

E-PROCEEDING STSIIC

SMART TECHNOLOGY AND SUSTAINABILITY INTERNATIONAL CONFERENCE

“Research Technology Advancement in
Sustainable Development through IR
4.0 for a Green Future”

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In an era defined by rapid technological advancements and an urgent call for sustainability, the integration of smart technology has become a pivotal force in shaping a greener, more efficient future. The **Smart Technology and Sustainability International Conference (STSIC)** brings together global innovators, researchers, policymakers, and industry leaders to explore cutting-edge solutions that drive sustainable development. This conference serves as a dynamic platform for knowledge exchange, fostering collaborations that leverage artificial intelligence, IoT, advanced systems, and smart infrastructure to address pressing environmental and societal challenges. By bridging the gap between technology and sustainability, we aim to pave the way for resilient, energy-efficient cities, industries, and communities worldwide.

This is an inaugural conference co-hosted by Universiti Kebangsaan Malaysia, Politeknik Sultan Haji Ahmad Shah and Kolej Komuniti Kuantan, Pahang. We are proud to have our international counterparts Universitas PGRI Madiun (Indonesia), Guangxi Polytechnic of Construction (China), Politeknik Negeri Jakarta (Indonesia) and Institute of Brunei Technical Education (Brunei) on board as our strategic partners. This programme is also proudly supported by the Malaysia Board of Technologists (MBOT).

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Enhancing English Word Stress Acquisition through Multimodal Approaches: An Action Research on Vocational Students' Learning Preferences

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ABSTRACT:

This action research explores the impact of multimodal learning strategies, specifically TikTok videos, on enhancing English word stress acquisition among vocational students with low English proficiency. The study, conducted at Kolej Vokasional Sandakan 2, integrates visual and kinaesthetic learning methods to match students' learning preferences. A mixed-methods approach was employed, including pre-tests, post-tests, surveys, and semi-structured interviews, to gather both quantitative and qualitative data. The research investigates how different learning preferences (visual, kinaesthetic, auditory) influence students' ability to perceive and produce word stress patterns in English. The results indicate significant improvement in students' pronunciation skills, particularly among visual and kinaesthetic learners. Moreover, these findings suggest that multimodal approaches, tailored to students' learning preferences, can significantly enhance pronunciation outcomes, student engagement, and overall English proficiency. The study provides valuable insights for educators in vocational settings, promoting the integration of digital platforms and interactive learning methods to improve language teaching and learning.

Keywords: word stress, multimodal learning, TikTok, english pronunciation, vocational education, action research.

1. INTRODUCTION

Pronunciation, particularly word stress, is an essential but often overlooked aspect of English language learning, especially in non-native contexts. For vocational students in Malaysia, mastering English word stress is vital for effective communication in their professional fields, such as culinary and bakery services. However, many vocational students face challenges in acquiring correct word stress patterns due to their limited exposure to English. This action research aims to address this gap by integrating multimodal learning strategies to enhance the pronunciation of English word stress. Through the use of platforms like TikTok, which aligns with the learning preferences of visual and kinaesthetic learners, this study investigates how various teaching methods can improve word stress acquisition.

The research involves first-year vocational students from the Bakery & Pastry and Culinary programs at Kolej Vokasional Sandakan 2, all of whom were identified as having low English proficiency. However, the study's limitations should be acknowledged. These include the relatively short intervention duration (6 weeks), the specific student group (first-year students with low English proficiency), and the absence of a long-term retention study, which could provide insight into the sustainability of the intervention's effects over time.

2. METHODOLOGY

This study employs a mixed-methods research design that combines both quantitative and qualitative data collection techniques. The primary aim is to investigate how students' learning preferences (visual, kinaesthetic, auditory) influence their ability to acquire and perceive English word stress patterns.

2.1 Research Design

A pre-test and post-test design was used to evaluate changes in students' word stress production and perception.

In addition, surveys and semi-structured interviews were conducted to gain insights into the students' engagement and perceptions of the multimodal intervention using TikTok.

2.2 Participants

The participants were 60 first-year vocational students from the Bakery & Pastry and Culinary programs at Kolej Vokasional Sandakan 2. These students were selected due to their low English proficiency, which made them ideal candidates for this intervention. The students were classified based on their learning preferences using a learning styles inventory into three groups: visual, kinaesthetic, and auditory learners.

2.3 Data Collection Tools

1. **Pre-test and Post-test:** A set of words and sentences were used to assess the students' pronunciation of word stress. The same test was administered at the beginning and end of the intervention.
2. **Surveys:** Surveys were designed to assess students' learning preferences, engagement levels, and perceptions of the TikTok-based intervention.
3. **Interviews:** Semi-structured interviews were conducted with 10 students to gather deeper insights into their experiences and thoughts on the multimodal learning approach.

2.4 Intervention

The intervention involved using TikTok videos to teach English word stress. Three TikTok videos were selected based on their alignment with the students' learning preferences and their effectiveness in demonstrating word stress patterns.

TikTok Video 1: "Mastering English Word Stress Patterns" by @speakenglishwithtiffani.

TikTok Video 2: "Understanding Word Stress in English Speaking" by @vibrantvia.

TikTok Video 3: "Understanding English Stress Patterns for Learners" by @bigworldenglish.

Each video incorporated visual demonstrations and interactive cues, which were ideal for visual and kinaesthetic learners. Students watched the videos in class and at home, followed by interactive activities, such as tapping or clapping to mark stressed syllables.

3. RESULTS AND DISCUSSION

3.1 Quantitative Findings

The findings indicate a significant improvement in the students' word stress production and perception after engaging with the TikTok videos, particularly among visual and kinaesthetic learners. These results align with recent studies on multimodal learning. For instance, Rahmawati et al. (2023) found that using TikTok videos significantly improved pronunciation in L2 learners, echoing our findings. However, while this intervention was effective in the short term, further research is needed to assess its long-term impact on language retention and whether similar results can be replicated across diverse vocational settings and learner groups. The table below summarizes the descriptive statistics for both groups:

Table 1. *Students' Ability to Produce and Perceive Word Stress Patterns*

Group	Test	Mean Score (M)	Standard Deviation (SD)	Range
Experimental Group	Pre-test	45.30	6.58	35-55
	Post-test	72.15	8.02	55-90
Control Group	Pre-test	44.25	6.70	30-55
	Post-test	58.60	7.60	50-75

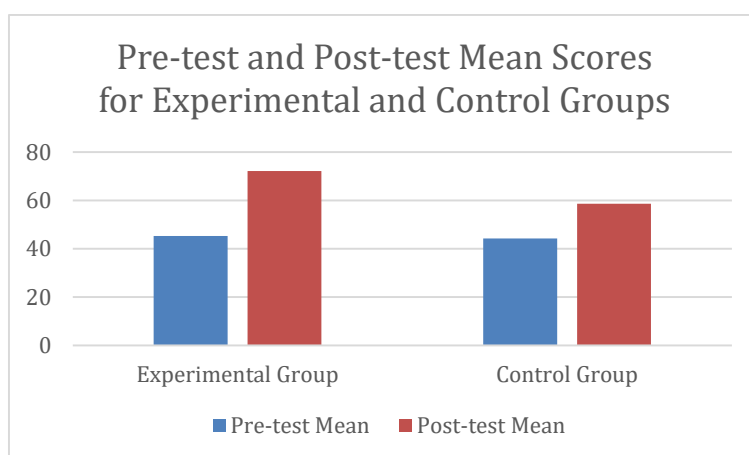


Figure 1. *Pre-Test And Post-Test Mean Scores for Experimental and Control Groups*

Figure 1 summarizes the descriptive statistics for both groups, visually highlighting the improvements in the experimental and control groups

3.2 Inferential Statistics

A paired-samples t-test was performed to compare pre-test and post-test scores for both groups. The results indicated that both groups improved significantly, with the experimental group showing a larger improvement.

Experimental Group - Paired-Samples t-Test:

$t(29) = -17.56, p < 0.001, \text{Cohen's } d = 2.89$ (Large Effect Size)

Control Group - Paired-Samples t-Test:

$t(29) = -9.12, p < 0.001, \text{Cohen's } d = 1.66$ (Large Effect Size)

The experimental group (who used TikTok videos) exhibited a much larger effect size, suggesting that the multimodal approach significantly enhanced their word stress perception and production.

3.3 Qualitative Findings

The survey results indicated that 85% of the students in the experimental group found TikTok videos helpful in improving their pronunciation. In-depth interviews revealed that students appreciated the short, interactive format of the TikTok videos, which allowed them to engage with the content repeatedly at their own pace.

One participant mentioned: "The TikTok videos were really useful because I could watch them anytime. The tapping activity made it easy to remember the stressed syllables."

4. CONCLUSION

The study confirms that integrating multimodal learning approaches, specifically using TikTok videos, significantly improves vocational students' ability to perceive and produce English word stress. The results show that students with visual and kinaesthetic learning preferences particularly benefitted from the intervention. This research highlights the importance of tailoring teaching strategies to accommodate diverse learning styles, ensuring that all students, particularly those with low English proficiency, can achieve better pronunciation outcomes.

Future work could explore how other social media platforms, such as Instagram or YouTube, might be used to support language learning, especially in vocational settings where English proficiency is crucial.

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