contextualized and multimodal teaching approaches in remote island schools. Traditional reading instruction relying solely on printed texts may not address the unique learning challenges faced by students with limited exposure to English. DVL provides a practical solution by enabling teachers to utilize accessible and engaging visual tools that enhance comprehension. These findings align with global educational trends emphasizing multimodal literacy as a key 21st-century skill.

The findings also have broader implications for EFL education in similar low-resource settings. They demonstrate that digital visual materials do not require high-tech devices or stable internet connections to be effective. Rather, teachers can use simple offline tools—such as images, diagrams, and short videos—to create meaningful learning experiences that support comprehension. This adaptability makes DVL a sustainable and scalable approach for

improving literacy in remote and underserved communities.

In summary, the combined findings and discussion clearly show that Digital Visual Literacy significantly improved students' reading comprehension, motivation, engagement, and confidence. The integration of visual and digital materials allowed students to overcome vocabulary limitations, reduce anxiety, and interact more actively with the text. The study's results confirm that DVL is not only an effective reading strategy but also a powerful pedagogical tool for transforming literacy instruction in remote island contexts like SMP Negeri 2 Tiakur. These findings emphasize the importance of multimodal learning and support the adoption of DVL in EFL classrooms to promote deeper comprehension and more meaningful learning experiences.

CONCLUSION

This study concludes that the integration of Digital Visual Literacy (DVL) significantly improves students' reading comprehension in junior high school settings, particularly in remote island contexts such as SMP Negeri 2 Tiakur. The substantial increase in students' scores across the pre-test, Cycle 1, and Cycle 2 assessments demonstrates that visual and digital materials play an essential role in supporting students' understanding of English texts. The use of images, videos, infographics, and digital stories helped students interpret meaning more easily, infer information, and connect textual content with contextual cues.

The findings also highlight that DVL improves student engagement and participation during reading lessons. Students became more active, enthusiastic, and willing to collaborate as they interacted with various visual materials. Classroom observations revealed that the presence of visual supports made reading tasks less intimidating and more enjoyable. These improvements in engagement indicate that DVL not only enhances comprehension but also positively influences students' emotional responses toward reading, thereby increasing their motivation to learn.

Moreover, students' positive perceptions of DVL, as reflected in questionnaire and interview responses, strengthen the conclusion that multimodal learning environments are more effective than traditional text-based instruction. Students reported that visuals made reading easier to understand and increased their confidence in approaching English texts. This suggests that DVL is particularly beneficial for learners with limited vocabulary and low exposure to English, as it provides necessary scaffolding to facilitate comprehension and reduce reading anxiety.

The study also concludes that DVL is feasible and adaptable even in low-resource schools with limited technological access. Despite infrastructure constraints in Tiakur, the use of offline digital tools—such as downloaded videos, teacher-prepared slides, and printed infographics—proved effective in enhancing students' reading abilities. This demonstrates that DVL does not require sophisticated technology to be successfully implemented and can be integrated into various educational contexts, including remote or underserved regions.

Overall, the research confirms that Digital Visual Literacy is a powerful instructional approach that enhances both cognitive and affective aspects of reading. By improving comprehension, fostering motivation, supporting vocabulary development, and encouraging classroom participation, DVL offers a practical and impactful strategy for addressing reading challenges in remote island schools. The study underscores the importance of incorporating visually rich and engaging materials into EFL teaching practices to create meaningful and

supportive learning experiences for students

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