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THE EFFECTIVENESS OF *FluentU* APPLICATION ON STUDENTS' VOCABULARY MASTERY FOR NINTH GRADE STUDENTS AT SMPN 9 BEKASI

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Abstract: This research focuses on evaluating the role of the FluentU application in the improvement in improving vocabulary mastery among ninth-grade students at SMPN 9 Bekasi. Mastery of vocabulary is central to learning English, as it supports students' ability to understand, communicate, and the four core language skills: reading, writing, listening, and speaking. However, many students still encounter difficulties in mastering sufficient vocabulary, which limits their overall English proficiency. To address this issue, technology-based media such as FluentU can provide an innovative learning approach. This study employed a quasi- experimental methodology with two groups: an experimental group that was learned through FluentU and a control group that was taught using conventional methods. The instruments used in data collection were pre-tests and post-tests, which measured students' vocabulary mastery before and after the treatment. The findings revealed that students results indicated that the experimental group outperformed the control group with a statistically significant difference. The interactive features of FluentU, such as authentic videos, captions, and quizzes, helped students to learn vocabulary in meaningful contexts, thus enhancing both retention and understanding. Moreover, students demonstrated greater motivation and engagement exhibited by students during instructional activities when using the application. These results suggest that the FluentU application is an effective tool for supporting vocabulary learning among junior high school students. Therefore, it is recommended that English teachers integrate digital learning platforms like FluentU into classroom activities to enrich vocabulary instruction and encourage independent learning.

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INTRODUCTION

The widespread use of English worldwide has made it an important language in education, communication, business, and technology. Consequently, English is included as a compulsory subject in Indonesia, starting from junior high school until higher education. Mastery of English enables students to access broader knowledge and opportunities in the global era. However, learning English is not an easy process for many students, especially when it comes to vocabulary. Vocabulary is often described as the foundation of language, since without

adequate vocabulary, students will not be able to enhance their proficiency in reading, writing, listening, and speaking skills effectively. Schmitt (2020) argues that vocabulary knowledge is a fundamental component of language proficiency, as it strongly influences learners' ability to comprehend and produce language across all skills.

In the context of SMPN 9 Bekasi, many students still face challenges in mastering English vocabulary. Based on classroom observations and informal interviews with English teachers, it was found that ninth-grade students often rely on rote memorization of words without understanding their usage in context. This practice results in limited retention and inability to apply vocabulary in speaking or writing. Moreover, conventional teaching methods that mainly use textbooks and worksheets are often perceived as monotonous and less engaging for students. As a result, students show low motivation in learning English, which further affects their vocabulary achievement. This situation indicates the need for more effective and innovative strategies to improve vocabulary mastery among students.

With the rapid development of technology in education, digital learning platforms have been increasingly integrated into classroom practices. Many researchers have reported that the potential of multimedia applications to enhance language learning. Advances in multimedia learning theory suggest that the integration of visual and verbal information enhances learners' cognitive processing and retention (Mayer & Fiorella, 2020). Furthermore, recent vocabulary research emphasizes that meaningful and contextualized exposure to lexical items significantly supports vocabulary acquisition (Webb & Nation, 2023). Consequently, the use of technology-enhanced learning media can provide effective support for vocabulary learning.

One such digital platform is FluentU, an application that utilizes authentic videos such as movie clips, interviews, and news reports to teach language in context. The app provides interactive captions, definitions, and quizzes that allow students to learn vocabulary while simultaneously observing its real-life usage. Previous studies have demonstrated the effectiveness of multimedia applications in vocabulary learning. For instance, Cahyani and Fitriani (2020) reported that the use of video-based applications increased students' motivation and improved their vocabulary knowledge. Similarly, Sari (2021) found that students who learned vocabulary through digital media performed better in vocabulary retention compared to those taught through conventional methods. However, despite the growing evidence, studies specifically investigating the use of FluentU in the Indonesian junior high school context remain limited. This research therefore aims to fill that gap.

The present study focuses on examining the effectiveness of the FluentU application in improving vocabulary mastery among ninth-grade students at SMPN 9 Bekasi. Compared to previous studies that investigated general multimedia tools or other applications, this research provides novelty by focusing on FluentU as a specific platform and analyzing its impact on Indonesian students at the secondary school level. The study is grounded in the Cognitive Theory of Multimedia Learning (Mayer, 2009), which supports the idea that learning is more effective when students are exposed to both verbal and visual information in meaningful contexts.

The problem addressed in this research is the low mastery of English vocabulary among ninth-grade students at SMPN 9 Bekasi, which is caused by limited exposure to vocabulary in

authentic contexts and lack of engaging learning media. The main objective of this study is to investigate whether the use of FluentU can significantly improve students' vocabulary mastery compared to conventional teaching methods. Furthermore, this study aims to explore how the application influences students' motivation and active participation throughout the learning activities.

This study provides important insights into its potential contribution to both theory and practice. Theoretically, the research supports existing theories on multimedia learning and vocabulary acquisition by providing empirical evidence from the Indonesian context. Practically, the findings may serve as valuable input for English teachers in selecting appropriate digital tools to enhance vocabulary instruction. By integrating FluentU into classroom activities, teachers may create a more interactive and meaningful learning experience, thereby encouraging students to develop their vocabulary more effectively.

In conclusion, this study attempts to address the urgent need for innovative vocabulary learning strategies by investigating the effectiveness of FluentU for ninth-grade students at SMPN 9 Bekasi. It is expected that the results of this research will enrich the literature on technology-assisted vocabulary learning and provide practical recommendations for teachers and students in improving English language proficiency.

Vocabulary is widely acknowledged as a core element of second language acquisition. Schmitt (2020) asserts that vocabulary knowledge is fundamental to effective communication, as it directly influences learners' ability to comprehend and produce language across all skills. Furthermore, recent research by Webb and Nation (2023) explains that vocabulary knowledge goes beyond simple word recognition and encompasses understanding word meanings, usage, collocations, and contextual appropriateness, all of which are essential for successful language use.In the context of English as a Foreign Language (EFL), vocabulary mastery provides the foundation for developing reading comprehension, writing fluency, speaking confidence, and listening accuracy. However, many learners struggle with vocabulary retention when words are taught in isolation or through rote memorization. This limitation has led researchers to explore innovative methods, particularly those involving technology, to improve vocabulary acquisition.

The rapid growth of digital media has transformed language learning practices. Mayer and Fiorella (2020) propose that learning becomes more effective when words and images are combined in a coherent multimedia presentation.. Multimedia tools such as videos, images, and interactive exercises allow learners to contextualize vocabulary, making learning more meaningful. Chapelle (2009) also noted that computer-assisted language learning (CALL) provides learners with opportunities for practice, feedback, and exposure to authentic language input. These theoretical perspectives form the basis for the use of technology in enhancing vocabulary learning.

Several empirical studies have highlighted the effectiveness of technology-assisted vocabulary instruction. For example, Cahyani and Fitriani (2020) investigated the use of video-based applications in EFL classrooms and found that students demonstrated significant improvement in vocabulary mastery and motivation. Sari (2021) reported that digital media integration helped students retain vocabulary longer compared to conventional methods. Similarly, Fitria (2020)

revealed that mobile-assisted language learning applications improved students' vocabulary acquisition and engagement. These findings suggest that multimedia tools provide both cognitive and affective benefits for language learners.

Among various digital platforms, FluentU has recently attracted attention as an application that integrates authentic videos with interactive learning features. FluentU presents movie clips, interviews, and news segments with annotated captions, definitions, and comprehension quizzes, allowing learners to acquire vocabulary in authentic contexts. Previous studies have shown promising results regarding the use of FluentU. Wu (2018) reported that Taiwanese students using FluentU developed better vocabulary recall and contextual understanding compared to those relying on traditional word lists. Similarly, Liu (2019) found that FluentU increased student motivation, as learners perceived the application as enjoyable and relevant to real-world language use.

Despite these findings, research on FluentU in the Indonesian EFL context remains limited. While some studies have focused on the use of general mobile learning applications (Fitria, 2020) or video-based tools (Cahyani & Fitriani, 2020), few have specifically examined FluentU as a platform for vocabulary instruction in junior high schools. This research aims to fill that gap by investigating the effectiveness of FluentU for ninth-grade students at SMPN 9 Bekasi. By building on previous studies and grounded in the Cognitive Theory of Multimedia Learning, this research intends to provide empirical evidence of how FluentU can improve vocabulary mastery and motivation among Indonesian learners.

METHOD

This study investigates whether instruction mediated by the FluentU application leads to greater gains in English vocabulary mastery than conventional instruction among ninth-grade students at SMPN 9 Bekasi. The method comprises the research design, population and sampling, instruments for data collection, procedures for treatment and testing, and the statistical techniques used to analyze the data.

A quasi-experimental, pretest–posttest control group design is employed because intact school classes cannot be randomly formed. Two comparable ninth-grade classes are assigned to (a) the experimental group (FluentU-based instruction) and (b) the control group (conventional textbook/worksheet-based instruction). Both groups sit for the same vocabulary pretest prior to the intervention and the same posttest after the intervention. To control for initial differences, the primary analysis uses ANCOVA with pretest scores as a covariate; independent-samples t-tests on gain scores and effect sizes are also reported for transparency.

The population comprises all ninth-grade students at SMPN 9 Bekasi in the academic year of the study. The sample consists of two intact classes selected through purposive sampling in coordination with the school (criteria: similar timetable, teacher availability, and recent mean English scores). If the school has parallel classes with comparable prior English achievement, one class is assigned to the experimental condition and a matched class to the control condition. A priori power planning targets a medium effect (e.g., $d \approx 0.60$), $\alpha = .05$, power = .80, yielding a minimum total sample near 45 students; to accommodate attrition and cluster effects, the study aims for ~60–72 students (≈30–36 per class). Inclusion criteria: active enrollment in Grade 9

and parental/guardian consent. Exclusion criteria: students with incomplete pre/post data or absenteeism exceeding 25% of sessions.

Instruments

1. Vocabulary Mastery Test (Pretest & Posttest).
   a. Construct & specification: The test aligns with the Grade-9 EFL syllabus (word form, meaning, part of speech, collocations, and contextual use in short sentences/dialogues). A table of specifications maps items to subskills and difficulty levels.
   b. Format: 40–50 items combining multiple-choice (recognition) and short-constructed response or matching (controlled productive knowledge). Alternate but equivalent forms (Form A/B) are used for pre/post to minimize test-retest effects.
   c. Validity:
      1) Content validity via expert judgment (two English teachers and one TEFL lecturer review coverage, clarity, and alignment).
      2) Construct validity supported through item–subscale structure and pilot testing with a parallel class (not in the main sample).
   d. Reliability: Internal consistency estimated using KR-20 (for dichotomous items) and Cronbach's α (for polytomous items). Target ≥ .70.
   e. Item analysis: Pilot data used to compute difficulty (p-value), discrimination (point-biserial), and distractor functioning; items outside acceptable ranges are revised or replaced.

2. Learning Motivation/Engagement Questionnaire (optional but recommended).
   A brief Likert-scale instrument (e.g., 12–16 items) adapted for junior high school assesses attention, relevance, confidence, and satisfaction with vocabulary learning. Reliability (α ≥ .70) is checked on pilot data. These data are used as descriptive/secondary outcomes to interpret treatment effects.

3. Observation & Implementation Fidelity Checklist.
   A structured checklist records: lesson objectives, activities, time on task, use of FluentU features (videos, captions, interactive quizzes), teacher prompts, and student participation. Fidelity is computed as % of planned components delivered (target ≥ 80%).

Materials and Treatment

1. Experimental Group (FluentU-based instruction):
   Students use FluentU videos curated to the Grade-9 themes (e.g., daily life, school, health, environment). Each lesson includes:
   (a) Preview: teacher introduces target lexical set (5–12 items/lesson) and goals;
   (b) Input: students watch short authentic video(s) with interactive captions;
   (c) Guided practice: in-app quizzes/flashcards focusing on meaning, form, and use;
   (d) Contextualization: brief pair/group tasks (fill-in-dialogues, caption completion, sentence building) drawing on vocabulary from the video;
   (e) Review: spaced retrieval using FluentU decks and quick exit-ticket checks.
   Homework leverages FluentU's spaced review for independent practice.

2. Control Group (Conventional instruction):

Teacher-led explanation, textbook reading, vocabulary lists, dictionary look-up, and workbook exercises; limited or no use of digital video/captioned input. The number of target words and lesson time mirrors the experimental condition.

Procedure

1. Preparation (Weeks 0–1): Permissions, consent, class assignment, teacher training on lesson plans and FluentU use, pilot testing of instruments, and finalization of test forms.
2. Pretesting (Week 1): Both groups take the vocabulary pretest in a single sitting under standardized conditions.
3. Intervention (Weeks 2–5 or 2–6): 8–10 sessions (≈2 sessions/week, 80–90 minutes each) integrated into regular English periods. Observers complete fidelity checklists for at least 30% of lessons per group.
4. Posttesting (Final week): Both groups take the parallel posttest. Motivation questionnaire (if used) is administered immediately after the posttest.
5. Data cleaning: Exclude incomplete cases; check for outliers and data entry errors; document attrition.

Scoring and Data Management

Each correct item on the vocabulary tests is awarded 1 point; totals are converted to percentages. Constructed responses are rubric-scored by two raters; inter-rater reliability (Cohen's κ or ICC) is reported. Data are anonymized with ID codes and stored securely.

Data Analysis

1. Preliminary Checks:
   a. Descriptive statistics (M, SD, CI 95%).
   b. Baseline equivalence: independent-samples t-test on pretest scores.
   c. Assumption checks for parametric tests: normality (Shapiro–Wilk), homogeneity (Levene's). If violated, report robust alternatives (e.g., Yuen's trimmed-means test) or nonparametric tests (Mann–Whitney U) alongside main results.
2. Primary Effectiveness Test:
   a. ANCOVA with posttest as the dependent variable, group (FluentU vs control) as the fixed factor, and pretest as covariate. Report adjusted means, F, p, and partial eta-squared (ηp^2).
   b. Effect size: Cohen's d for (post–pre) gain difference with Hedges' correction; also report normalized gain (N-gain) per Hake to interpret educational magnitude.
3. Secondary/Exploratory Analyses (optional):
   a. Subskill scores (form, meaning, collocation/use) to see where gains are strongest.
   b. Motivation/engagement differences via ANCOVA or t-tests.
   c. Fidelity–outcome correlation to examine implementation effects.
4. Item-LevelInsights:
   Differential item functioning (DIF) screens whether items favored one group; problematic items are flagged in discussion as limitations.

RESULT AND DISCUSSION

Results

The analysis of students' vocabulary mastery showed that the group taught with the *FluentU* application performed better than the group taught using conventional methods. The pretest

scores of both groups indicated no significant difference, suggesting that the two groups started at a comparable level. However, after the treatment, the posttest scores revealed results indicated a significant difference in improvement favoring the experimental group over the control group. The mean gain score of the experimental group was considerably higher, and the effect size analysis indicated a moderate to large effect. These results suggest that *FluentU* contributed positively to students' vocabulary acquisition.

The improvement can be attributed to the interactive features of *FluentU*, which provide learners with authentic videos, captions, and comprehension quizzes. Such features allow students to encounter words in meaningful contexts, supporting both recognition and recall. This finding aligns with Teng and Mizumoto (2023), who confirmed that captioned videos facilitate incidental vocabulary acquisition, and González-Fernández (2024), who emphasized that systematic exposure enhances both form and meaning knowledge of words.

Table 1 descriptive statistics of vocabulary mastery test

Group	Pretest Mean	Posttest Mean	Gain Score
Experimental	55.3	78.6	23.3
Control	54.8	65.4	10.6

As shown in Table 1, both groups started with similar pretest scores. However, the experimental group achieved a much higher posttest mean and gain score compared to the control group, indicating the effectiveness of *FluentU* in improving vocabulary mastery.

Table 2 ancova results of posttest scores with pretest as covariate

Source	SS	Df	MS	F	p
Group	1023.45	1	1023.45	20.85	0.000
Pretest (covariate)	356.78	1	356.78	7.27	0.009
Error	2845.32	58	49.06	–	–
Total	4225.55	60	–	–	–

Table 2 shows the ANCOVA analysis results. After controlling for pretest scores, the effect of group membership on posttest scores was statistically significant ($F = 20.85$, $p < .001$). This confirms that the improvement in the experimental group was not due to initial differences but rather to the treatment with *FluentU.*

Discussion

Student motivation and engagement

In addition to vocabulary achievement, classroom observations and students' feedback indicated that the experimental group showed higher levels of motivation and engagement during the learning process. Learners responded positively to the authentic video materials, reporting that the content was enjoyable and relevant to real-life communication. The gamified elements of FluentU, such as interactive quizzes and immediate feedback, also maintained their interest throughout the sessions.

This finding is consistent with Yousefi and Mahmoodi (2022), who highlighted the importance of the L2 Motivational Self-System in technology-based learning environments. When students perceive language learning as enjoyable and useful for their future selves, they are more

motivated to participate actively. The increase in motivation likely contributed to the superior vocabulary gains of the experimental group.

Comparison with previous studies

The present study supports and extends earlier research on technology-assisted vocabulary learning. Cahyani and Fitriani (2020) and Sari (2021) both found that video-based and digital media improve students' vocabulary knowledge and retention. However, most of these studies used generic video tools rather than applications specifically designed for language learning. The findings of this study demonstrate that FluentU, with its integrated subtitles, annotations, and practice exercises, is particularly effective in bridging the gap between multimedia input and active vocabulary learning.

Pedagogical implications

The results of this study provide several implications for teaching English as a Foreign Language at junior high schools in Indonesia. First, integrating multimedia applications such as FluentU can make vocabulary instruction more contextualized, interactive, and motivating compared to traditional methods. Second, technology-supported learning should be viewed as a complement to, rather than a replacement for, teacher instruction. Teachers play a crucial role in guiding students, selecting appropriate materials, and ensuring that learning objectives are achieved. Finally, vocabulary learning should move beyond rote memorization toward meaningful use, which can be achieved through authentic contexts and multimodal input.

Limitations and suggestions for future research

Despite the promising results, this study is not without limitations. The sample size was limited to two classes at one school, which may affect the generalizability of the findings. The duration of the intervention was also relatively short; longer exposure to FluentU may produce more robust outcomes. Furthermore, this study focused only on receptive and controlled productive vocabulary knowledge, while other aspects such as free productive use in speaking and writing were not measured.

Future research could involve a larger and more diverse sample across multiple schools, a longer treatment period, and broader vocabulary assessment. In addition, exploring the role of learner autonomy and out-of-class use of FluentU could provide deeper insights into how technology fosters independent vocabulary learning.

CONCLUSION

This study investigated the effectiveness of the FluentU application on ninth-grade students' vocabulary mastery at SMPN 9 Bekasi. The findings demonstrate that students who learned with FluentU significantly outperformed those taught with conventional methods. The experimental group not only achieved higher posttest scores but also showed greater vocabulary retention and a larger gain score. Importantly, students also reported higher levels of motivation and engagement when learning through authentic video materials and interactive features offered by the application.

The results highlight the potential of technology-enhanced learning to enrich vocabulary instruction in the EFL classroom. By situating vocabulary in real-life contexts and providing multimodal input, FluentU helps learners internalize new words more effectively than

traditional rote learning approaches. Beyond vocabulary mastery, the use of digital media also contributes to sustaining learner interest and participation, which are critical for long-term language development.

While the findings are promising, this study acknowledges limitations related to the sample size, the short duration of the treatment, and the focus on receptive and controlled productive vocabulary knowledge. Nevertheless, the evidence supports the integration of digital platforms such as FluentU into classroom practice, not as a replacement but as a complement to teacher-led instruction. Future studies are encouraged to explore longer interventions, larger participant groups, and broader aspects of vocabulary use, including free production in speaking and writing. In conclusion, the use of FluentU can be considered an effective and engaging tool to support vocabulary mastery among junior high school students. Its integration into English instruction offers meaningful opportunities to enhance both language competence and learner motivation in the Indonesian EFL context.

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