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Improving The Learning of Vocabulary Using ICT in The Primary School

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Abstract

This study aimed to enhance primary school students' engagement and vocabulary achievement by integrating ICT into learning using the Genre-Based Approach. Conducted as Classroom Action Research (CAR) over two cycles, each with three meetings, the study involved fifth-grade students in a primary school in Sumenep, with data collected through tests, observations, questionnaires, and field notes.

Findings showed a significant increase in student engagement (from 68% to 85%) and vocabulary achievement (from 62.8 in the pre-test to 84.6 in the second cycle's post-test). The results highlight the effectiveness of ICT in fostering engagement and improving learning outcomes, emphasizing the role of the TPACK framework in designing successful vocabulary instruction.

Keywords: Classroom Action research, Information and Communication Technology, Student engagement, Vocabulary achievement.

1. Introduction

The study identifies low vocabulary achievement among fifth-grade students in an Indonesian primary school, caused by lack of interest, monotonous teaching methods, and minimal student engagement. Observations and interviews revealed issues in pronunciation, spelling, and contextual vocabulary use, with over 50% of students scoring below average. Traditional teaching methods, such as rote memorization and teacher-centered instruction, further disengage students.

To address these problems, the study proposes integrating ICT into vocabulary learning, leveraging students' high interest in technology and the school's digital resources. ICT tools, such as interactive presentations, online resources, and educational applications, can enhance pronunciation, spelling, and contextual vocabulary use while increasing student engagement. This approach aims to create a more interactive and effective learning environment, improving both motivation and vocabulary achievement.

2. Literature Review

Vocabulary Mastery

Vocabulary mastery is essential for young learners as it forms the foundation of their communication skills and academic success. Beyond word recognition, students must understand how words function in different contexts. The "depth of vocabulary knowledge" theory emphasizes that learning involves multiple dimensions, including meanings, forms, and associations. Schmitt (2010) highlights that

vocabulary depth is as crucial as breadth, as it directly impacts language use in various settings. A comprehensive approach to vocabulary learning helps young learners develop flexible language skills, enabling effective communication and academic growth. Schmitt (2000) and Graves (2006) describe vocabulary learning as a multi-dimensional process, including form (pronunciation, spelling, and recognition), meaning (concepts, associations, synonyms, and antonyms), and use (grammar, collocations, and contextual application). Nation (2001) further categorizes vocabulary mastery into form (spoken, written, and word parts), meaning (concept associations and multiple meanings), and use (grammatical patterns, collocations, and usage restrictions). Mastery of these components ensures children not only memorize words but also use them effectively in various contexts. The 2022 Merdeka Curriculum focuses on developing both receptive (listening, reading, comprehension) and productive (speaking, presenting, writing) language skills, aligning with CEFR principles. At the elementary level (Phase C, A1), fifth-grade students are expected to build oral and written proficiency, with an emphasis on pronunciation, meaning, and spelling for vocabulary mastery.

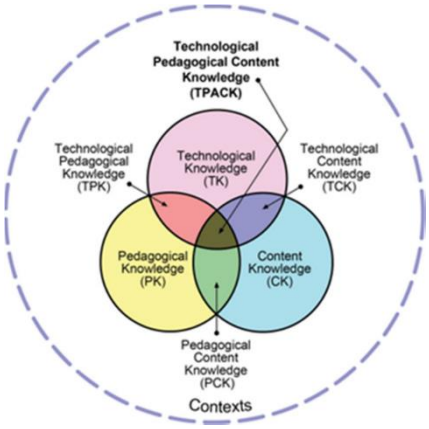
Student Engagement

Student engagement is essential for effective vocabulary learning, as it enhances absorption and retention. Beyond participation, engagement involves emotional and cognitive investment. When students are motivated and involved in interactive activities like discussions, games, or real-life applications, they are more likely to use vocabulary in context, improving both understanding and appropriate usage. Student engagement, as defined by Barkley & Major (2020), involves both emotional and cognitive aspects, requiring active participation and intellectual effort. It includes three key dimensions (Trowler, 2010; Fredricks, Blumenfeld, & Paris, 2003):

1. Behavioral Engagement – Following rules, participating in learning activities, showing effort, concentration, and avoiding disruptive behaviors.
2. Emotional Engagement – Involves students' feelings towards learning, such as curiosity, enjoyment, anxiety, or boredom.
3. Cognitive Engagement – The mental effort students invest, including deep learning strategies, self-regulation, and critical thinking.

These aspects collectively influence students' involvement and learning outcomes.

TPACK



Mishra and Koehler (2006) expanded Shulman's (1986) Pedagogical Content Knowledge (PCK) by introducing Technology Knowledge (TK), forming the Technological Pedagogical Content Knowledge (TPACK) framework. TPACK represents the interaction between content, pedagogy, and technology, influencing student learning. It highlights how technology can address learning challenges, build on prior knowledge, and enhance both new and existing epistemological theories.

The application or website tools to promote vocabulary learning

The integration of digital tools significantly enhances young learners' vocabulary acquisition by providing interactive and engaging learning experiences. Various applications cater to different learning styles, ensuring effective vocabulary retention.

1. Quizlet – An interactive tool with customizable flashcards, quizzes, and games that support memorization, pronunciation, and contextual learning.
2. Kahoot – A game-based platform offering quizzes, jumble exercises, discussions, and surveys to make vocabulary learning fun and competitive.
3. Animation Videos – Multi-sensory learning through visuals and audio, helping students grasp pronunciation, meaning, and contextual usage.
4. Picture Puzzlers – Engaging activities that associate words with images, enhancing comprehension and cognitive development.
5. Canva – A creative platform for designing flashcards, infographics, and presentations, making vocabulary learning more visually engaging.
6. MP3 Audio Files – Aid pronunciation and listening skills by allowing learners to repeatedly hear words in context.

By incorporating these tools, educators can create dynamic, interactive learning environments that foster motivation, enhance retention, and accommodate various learning styles, making vocabulary learning more effective and enjoyable.

Research Methodology

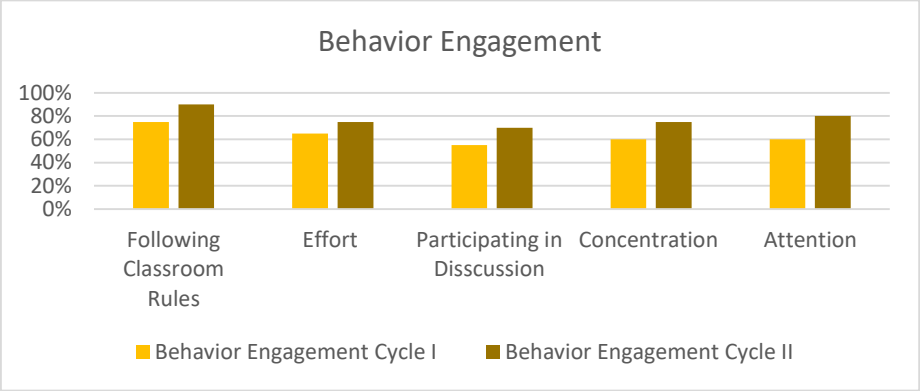
This study employs a CAR design involving fifth-grade students from a primary school in Sumenep. The research was conducted in two cycles, each consisting of three meetings. Quantitative data were obtained through pre-tests and post-tests, while qualitative data were collected through observations and questionnaires. Data analysis was performed using descriptive statistics for quantitative data and descriptive analysis for qualitative data.

Findings and Discussion

The findings from observations and questionnaires reveal that ICT tools effectively enhanced students' engagement in vocabulary learning across behavioral, cognitive, and emotional dimensions.

Behavioral Engagement

In Cycle I, some students struggled with classroom rules, participation, and concentration, especially after playing games or quizzes. However, Cycle II showed significant improvement, with 90% of students making an effort, participating in teamwork, completing tasks on time, and actively engaging in discussions.



A chart analysis further supports these findings, indicating an overall increase in behavioral engagement, including adherence to rules, effort, participation, concentration, and attention. Each indicator saw substantial growth, reflecting improved motivation and focus.

Questionnaire Results

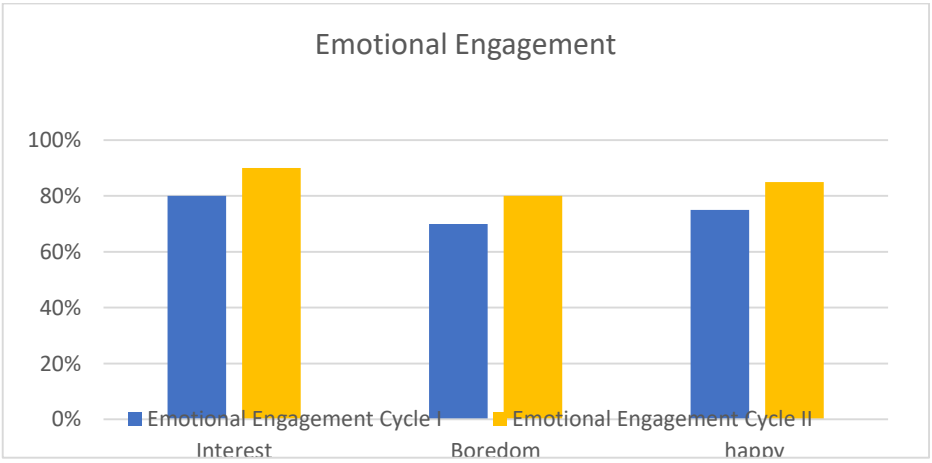
- 100% of students participated in ICT-based vocabulary learning and followed teacher instructions.

- 90% completed vocabulary tasks, with 10% facing minor challenges.

- 80% actively participated in group tasks, while 20% showed less engagement.

- 100% reported improved focus and concentration.

The findings from field notes, observations, and questionnaires indicate that ICT tools positively influenced students' emotional engagement in vocabulary learning. Most students felt happy, interested, and not bored, as the interactive and visually appealing activities enhanced their enthusiasm for learning. Curiosity & Interest: Students showed excitement when the teacher introduced topics using Canva. Enjoyment of Games & Quizzes: The competitive element made learning engaging, though some students needed guidance. Reduced Boredom: Overall, students remained enthusiastic and engaged throughout the lessons.



Based on the bar chart Interest increased from 8000% in Cycle I to 9000% in Cycle II, showing greater enthusiasm. Boredom remained stable around 7000%, suggesting room for improvement in diversifying

activities. Happiness levels increased, indicating that adjustments in teaching strategies successfully enhanced enjoyment.

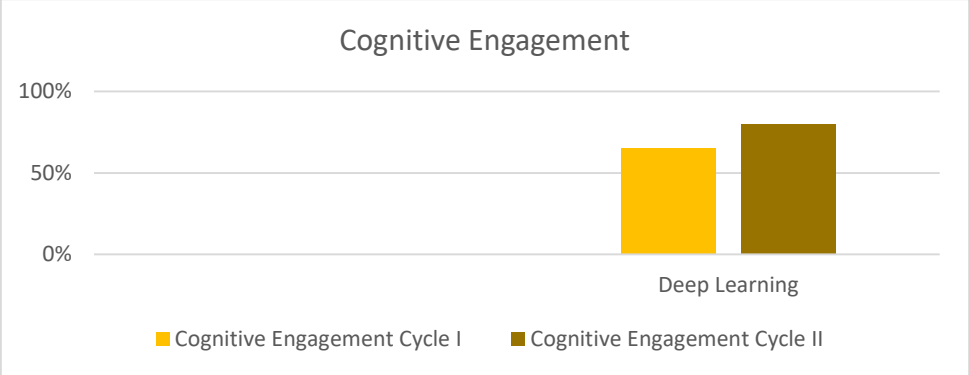
Questionnaire Results

- 90% of students expressed interest in vocabulary learning using ICT.

- 100% reported not feeling bored.

- 100% enjoyed participating in the lessons.

The findings from field notes, observations, and questionnaires indicate that ICT tools played a role in enhancing students' cognitive engagement, particularly in fostering deeper learning strategies. Cycle I: Most students did not take notes or engage in activities that promote deep learning, relying on passive reception. Cycle II: Some students began taking notes, writing down vocabulary during lessons, demonstrating increased cognitive effort.



Based on the bar chart, Deep Learning Engagement: Improved from below 8000% in Cycle I to surpassing 8000% in Cycle II, indicating better understanding and information processing.

Questionnaire Results

- 70% of students reported taking notes during ICT-based lessons, showing active cognitive involvement.

- 30% did not take notes, suggesting differences in learning styles or a need for more encouragement.

Vocabulary achievement

The increase in students achieving the target score from Cycle 1 to Cycle 2, reaching 85%, underscores the importance of reflective teaching practices and responsive strategies. The deliberate and focused use of ICT tools, along with adaptive instruction, proved to be highly effective in enhancing vocabulary achievement.

The findings indicate that an increase in students' engagement positively correlates with an improvement in their vocabulary achievement. As students become more active, attentive, and involved in the learning process, their ability to understand and retain new vocabulary significantly improves. This relationship underscores the importance of fostering student engagement as a key factor in enhancing overall learning outcomes, particularly in vocabulary development.

3. Discussion

Student engagement in vocabulary learning involves behavioral, emotional, and cognitive dimensions (Barkley & Major, 2020). Before ICT integration, engagement was low, with minimal participation and enthusiasm. The implementation of tools like Kahoot, Quizlet, and animation videos significantly enhanced engagement across all dimensions.

Behavioral Engagement: ICT tools encouraged active participation. Game-based quizzes (e.g., Kahoot) increased motivation, and multimedia elements (MP3, flashcards) sustained attention. Emotional Engagement: Animation videos reduced anxiety and boredom, fostering excitement and enjoyment (Mo, 2011). Cognitive Engagement: Students engaged in deeper learning through activities like digital flashcards and self-monitoring via Quizlet, promoting metacognitive skills (Barkley & Major, 2020).

The Technological, Pedagogical, and Content Knowledge (TPACK) model guided the intervention: Technological Knowledge (TK): Tools like Quizlet and MP3 audio files supported vocabulary recall and pronunciation. Pedagogical Knowledge (PK): The shift to student-centered learning (e.g., peer discussions, collaborative tasks) improved engagement. Content Knowledge (CK): Vocabulary learning was embedded in meaningful contexts (e.g., descriptive texts), ensuring practical application.

This study explored the role of ICT tools and the genre-based approach in improving vocabulary learning among primary school students. Vocabulary is a critical component of language acquisition, as it enables comprehension, expression, and communication (Alqahtani, 2015). However, initial findings showed that students struggled with memorization, pronunciation, spelling, and active participation due to traditional rote-based teaching methods (Nation, 2001). To address these challenges, the study integrated ICT tools such as Canva, MP3, Quizlet, and Kahoot with the genre-based approach

Pre-test and post-test results revealed a significant improvement, with 85% of students reaching the target score by Cycle 2. 70% of students actively participated in note-taking during ICT-based lessons, demonstrating their effort to retain vocabulary. Pronunciation & Spelling: Quizlet's audio features and MP3 files improved pronunciation by providing accurate models (Cameron, 2001), while Kahoot quizzes reinforced spelling through immediate feedback (Harmer, 1991). ICT tools helped students associate vocabulary with real-world experiences, enhancing retention (Schmitt, 1997; Nation, 2001).

4. Conclusion

The integration of ICT in vocabulary learning in primary schools has been proven to increase student engagement and achievement. This study emphasizes the importance of utilizing the TPACK framework to support technology-based learning. The study's implications suggest the need for teacher training in ICT implementation to optimize English language instruction at the primary level.