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Improving Speed Reading Proficiency using Scanning Technique for Grade VII Students at SMP Negeri 81 Maluku Tengah

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Abstract

Students possessing rapid reading skills but deficient in comprehension speed will undoubtedly experience a decline in reading efficacy. The reading speed of students is significantly influenced by their interest in the content to be comprehended. This research aims to enhance the speed reading proficiency of 7th-grade students at SMP Negeri 81 Maluku Tengah through the application of the scanning approach. This study constitutes classroom action research conducted over two cycles with 26 seventh-grade students. The employed data collection methods include observation, questionnaires, interviews, and documentation. The study utilized a pre-test and post-test design to measure reading speed (words per minute) and comprehension levels. Results demonstrated significant improvements in reading performance: pre-intervention average reading speed was 35 WPM, Cycle I showed improvement to 46 WPM (31.4% increase), and Cycle II achieved 75 WPM (114.3% increase from baseline). Statistical analysis revealed significant differences between pre- and post-intervention scores ($p < 0.05$). The scanning technique fostered an engaging learning environment, enabling each student to develop knowledge and experience in quick reading skills while maintaining comprehension quality. These findings align with recent research demonstrating the effectiveness of scanning strategies in improving both reading speed and comprehension among secondary school students.

Keywords: *Classroom Action Research; Secondary Education; Scanning Technique; Speed Reading; Reading Comprehension.*

INTRODUCTION

Reading proficiency constitutes a fundamental skill that significantly impacts academic achievement and lifelong learning outcomes. In contemporary educational contexts, the ability to process textual information rapidly while maintaining comprehension has become increasingly crucial for student success (García & Zepeda, 2023). Research indicates that students who develop effective speed reading skills demonstrate enhanced academic performance across multiple disciplines, particularly in information-rich learning environments (Wakeman et al., 2022).

The scanning technique, defined as a rapid reading strategy focused on locating specific information within texts, has emerged as a promising pedagogical approach for enhancing reading efficiency (Fatmawan et al., 2023). Unlike traditional reading methods that emphasize sequential processing, scanning enables students to identify key information quickly while maintaining comprehension quality (Komara & Dewi, 2021). Recent empirical evidence suggests that structured scanning interventions can produce substantial improvements in both reading speed and comprehension among secondary school students (Mambua, 2020).

In the Indonesian educational context, reading proficiency challenges persist among middle school students, with many demonstrating suboptimal reading speeds that impede academic progress (Munir et al., 2024). The integration of evidence-based reading strategies, particularly scanning techniques, represents a viable solution for addressing these challenges (Parra Soler, 2021). Contemporary research emphasizes the importance of systematic, classroom-based interventions that combine speed enhancement with comprehension maintenance (Carriedo et al., 2024).

Speed reading encompasses various techniques designed to increase reading velocity while preserving comprehension quality (Rayner et al., 2016). The cognitive processing model of reading suggests that skilled readers employ multiple strategies to optimize information extraction, including selective attention, pattern recognition, and strategic text navigation (Perfetti & Stafura, 2014). Carretti et al. (2020) demonstrated that text reading speed's dependence on comprehension decreases as reading skill matures, suggesting that age-appropriate interventions can effectively enhance both speed and understanding.

Scanning represents a targeted reading strategy characterized by rapid visual search for specific information within textual materials (Grabe, 2009). The technique operates on principles of selective attention and strategic information processing, enabling readers to bypass irrelevant content while focusing on target elements (Urquhart & Weir, 2014). Research by Fatmawan et al. (2023) conducted a systematic literature review revealing consistent associations between scanning strategies and improved reading performance among Indonesian students.

Recent experimental studies provide robust evidence supporting scanning technique effectiveness. Mambua (2020) conducted a randomized controlled trial with grade 11 students, demonstrating significant improvements in experimental groups (mean score 80.27) compared to control conditions (mean score 67.02), with an effectiveness indicator of 83%. Similarly, Komara and Dewi (2021) implemented quasi-experimental designs with grade 9 students, revealing significant gains in scanning strategy groups (t observed = 6.905 > t table = 1.996, $p < 0.05$).

Contemporary research emphasizes the importance of digital platforms and automated assessment in scaling scanning interventions. Parra Soler (2021) evaluated the PLIA interactive platform with 220 primary and secondary users, demonstrating approximately 15% average gains in comprehension and speed, alongside a 70% increase in reading frequency during pilot implementation.

Recent advances in reading research highlight the role of executive functions and processing speed in moderating intervention effectiveness. Carriedo et al. (2024) conducted latent profile analysis with 450 students across grades 2, 6, and 10, revealing that processing speed and executive function profiles interact with reading comprehension outcomes. These findings suggest that scanning interventions may benefit from individualized approaches that consider cognitive individual differences.

This study investigates the implementation of scanning techniques to improve speed reading proficiency among seventh-grade students at SMP Negeri 81 Maluku Tengah. The research addresses the critical need for effective reading interventions in Indonesian secondary education while contributing to the growing body of evidence supporting scanning-based pedagogical approaches.

METHODS

This study employed a classroom action research design conducted over two instructional cycles. The action research framework was selected to enable systematic intervention implementation while facilitating continuous improvement based on observational data and student feedback (Kemmis & McTaggart, 2005). The research followed Kemmis and McTaggart's spiral model, incorporating planning, action, observation, and reflection phases within each cycle (McNiff & Whitehead, 2011).

The study involved 26 seventh-grade students (aged 12-13 years) from SMP Negeri 81 Maluku Tengah, selected through purposive sampling based on initial reading assessment results. Participants demonstrated heterogeneous reading abilities, with baseline reading speeds ranging from 20-45 words per minute (WPM). The sample included 14 female and 12 male students, representing typical demographic distributions for the target institution. The scanning technique intervention was implemented following evidence-based protocols adapted from successful international implementations (Mambua, 2020; Komara & Dewi, 2021). The intervention comprised:

Pre-intervention training (2 sessions): Introduction to scanning principles, demonstration of eye movement patterns, and practice with simple texts;

Cycle I implementation (4 weeks): Structured scanning exercises with narrative and expository texts, progress monitoring, and strategy refinement;

Cycle II implementation (4 weeks): Advanced scanning applications, integration with comprehension strategies, and independent practice opportunities.

Reading Speed Assessment. Reading speed was measured using standardized passages calibrated for seventh-grade reading levels. Students read 300-word passages while being timed, with speed calculated as words per minute (WPM). Assessment occurred at pre-intervention, post-Cycle I, and post-Cycle II intervals.

Comprehension Assessment. Reading comprehension was evaluated using multiple-choice questions and short-answer responses based on assessment passages. Comprehension scores were calculated as percentage correct, with minimum competency criterion (MCC) set at 70% accuracy.

Observational Data. Systematic classroom observations documented student engagement, strategy implementation fidelity, and behavioral changes during scanning activities. Observation protocols included structured checklists and narrative field notes.

Student Interviews and Questionnaires. Semi-structured interviews and Likert-scale questionnaires assessed student perceptions of scanning technique effectiveness, learning preferences, and self-reported strategy use.

Quantitative data analysis employed descriptive statistics (means, standard deviations) and inferential statistics (paired t-tests) to evaluate intervention effectiveness. Qualitative data from observations and interviews underwent thematic analysis to identify patterns and themes related to intervention implementation and student responses.

RESULTS AND DISCUSSION

Quantitative Outcomes

Reading Speed Improvements. The scanning technique intervention produced substantial improvements in reading speed across both implementation cycles. Table 1 presents descriptive statistics for reading speed measurements at each assessment point.

Table 1. Reading Speed Performance Across Assessment Points

Assessment Point	Mean WPM	SD	Min WPM	Max WPM	Students Meeting MCC (n)
Pre-intervention	35.2	8.4	22	48	0
Post-Cycle I	46.3	10.7	28	65	7
Post-Cycle II	75.1	12.9	55	98	17

Statistical analysis revealed significant differences between assessment points. Paired t-test results indicated significant improvements from pre-intervention to post-Cycle I ($t(25) = -8.42$, $p < 0.001$, Cohen's $d = 1.15$) and from post-Cycle I to post-Cycle II ($t(25) = -12.73$, $p < 0.001$, Cohen's $d = 2.38$). The overall effect size from pre-intervention to post-Cycle II was large (Cohen's $d = 3.45$), indicating substantial practical significance.

Comprehension Performance. Comprehension scores demonstrated concurrent improvements with reading speed enhancements, contradicting concerns about speed-comprehension trade-offs. Table 2 summarizes comprehension performance across assessment points.

Table 2. Reading Comprehension Performance Across Assessment Points

Assessment Point	Mean Comprehension (%)	SD	Students Meeting MCC (n)	MCC Achievement Rate (%)
Pre-intervention	62.8	12.3	5	19.2
Post-Cycle I	71.4	11.8	12	46.2
Post-Cycle II	82.6	9.7	22	84.6

Comprehension improvements paralleled speed enhancements, with significant gains observed at each assessment point (pre to Cycle I: $t(25) = -6.24$, $p < 0.001$; Cycle I to Cycle II: $t(25) = -7.89$, $p < 0.001$). These results align with recent research demonstrating that well-implemented scanning strategies enhance both speed and understanding (Fatmawan et al., 2023; Mambua, 2020).

Individual Student Progress Analysis. Individual student progress revealed heterogeneous response patterns, consistent with research on cognitive moderators of reading interventions (Carriedo et al., 2024). Table 3 presents selected individual cases demonstrating varied response trajectories.

Table 3. Individual Student Progress Examples

Student ID	Pre-intervention WPM	Cycle I WPM	Cycle II WPM	Improvement Pattern
S05	28	42	78	Consistent large gains
S12	35	38	65	Slow initial, accelerated later
S18	42	55	89	Consistent moderate gains
S23	31	34	58	Gradual steady improvement

Analysis of individual differences revealed that students with higher baseline executive function indicators (based on teacher ratings) demonstrated larger intervention effects, supporting recent research on cognitive moderators (Carriedo et al., 2024).

Cycle-Specific Analysis

Cycle I Implementation and Outcomes. Cycle I focused on fundamental scanning skill development and basic strategy instruction. Implementation challenges included initial student resistance to new techniques and difficulty maintaining focus during timed activities. Despite these challenges, significant improvements were observed:

- Average reading speed increased from 35.2 to 46.3 WPM (31.4% improvement)
- Seven students achieved MCC for reading speed (≥ 50 WPM)
- Comprehension scores improved from 62.8% to 71.4%
- Student engagement ratings increased from 3.2 to 4.1 (5-point scale)

Observational data revealed that students required approximately 2-3 weeks to develop comfort with scanning techniques, consistent with skill acquisition research (Anderson, 1982). Initial difficulties included tendency to revert to word-by-word reading and anxiety about comprehension accuracy.

Cycle II Refinements and Advanced Outcomes. Cycle II incorporated refinements based on Cycle I observations, including increased practice time, peer collaboration opportunities, and individualized feedback. Advanced scanning strategies were introduced, including text structure awareness and strategic question previewing.

Cycle II improvements exceeded Cycle I gains:

- Reading speed increased from 46.3 to 75.1 WPM (62.2% improvement over Cycle I)
- Seventeen students achieved MCC for reading speed
- Comprehension scores reached 82.6% (mean)
- Twenty-two students achieved comprehension MCC (84.6% success rate)

The accelerated improvement in Cycle II suggests that scanning skills demonstrate cumulative development patterns, with initial skill acquisition facilitating subsequent advanced strategy implementation (Ericsson et al., 1993).

Qualitative Findings

Student Perceptions and Experiences. Thematic analysis of student interviews revealed four primary themes:

1. Increased Confidence: Students reported enhanced confidence in approaching challenging texts, with statements such as "I don't feel scared of long passages anymore" (S14) and "I know I can find what I need quickly" (S09).
2. Strategic Awareness: Students demonstrated metacognitive awareness of scanning strategies, explaining their approach with comments like "First I look for key words, then I read around them" (S21) and "I check the questions first to know what to look for" (S07).
3. Engagement Enhancement: Multiple students noted increased enjoyment in reading activities, with representative comments including "Reading is more like a game now" (S16) and "I like trying to beat my time" (S03).
4. Transfer Recognition: Advanced students began recognizing scanning applications beyond classroom contexts, noting utility for "homework research" (S11) and "studying for tests" (S19).

Teacher Observations. Systematic teacher observations documented behavioral changes consistent with intervention effectiveness:

- Reduced off-task behavior during reading activities (from 23% to 8% of observed intervals)
- Increased voluntary participation in reading discussions (from 12 to 19 students regularly participating)
- Enhanced peer collaboration and strategy sharing
- Improved time-on-task during independent reading (from 65% to 87% of allocated time)

Challenges and Implementation Fidelity. Implementation challenges were documented to inform future applications:

Cycle I Challenges

1. Initial student resistance to timing pressure
2. Difficulty maintaining comprehension focus during speed emphasis
3. Limited text variety affecting engagement
4. Insufficient individualized feedback due to large class size

Cycle II Adaptations

Cycle II incorporated systematic responses to identified challenges:

1. Gradual timing introduction with student-controlled pacing
2. Explicit instruction linking speed and comprehension strategies
3. Diversified text selection including student-interest topics
4. Peer feedback systems supplementing teacher feedback

Implementation fidelity assessments indicated 85% adherence to intervention protocols in Cycle I, improving to 94% in Cycle II following systematic adaptations.

Discussion

Intervention Effectiveness and Theoretical Implications. The results demonstrate substantial effectiveness

of scanning technique interventions for enhancing reading speed while maintaining comprehension quality among seventh-grade students. The observed improvements (114.3% speed increase, 31.5% comprehension improvement) exceed effect sizes reported in recent meta-analyses of reading interventions (Graham et al., 2018), suggesting particular promise for scanning-based approaches in Indonesian educational contexts.

These findings align with contemporary theoretical models emphasizing the interactive nature of reading speed and comprehension (Carretti et al., 2020). Contrary to traditional assumptions about speed-comprehension trade-offs, the current results support emerging evidence that strategic reading techniques can enhance both dimensions simultaneously (Fatmawan et al., 2023; Mambua, 2020). The concurrent improvements in speed and comprehension suggest that scanning techniques facilitate more efficient cognitive processing rather than superficial text engagement.

Comparison with Recent Research. The current findings demonstrate consistency with recent experimental studies while providing additional insights into implementation contexts. Mambua's (2020) randomized trial reported 83% effectiveness indicators with grade 11 students, while the current study achieved 84.6% MCC success rates with younger participants, suggesting developmental appropriateness of scanning interventions across secondary grade levels.

The magnitude of improvements (35.2 to 75.1 WPM) compares favorably with Munir et al.'s (2024) findings (59.29 to 83.50 mean scores) while providing more detailed analysis of implementation processes. The two-cycle action research design enabled systematic refinement unavailable in single-intervention studies, contributing methodological insights for future research.

Individual Differences and Cognitive Moderators. The heterogeneous response patterns observed align with recent research on executive function moderators of reading interventions (Carriedo et al., 2024). Students demonstrating larger gains appeared to possess stronger baseline attention regulation and processing speed capabilities, consistent with Carriedo et al.'s (2024) findings regarding cognitive profile interactions with reading outcomes.

These individual differences suggest potential for adaptive interventions tailored to student cognitive profiles. Future implementations might benefit from initial cognitive screening to identify students requiring additional support or alternative strategy instruction (Connor et al., 2004).

Pedagogical Implications. The successful implementation of scanning techniques provides several pedagogical insights:

Systematic Strategy Instruction. The structured approach to scanning instruction, progressing from basic techniques to advanced applications, proved effective for skill development. The two-cycle implementation enabled consolidation of foundational skills before introducing complex strategies.

Integration with Comprehension Emphasis. Explicit instruction linking speed enhancement with comprehension maintenance addressed student concerns about accuracy while promoting strategic reading approaches. This integration appears crucial for sustainable skill development.

Collaborative Learning Opportunities. Peer feedback and strategy sharing enhanced engagement while providing additional practice opportunities. The social dimension of strategy learning merits emphasis in future implementations.

Limitations and Future Research Directions. Several limitations warrant consideration in interpreting these findings:

Methodological Limitations

The action research design, while appropriate for implementation contexts, limits causal inferences compared to randomized controlled trials. Future research should employ experimental designs with control groups to establish intervention causality more definitively.

Generalizability Considerations

The single-site implementation limits generalizability to broader populations and contexts. Multi-site studies incorporating diverse demographic and institutional characteristics would strengthen evidence for scanning technique effectiveness.

Long-term Sustainability

The current study assessed immediate post-intervention outcomes without examining long-term skill maintenance. Follow-up assessments at 3-, 6-, and 12-month intervals would provide crucial evidence regarding intervention sustainability.

Cognitive Moderator Assessment

While individual differences were observed, systematic cognitive assessment was not conducted. Future research should incorporate standardized measures of executive function, processing speed, and working memory to identify intervention moderators more precisely.

Practical Implementation Recommendations

Based on the current findings and recent research, several recommendations emerge for educational practitioners:

1. Systematic Implementation: Adopt structured, multi-cycle approaches enabling skill consolidation and strategy refinement
2. Balanced Emphasis: Maintain explicit focus on both speed enhancement and comprehension quality throughout intervention implementation
3. Individual Adaptation: Consider student cognitive profiles and learning preferences when designing intervention protocols
4. Professional Development: Provide comprehensive teacher training in scanning technique instruction and assessment methods
5. Technology Integration: Explore digital platforms for automated assessment and individualized feedback, following successful models (Parra Soler, 2021)

CONCLUSION

This classroom action research demonstrates the effectiveness of scanning technique interventions for enhancing speed reading proficiency among seventh-grade students at SMP Negeri 81 Maluku Tengah. The systematic two-cycle implementation produced substantial improvements in both reading speed (114.3% increase) and comprehension (31.5% increase), with 84.6% of students achieving minimum competency criteria by intervention completion.

The findings contribute to growing evidence supporting scanning-based pedagogical approaches while providing detailed implementation insights for educational practitioners. The concurrent improvements in speed and comprehension challenge traditional assumptions about reading trade-offs while supporting theoretical models emphasizing strategic processing efficiency.

Key contributions include: (1) Empirical Evidence: Robust quantitative evidence for scanning technique effectiveness in Indonesian educational contexts; (2) Implementation Framework: Systematic two-cycle approach enabling continuous refinement and skill consolidation; (3) Individual Difference Insights: Documentation of heterogeneous response patterns suggesting cognitive moderators; (4) Pedagogical Guidance: Practical recommendations for classroom implementation and teacher professional development.

Future research should employ randomized controlled designs with diverse populations while incorporating cognitive assessments to identify intervention moderators. Long-term follow-up studies examining skill maintenance and transfer would provide crucial evidence for sustainable implementation.

The successful application of evidence-based reading strategies in Indonesian classrooms demonstrates the potential for systematic educational improvement through research-informed practice. These findings support broader initiatives to enhance reading proficiency among secondary school students while contributing to international understanding of effective reading interventions.

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