STUDENT JOURNAL OF
TECHNOLOGY AND EDUCATIONAL RESEARCH
ISSN (Print): 2945-381X; (Online): 3082-5563 | VOLUME 2, ISSUE 2 (2025)

EFFECTIVENESS OF SEMANTIC-FOCUSED TIKTOK VIDEOS AS A LEARNING RESOURCE AND VOCABULARY PROFICIENCY OF FRESHMAN EDUCATION STUDENTS

Hazelle Maigne V. Adriano, King Jhames S. Manganaan, Tasminah A. Said,
Crishiela R. Santos, Jennelyn L. Raymundo
Isabela State University-Echague Campus

Article History:
Received: Nov. 7, 2025
Revised: Dec. 15, 2025
Accepted: Dec. 27, 2025

Keywords:
TikTok as a learning resource, semantic-focused TikTok videos, vocabulary proficiency, Purposive Communication, technology-enhanced learning

DOI:
10.65141/sjter.v2i2n6

Abstract

This study was conducted to determine the effectiveness of semantic-focused TikTok videos as a learning resource in improving the vocabulary proficiency of first-year Education students enrolled in the Purposive Communication course at Isabela State University–Echague during the Academic Year 2025–2026. A quasi-experimental research design employing a pre-test–post-test approach was used to assess students' vocabulary proficiency before and after exposure to the intervention. The study focused on four vocabulary domains: word recognition, word usage, meaning inference, and contextual understanding.

The findings revealed that the students' vocabulary proficiency prior to the intervention was generally at the "Passed" to "Below Fair" level, while their post-test performance significantly improved to the "Good" to "Satisfactory" level across all domains. Notably, word recognition and word usage showed the highest level of improvement. Statistical analysis further showed no significant differences in the level of vocabulary improvement when the respondents were grouped according to sex and academic program. Moreover, the implementation of semantic-focused TikTok videos resulted in a statistically significant difference between the pre-test and post-test scores, indicating the effectiveness of the intervention. A significant positive relationship was also found between the students' pre-test and post-test vocabulary proficiency scores.

These results suggest that semantic-focused TikTok videos have strong potential as an engaging and effective supplementary learning resource for vocabulary enhancement in higher education. The study underscores the importance of integrating technology-based instructional materials that align with students' learning preferences to enhance vocabulary proficiency. Recommendations were provided for teachers, students, school administrators, curriculum planners, and

future researchers to maximize the pedagogical benefits of TikTok while addressing instructional and contextual challenges.

INTRODUCTION

In the Philippine higher education context, among the long-standing problems of college students is their weak mastery of vocabulary. Vocabulary is the foundation of language proficiency, which is the foundation of effective communication, academic understanding, and critical thinking skill building. Lacking vocabulary mastery, college students lag behind in understanding complex concepts, effectively conveying ideas, and interpreting academic texts, especially in colleges where English is the primary medium of instruction (Kilat et al., 2024). Linguistic inadequacy may prevent them from effectively engaging in healthy classroom discussions, getting high scores on tests, and performing well in academic writing tasks. Vocabulary mastery, thus, goes beyond mere memorization; it is the capability to understand, use, and manipulate words suitably in both spoken and written forms of academic discussion (van Zeeland & Schmitt, 2017).

The development of vocabulary skills is of particular interest to language teachers because students often view the development of vocabulary as one of the most difficult aspects of second language acquisition, due to the vast number of various meanings, collocations, and contextual presuppositions (Webb & Nation, 2017). Effective vocabulary skills enable learners to make connections between ideas, improve their reading capabilities, and enable more effective and accurate self-expression. In higher education, students with a greater scope of vocabulary skills are more self- assured and better placed to handle academic texts and assignments. The development of vocabulary skills is, therefore, a vital goal for learners and teachers in the higher education context. Based on Kilat et al. (2024), learners are expected to have a rich and extensive vocabulary to read English texts and academic materials.

Consistent with this argument, a reflexive case study in a rural school in Terengganu identified that the disengagement of students with conventional reading practices was a major obstacle to vocabulary development. The study discovered that multimodal, interactive reading practices with audio and visual components were much more effective in engaging learners and fostering vocabulary learning (Ismail et al., 2019). This strategy, consistent with the Sustainable Development Goals (SDG) 2030, highlights the realization of harnessing technology and media in pedagogical approaches to improve learner engagement and learning achievements (UNESCO, 2020).

The increasing use of technology in learning environments has established social media sites as helpful tools for language learning. University students, for example, are common users of online media sites where they are exposed to English-language materials every day. Al Arif and Handayani (2021) discovered that English Foreign Language (EFL) learners have positive attitudes towards learning the use of social media for language development, specifically because these sites ensure interaction and motivation. Furthermore, Wei (2023) emphasized that learning-oriented mobile applications enhance independent learning, facilitate vocabulary learning, and enhance learners' confidence in using language.

Among the numerous digital media of the present time, TikTok has drawn extensive interest for its potential application in the educational domain. TikTok, originally designed as an entertainment platform, has evolved into a micro-learning platform, particularly in language learning. The platform's short and engaging videos allow learners to encounter and learn new vocabulary in real-life and contextual terms. Yang et al. (2025) proved the effectiveness of learning tools based on TikTok, which engage visual and auditory learners in equal measure using multimedia and self-directed learning. TikTok's worldwide popularity and widespread use among college-level learners make it an ideal medium for the transmission of teaching content. The app's ease of use and customization of content, as identified by Khlaif and Salha (2021), make it particularly appropriate for learners who prefer interactive and visually engaging media.

Rahman (2021) and Sari, Hayati, and Suganda (2019) explained that the short-form TikTok videos are capable of promoting literacy and vocabulary learning through contextual exposure to words. TikTok's interactive and multimodal platform makes it possible for learners to have repeated exposure to words, which is particularly beneficial for those with short attention spans or learners who respond to visual and auditory stimuli. Anumanthan and Hashim (2022) found that TikTok videos of English promote vocabulary learning through repeated exposure to common words and phrases in clear and contextualized forms, often with visuals, captions, and simplification, thus making the vocabulary more accessible and memorable.

Despite these promising results, most of the existing studies highlight the informal use of TikTok and its overall contribution to learner motivation or skill acquisition. There is a substantial research gap that still remains for empirical studies that investigate the use of TikTok as a systematic pedagogical intervention to learn vocabulary in formal education, especially at the tertiary level in the Philippines. There is scarce research thus far, as noted by Solomon (2021), that determines whether TikTok can be incorporated into pedagogical interventions in a systematic way to enable measurable educational outcomes. The present study, therefore, aims to address an essential gap by investigating the use of TikTok as a systematic digital teaching material to enhance first-year college students' English vocabulary skills.

This research will add to the existing literature by developing and implementing localized learning videos on TikTok to be used specifically for learning college-level vocabulary. These will be structured supplementary learning materials that are integrated into formal courses during the first academic term. By means of alignment of the content to the media culture and student tendencies, this research seeks to offer higher levels of engagement and enhance the learning of vocabulary beyond traditional methods. In the process, it seeks to demonstrate that TikTok can transition from being a mere casual learning device to a strong, pedagogically sound device for learning vocabulary in the context of higher education in the Philippines.

METHODS

Research Design

This study adopted a Quasi-Experimental research design, which possesses characteristics of both experimental and non-experimental studies and involves the manipulation of an independent variable. The study utilized a pre-test–post-test approach to examine the effectiveness of semantic-focused TikTok videos in improving vocabulary proficiency among first-year students enrolled in Purposive Communication in the College of Education at Isabela State University.

The study began with a pretest to assess the students' prior vocabulary knowledge related to their Purposive Communication subject. Afterwards, the participants were exposed to researcher-produced semantic-focused TikTok videos aligned with the course content. Finally, a post-test was administered to determine any improvement in vocabulary proficiency following exposure to the intervention.

Respondents and Locale of the Study

The respondents of this research study were first-year students enrolled in the subject Purposive Communication during the First Semester of the School Year 2025–2026. This study was conducted at Isabela State University–Echague, Main Campus, College of Education.

Sampling Method

This study employed non-probability sampling, specifically purposive sampling, in selecting the respondents. The participants were chosen from first-year students enrolled in the course Purposive Communication, as this group was considered appropriate for the research focus on vocabulary proficiency. The final number of respondents was determined based on the total number of students enrolled in the subject, as well as the subject professor's approval to conduct the research during the specified time and within the course schedule. For the qualitative phase, 10 respondents were purposively selected based on their experience using TikTok as a learning platform.

Research Instrument

Two sets of vocabulary proficiency tests were utilized in this study: a pre-test and a post-test. The pretest, which was developed by the researchers, consisted of 80 items, divided into four test types designed to measure different aspects of vocabulary proficiency. These included a matching-type test for word recognition (14 items), a fill-in-the-blanks test for word recognition (25 items), a multiple-choice test for meaning inference (25 items), and an analogy test for assessing contextual understanding (16 items).

The post-test contained the same content coverage and number of items as the pre-test to ensure the comparability of results. However, minor modifications were made, such as rearranging and jumbling the order of test items and answer choices, to minimize test familiarity and recall effects.

Both the pre-test and post-test were constructed based on the Table of Specifications (TOS) for the Purposive Communication subject to ensure appropriate content coverage and alignment with the course learning outcomes. Prior to administration, the vocabulary

proficiency test underwent validation by subject-matter experts to establish content validity. Reliability testing was also conducted to determine the internal consistency of the instrument, ensuring that it yielded dependable and consistent results for this study.

Data Gathering Procedure and Analysis

The data collection process began with the researchers securing formal permission from the Dean of the College of Education and the instructors handling the Purposive Communication course through official letters. These letters were intended to obtain authorization to conduct the administration of the vocabulary proficiency pre-test and post-test involving first-year students enrolled in the Purposive Communication subject.

After receiving approval, the researchers conducted pilot testing of the researcher-created vocabulary proficiency test. To establish its validity, it underwent evaluation by subject-matter experts in English language teaching and assessment. The validator examined the test types for their appropriateness in measuring vocabulary proficiency, clarity of instructions, appropriateness of difficulty level, and alignment with the learning competencies of the Purposive Communication course. The validator also recommended modifications to test choices to avoid obviously correct answers and ensure that distractors were plausible. These suggestions were incorporated to refine the test items prior to pilot testing. Internal consistency reliability was determined using the Kuder–Richardson Formula (KR-20), which yielded an overall reliability coefficient of 0.85, indicating high reliability of the test. Item analysis was also performed to determine the level of difficulty of each item. Based on the results of the pilot testing, the instrument was found to be valid and reliable; thus, the test was subsequently administered to the actual respondents.

Following the pilot testing, the participants were oriented regarding the objectives of the study, the procedures to be followed, and the ethical considerations involved. Subsequently, a pre-test was administered to assess the participants' initial level of vocabulary proficiency. The next phase involved the exposure of participants to researcher-developed semantic-based TikTok videos. The participants were instructed to watch the semantic-based TikTok videos during or after each class session, in coordination with their subject professor and in relation to specific course topics.

Finally, a post-test was administered to measure any changes in the participants' vocabulary proficiency following their exposure to the instructional TikTok videos. The data collected from both the pre-test and post-test were subjected to systematic statistical analysis with the assistance of a qualified statistician to ensure the accuracy, reliability, and validity of the research findings.

Ethical Considerations

Ethical considerations were strictly observed throughout the study. Approval was obtained from the Dean of the College of Education and the Purposive Communication instructors prior to the pre-test administration. Informed consent was secured from all participants, ensuring they understood the study's purpose, their voluntary participation, and their right to withdraw without academic consequences. Participants' confidentiality and anonymity were maintained through data coding, and all information was used solely for research purposes. The study posed no physical, psychological, or emotional harm, and all

assessments were conducted fairly and transparently. The instructional TikTok videos were purely educational and appropriate, and the entire research process complied with institutional and ethical research guidelines.

RESULTS AND DISCUSSION

Demographic Profile of the Respondents

Table 1. Demographic Profile of the Respondents

Profile	Frequency (n=68)	Percent
Sex		
Male	22	32.00
Female	46	68.00
Program		
Bachelor of Technology and Livelihood Education (BTLEd)	31	46.00
Bachelor of Physical Education (BPEd)	37	54.00

Table 1 presents the demographic profile of the respondents based on their sex and academic program. The data reveal that a greater proportion of the participants are female, comprising 68% of the total respondents, while males account for 32%. Furthermore, the distribution according to academic programs shows that 46% of the respondents are enrolled in the Bachelor of Technology and Livelihood Education (BTLEd) program, whereas 54% are from the Bachelor of Physical Education (BPEd) program. This indicates that female students and respondents from the BPEd program make up the majority of the study's participants.

Level of Vocabulary Proficiency of the Students Before and After Exposure to Semantic-Focused TikTok Videos

Table 2. Level of vocabulary proficiency of the students before and after exposure to semantic-focused TikTok videos

Domain	Pre-Test		Post-Test	
	Mean Percentage Score	Level	Mean Percentage Score	Level
Word Recognition	76.89	Below Fair	91.86	Satisfactory
Word Usage	76.47	Passed	93.35	Satisfactory
Meaning Inference	75.35	Passed	82.12	Fair
Contextual Understanding	76.19	Passed	82.81	Fair
Overall Result	76.14	Passed	87.47	Good

As shown in Table 2, before the exposure to TikTok-based materials, several vocabulary terms in the Purposive Communication lessons remained unfamiliar to the students. It suggests that they experienced difficulty in comprehending key course-related vocabulary. This challenge is reflected in their overall vocabulary proficiency, as indicated by the mean

percentage score, which shows that the students attained only 76.14, or the "Passed" level, demonstrating minimal proficiency in all domains before the intervention. This indicates limited abilities in recalling vocabulary with visuals, recognizing patterns, applying context clues, and analyzing word relationships, challenges that hinder the discourse synthesis tasks prevalent in university writing, such as reports, research papers, and essays (Raymundo, 2023). This is evident based on Participant 1's statement saying, "In learning vocabulary words, it is difficult for us to just read them in plain text or sometimes when they are only said without further explanation. For me, we need something creative and engaging so we can really remember and understand the words." This is consistent with the findings of Birules-Muntane and Soto-Faraco (2016), who reported that a lack of vocabulary proficiency and unfamiliarity with key terms prior to video exposure hinders comprehension and learning outcomes.

On the other hand, after the intervention, students' mean score increased to 87.47, or "Good," reflecting improved retention, recognition, and understanding of the target vocabulary. Both student feedback and instructor observations emphasized the effectiveness of the semantic-based TikTok videos, noting that concise, visually enriched content facilitated creative and accurate vocabulary use. These results indicate that combining visual and verbal cues in short-form videos strengthens vocabulary acquisition and performance across multiple domains, consistent with research on captions, subtitles, and mental imagery in learning (Altamimi, 2020; Birules-Muntane & Soto-Faraco, 2016; Jane Xavierine et al., 2025).

Word Recognition

Table 2 shows that the respondents' vocabulary proficiency prior to exposure to semantic-focused TikTok videos obtained a mean percentage score of 76.89 in the word recognition domain, which corresponds to a rating of 2.75 on the ISU grading scale and is classified as "Below Fair." This result indicates limited progress in vocabulary recognition, as learners were able to identify some words correctly but demonstrated inconsistency when linking visual cues to their corresponding vocabulary terms. This finding aligns with Cohen (2012), who reported that students in the pre-learning phase showed weak vocabulary recall when required to match words with descriptive images. Performance improved only after guided image generation was provided.

After the instructional intervention involving semantic-focused TikTok videos, the respondents' vocabulary proficiency improved significantly, as reflected in the post-test mean percentage score of 91.86, which corresponds to a "Satisfactory" rating under the same scale. This level indicates very good progress, as students were able to reliably recall and accurately match vocabulary words with corresponding images. Participant 1, a visual learner, reported that the inclusion of images alongside clear explanations in the TikTok videos facilitated understanding of the target vocabulary, stating, "The highlighted words were helpful; I can easily recall them when seeing their pictures." When asked about features that supported learning, the participant specifically mentioned the "multimodal" nature of the videos and added, "the way you express your message," indicating that the combination of visual, verbal, and expressive elements enhanced comprehension and memory retention. The learner's response supports Mayer's (2009) Cognitive Theory of Multimedia Learning and Paivio's (1986) Dual Coding Theory, illustrating how multimodal TikTok content enhances vocabulary processing, comprehension, recall, and learner engagement, consistent with recent findings on short-form educational videos.

Word Usage

In the same table, the results for word usage, wherein students were required to identify and apply the correct vocabulary within sentence contexts, displayed a similar developmental trend. The pretest mean percentage score of 76.47 indicates that before exposure to semantic-focused TikTok videos, students attained a proficiency level classified as "Passed." This level describes learners who demonstrate only basic recognition of visually similar words and occasionally choose appropriate meanings, yet struggle with consistent understanding and accurate application of vocabulary in sentences. This outcome reflects the initial challenges faced by students, such as misusing unfamiliar words and difficulty integrating vocabulary appropriately in sentence construction, consistent with the observations of Altamimi and Rashid (2019), who noted learners' struggles in contextual vocabulary use.

Following the intervention, the respondents' proficiency in word usage improved considerably, as shown by the post-test mean percentage score of 93.35, which corresponds to a "Satisfactory" level of achievement. Learners within this classification were able to reliably distinguish visually similar words and select vocabulary that conveyed precise meaning within sentence contexts, demonstrating improved mastery of word usage. The improvement is supported by students' feedback, with Participant 3 noting that TikTok videos helped analyze word meanings in context and real-life examples. This indicates that the audiovisual and contextual approach promoted deeper semantic processing, enabling accurate vocabulary use, consistent with research showing that multimedia-supported instruction enhances lexical acquisition through contextualized examples, repeated exposure, and multimodal reinforcement (Peters et al., 2016; Peters & Webb, 2018).

Meaning Inference

For the domain of meaning inference, students recorded a pre-test mean percentage score of 75.35, which falls within the 3.00 grade bracket and is classified as "Passed." Based on the rubric, this level indicates that learners demonstrate minimal ability to infer word meanings from context clues and rarely identify implied meanings, reflecting limited use of inference strategies and weak contextual understanding. These results are further substantiated by the participants' interview responses, which consistently revealed difficulties in utilizing contextual clues during the pretest. Participant 3 shared, "When I first encountered the word in the pre-test, I had difficulty determining which word was correct based on the sentence's context clues." The response indicates that learners struggled to accurately determine word meanings prior to the intervention. Without explicit instruction and guided practice, they relied on surface-level recognition rather than contextual understanding, which limited the development of inference skills, consistent with Nagy et al. (2016) and Cain et al. (2018).

However, after exposure to the semantic-focused TikTok videos, students' performance improved, as reflected in their posttest mean percentage score of 82.12, corresponding to a 2.50 grade equivalent, which falls under the "Fair" proficiency level. Based on the rubric, students at this level rarely determine word meanings correctly and infrequently identify implied meanings, applying inference strategies ineffectively or inconsistently. Although inference skills remained developing, the improvement demonstrates a positive shift in students' ability to derive meaning from context. This improvement is further supported by Participant 3 stating, "After watching the videos and the discussion of the words, my knowledge of the target vocabulary improved. It facilitated my understanding of the meanings of unfamiliar words and how they are used in sentences." The findings suggest that semantic-

focused multimedia instruction can facilitate initial gains in meaning inference, but sustained practice and explicit strategy instruction are needed for learners to consistently apply inference skills. Contextually rich multimedia, such as semantic-focused videos, scaffolds meaning-making by providing iconic semantic cues that enhance memory and comprehension (Pereira & Smith, 2014). Research also indicates that lexical inferencing strategies improve vocabulary acquisition, as reflected in higher post-test performance. Consistent with these studies, exposure to semantic cues in TikTok videos enhanced students' inference skills, though proficiency remained under development.

Contextual Understanding

In terms of contextual understanding, students achieved a pre-test mean percentage score of 76.19, which corresponds to a 3.00 grade equivalent and is classified as "Passed." This level describes students who show minimal ability to analyze word relationships and analogies, struggle to infer missing words, and often fail to correctly identify patterns between word pairs. This challenge is further reflected in Participant 4's statement, "Honestly, I am still struggling with pairing words, especially highfalutin words. It is hard for me to understand them based on their context." These findings indicate that before the intervention, learners experienced difficulty comprehending vocabulary through contextual cues and demonstrated limited analytical skills in interpreting meaning relationships. Overall, this result suggests that while the students possess basic contextual knowledge, they require more guided practice and targeted instructional support to strengthen higher-order thinking skills related to word relationships and contextual analysis, as supported by research emphasizing the importance of explicit and scaffolded vocabulary instruction in developing deeper lexical and contextual understanding (Beck, McKeown, & Kucan, 2013; Stahl & Nagy, 2006).

Following the exposure to semantic-based TikTok videos, students' post-test mean percentage score improved to 82.81, which transmuted to a 2.50 grade equivalent, classified as "Fair." Based on the rubric description, students at this level show moderate improvement, being able to analyze simple word relationships and analogies with some success, infer missing words, and identify relationship patterns, though they still require guidance. This shift suggests that the integration of contextualized multimedia content helped students better interpret vocabulary within context, as Participant 2 reported, "Watching TikTok videos allowed me to understand how words can be interpreted differently depending on context," thereby improving their vocabulary proficiency and contextual understanding. This finding supports existing research that authentic digital content enhances vocabulary development and contextual comprehension (Juwita, 2024). One study further highlights how curated TikTok content aligned with learning objectives helps students grasp contextual usage more effectively, leading to improved vocabulary retention through active engagement, reflection, and the meaningful use of new words (Greenhow & Lewin, 2016).

Level of Improvement in Vocabulary Proficiency when Students are Grouped According to Sex

Table 3 shows the overall result of the post-test scores of both groups increased across all domains, with a p-value of 0.01. This indicates that the level of significance of the p-value is highly statistically significant compared to a standard significance level of ≤ 0.05, which is considered statistically significant. This implies that both male and female respondents improve after the intervention. Therefore, the findings indicate that the null hypothesis stating that there is no significant difference in the level of improvement in the respondents' vocabulary proficiency when grouped according to their sex is accepted.

Table 3. Difference in the level of improvement in vocabulary proficiency when students are grouped according to sex

Domain	Male				Female			
	Pre	Post	t-value	p-value	Pre	Post	t-value	p-value
Word Recognition	76.79	91.23	-7.08	0.01	76.94	92.16	-8.73	0.01
Word Usage	76.45	90.64	-7.05	0.01	76.48	94.65	-13.13	0.01
Meaning Inference	77.18	82.00	-2.98	0.01	74.48	82.17	-7.55	0.01
Contextual Understanding	75.99	83.10	-4.83	0.01	76.29	82.68	-4.12	0.01
Overall Result	76.65	86.53	-8.33	0.01	75.90	87.92	-13.44	0.01

Word Recognition

Male students increased from 76.79 to 91.23, while female students improved from 76.94 to 92.16. The t-value for male (-7.08) is slightly lower in magnitude compared to females (-8.73). However, both groups obtained a p-value of 0.01, which is below the standard significance level of 0.05, showing that the improvements after the intervention for both sexes are highly statistically significant. This means that both sexes can link and recognize vocabulary words through analyzing pictures. The results of both male and female indicate only a minor numerical difference and do not indicate that one group improves better than the other. Physiological evidence may help explain why small numerical differences in scores can appear even when male and female students show an equivalent level of improvement. A magnetoencephalographic (MEG) study revealed clear gender-related differences in brain activity, with females achieving a recognition accuracy of 62.2% and males 60%, a minor difference that was not statistically significant, as a study by Walla et al. (2001) reported that males and females demonstrated similar word recognition performance. Furthermore, Kljajevic et al. (2023) found a robust female advantage in verbal learning, including recall and recognition. This supports the slightly higher numerical post-test scores observed among female respondents in the present study, which may reflect variations in cognitive processing strategies rather than a statistically meaningful advantage in word recognition.

Word Usage

Both groups reached a p-value of 0.01, which is far below 0.05. This confirms that both male and female improvements are highly statistically significant, and the level of significance remains the same for both. Male students improved from 76.45 to 90.64, while female students increased from 76.48 to 94.65. The t-value for males (-7.05) is smaller in magnitude than that of females (-13.13). Although they have the same level of improvement, clearly, the small differences in magnitude occur due to the distinct vocabulary learning strengths of males and females. Kobayashi and Little (2020) reported that female learners use explicit vocabulary learning strategies more frequently, including monitoring word use, evaluating appropriateness, and adjusting usage based on context. Furthermore, Kaushanskaya, Marian, and Yoo (2011) found that female learners tend to demonstrate advantages in lexical access, word learning, and strategic vocabulary use, which are central to word usage proficiency. Such strategies are directly linked to stronger performance in word usage tasks, which require

learners to go beyond knowing word meanings and demonstrate correct and context-sensitive application.

Meaning Inference

Both male and female students obtained the same p-value of 0.01, which is lower than the 0.05 level of significance. This indicates that both male and female students have the same level of inferential skills when exposed to semantic-focused TikTok videos. Consequently, a statistically significant improvement was observed among both male and female respondents after the intervention. In terms of mean test scores, males improved from 77.18 to 82.00, while females increased from 74.48 to 82.17, with females obtaining a slightly higher post-test mean. The t-value for males (-2.98) is notably smaller in magnitude compared to that of females (-7.55). Although this numerical difference does not indicate a statistically significant difference in overall improvement.

The observed minor difference in t-values is explained by variations in cognitive and strategic processing. Research suggests that male learners may rely more on analytic and lower-level processing strategies, such as direct word recognition and decoding, which are effective for recognition-based tasks but may provide less support for deeper meaning inference that requires semantic integration (Hannon, 2014). In contrast, female learners tend to employ meaning-focused and strategic approaches, including greater use of contextual cues and semantic integration when inferring word meanings (Montero-SaizAja, 2021; Kobayashi, 2021). However, regardless of the minor differences, the study suggests that both sexes improved from having difficulty in understanding word meanings in context to being able to determine word meaning more correctly after the intervention. Lacar's (2022) argument supports this by showing that meaning arises through language practices within communicative situations, not just from isolated word forms. In a similar way, students improved their inferential skills by seeing words used in meaningful, context-rich TikTok videos, enabling them to make semantic connections and better infer meaning rather than just recognizing the word form. Moreover, the intervention consisted of semantic-focused TikTok videos primarily in English, with occasional use of Filipino to support comprehension. As code-switching is seen as helpful for comprehension, it bridges gaps in understanding of content and vocabulary (Gamelo and Raymundo, 2024). Furthermore, a study on the relationship between vocabulary knowledge and inferential reading comprehension, Royeras and Sumayo (2024), found that vocabulary knowledge has a moderate and highly significant relationship with inferential reading comprehension, indicating that learners with stronger vocabulary knowledge tend to demonstrate better ability to infer meaning from texts.

Contextual Understanding

Both male and female students obtained a p-value of 0.01, which is lower than the 0.05 level of significance, indicating that the improvements for both groups are highly statistically significant. In terms of post-test mean scores, males increased from 75.99 to 83.10, while females improved from 76.29 to 82.68. The t-value for males (-4.83) is slightly larger in magnitude than that for females (-4.12), suggesting that the improvement among male students is somewhat greater in this domain compared to other domains. Moreover, the slightly stronger improvement observed among males is likely due to the nature of the contextual understanding domain's test type, which involves verbal analogy tests requiring analytic and reasoning-based processing. Research suggests that males may demonstrate small advantages in tasks requiring such reasoning. For instance, Lim (1994) reported that males tend to perform better than females on certain measures of verbal analogies, particularly

when these tasks involve abstract or rule-based reasoning. Similarly, Colom et al. (2004) found that males often show stronger performance in deductive and analytical reasoning tasks, which may contribute to more efficient processing of context-based verbal relationships.

Furthermore, a magnetoencephalographic (MEG) study by Walla et al. (2001) reported gender-related differences in brain activity approximately 200–350 ms after word onset. Specifically, males showed stronger left-hemisphere lateralization, and this left-hemisphere dominance may contribute to their slightly stronger performance in analytic and reasoning-based tasks, such as contextual understanding.

Pre-test and Post-test Scores of the Students' Vocabulary Proficiency after using Semantic-Focused TikTok Videos

Table 5. Difference between the pretest and posttest scores of the students' vocabulary proficiency after using semantic-focused TikTok videos

Domain	Pre	Post	t-value	p-value
Word Recognition	76.89	91.86	-11.14	0.01
Word Usage	76.47	93.35	-14.62	0.01
Meaning Inference	75.35	82.12	-7.74	0.01
Contextual Understanding	76.19	82.81	-5.77	0.01
Overall Result	76.14	87.47	-15.7	0.01

It can be gleaned from Table 5 that the overall results of the pretest and posttest showed a marked improvement in the respondents' vocabulary proficiency after using semantic-focused TikTok videos. The mean pretest score of 76.14, which falls within the "Passed" level based on the ISU transmutation system, increased to a mean posttest score of 87.47, classified as "Good." This increase of 11.33 points indicates a substantial enhancement in vocabulary proficiency following the intervention. This improvement was further substantiated by Participant 3 stating, "The overall use of TikTok videos as a tool to improve our vocabulary after the pretest was a good idea. Not only was it educational, but it was also highly engaging because of the different effects and features shown." This statement can be generalized to reflect the overall perception of the respondents, indicating that the integration of TikTok videos created a more motivating and interactive learning environment. The engaging audiovisual elements like animation, overlay pictures and videos, stickers, filters, and concise presentation of content likely enhanced learners' attention and facilitated better retention of vocabulary concepts. This finding is consistent with previous studies, which suggest that the use of multimedia and social media platforms in language learning can significantly improve vocabulary acquisition by increasing learner motivation and exposure to contextualized language use (Mayer, 2019; Alenezi, 2021; Kabooha & Ely). Moreover, the computed t-value of −15.70 signifies a large difference between the pretest and posttest scores, with the negative value indicating higher posttest performance. The p-value of 0.01 is lower than the 0.05 level of significance, confirming that the difference between the two mean scores is statistically significant. This result implies that the observed improvement did not occur by chance, and thus, the use of semantic-focused TikTok videos had a significant positive effect on the respondents' overall vocabulary proficiency. Additionally, the overall findings across all four domains indicate that the respondents showed improvement in word recognition after exposure to the TikTok videos. The videos featured overlay images and visual elements that helped learners identify and determine the target words. This improvement is

reflected in their test results, where the number of correctly recognized pictures increased from 6 to 11 out of 14.

Word Recognition

Table 5 presents the difference between the pre-test and post-test scores of the students' vocabulary proficiency in the domain of word recognition following the implementation of semantic-focused TikTok videos. The students' pre-test mean percentage score of 76.89 indicates that they initially experienced difficulty in recognizing and correctly identifying familiar words based on the information presented in the test. However, the post-test mean percentage score increased to 87.47, reflecting a notable improvement after the intervention. This improvement is further supported by Participant 2 saying, "It was that the videos were short and included overlay pictures along with text effects such as bold formatting, as these features helped me recognize what the pictures really meant. This is why I improved my post-test score." This response suggests that students benefit from short-form educational videos and visual elements such as overlay images and emphasized text, which are key features of TikTok and play an important role in enhancing retention and supporting word recognition through visual cues. This suggests that exposure to semantic-based videos enhanced students' vocabulary proficiency, particularly in identifying word meanings, applying appropriate vocabulary in sentences, inferring meaning, and understanding words through contextual clues. The computed t-value of −15.70 with a corresponding p-value of 0.01, which is less than the significance value of 0.05, indicates that there is a significant difference between the pretest and posttest overall scores.

According to Mayer's Cognitive Theory of Multimedia Learning (2009), learners understand and retain information more effectively when verbal information is paired with relevant visuals, as this reduces cognitive load and supports meaningful learning. Similarly, Paivio's Dual Coding Theory (1986) explains that combining visual and verbal representations strengthens memory by engaging two cognitive pathways, which is particularly beneficial for vocabulary acquisition. Moreover, research on video-based learning indicates that shorter videos are more effective in maintaining learner attention and engagement, leading to improved learning outcomes (Guo, Kim, & Rubin, 2014). In the context of language learning, visually enriched and context-driven digital content has been shown to support learners' ability to identify word meanings, infer meaning from context, and apply vocabulary appropriately in sentences (Nation, 2013; Juwita, 2024). Thus, exposure to semantic-based videos appears to enhance students' vocabulary proficiency by facilitating contextual understanding and reinforcing word meanings through multimodal cues.

Word Usage

Based on the overall results obtained from the BPEd and BTLEd respondents, it is evident from the table that students' mean scores in word recognition improved from 76.89 (pretest) to 91.86 (post-test) after the use of semantic-focused TikTok videos as an intervention. The negative t-value of -11.14 indicates that the posttest mean is significantly higher, and the p-value of 0.01, which is less than the significance value of 0.05, confirms a statistically significant improvement in their word recognition ability, such as analyzing pictures and connecting them to appropriate words. This result is supported by the respondents' responses when they were asked about the effects that helped them improve in this domain. Participant 4, "These TikTok videos were effective because the voice-overs, text, captions, overlay pictures and videos, music, effects, and animations helped me understand the meaning and usage of words, use them correctly in sentences, and tell the difference

between similar words. They also made the words easier to recognize and remember." Specific TikTok features were found to support word usage in distinct ways. Voice-over or voice recordings model correct pronunciation and usage of words in spoken sentences, while on-screen text and sentence examples demonstrate how words function grammatically. Captions reinforce understanding by presenting definitions or example sentences, supporting both visual and auditory learning. Additionally, picture and video overlays provide real-life scenarios that illustrate appropriate word usage, enabling learners to infer meaning from context. Visual effects help highlight contrasts between similar or commonly confused words, while music sets the tone or mood, such as excitement, calmness, or drama, helping learners associate emotional context with word usage. Finally, animations depict actions or scenarios that further clarify how vocabulary is used in authentic situations.

The findings further suggest that exposure to semantic-based TikTok videos enhanced students' vocabulary proficiency by improving their ability to identify word meanings, understand grammatical usage, infer meanings from context, and recognize appropriate word usage in real-life scenarios. These effects support previous studies on vocabulary learning through video viewing, which show that visually and contextually rich videos enhance learners' word recognition, recall, and application (Montero Perez, 2019). Consistent with Mayer's Cognitive Theory of Multimedia Learning, the simultaneous presentation of visual and verbal information facilitates deeper processing and more effective vocabulary acquisition. Moreover, these results align with (Juwita, 2024), who reported significant gains in students' vocabulary development and contextual comprehension through the use of TikTok-based educational content. (Harmon and Wood, 2018) argue that audiovisual materials contextualize vocabulary, helping learners understand how a word is used, when it is appropriate, and its meaning based on context, which aligns well with the finding that TikTok's multimedia videos promote proficiency in learning appropriate word usage. Semantic-based videos provide contextualized examples of word usage in natural discourse. This authentic input helps learners internalize appropriate syntactic and pragmatic patterns. Students improve their ability to use new words correctly in sentences after engaging with semantically rich video content (Peters & Webb, 2018).

Meaning Inference

The meaning inference domain improved from 75.35 (pretest) to 82.12 (posttest). The computed t-value of -7.74 signals a significant increase in learners' inferential skills, and the p-value of 0.01, which is less than the significance level of 0.05, states that there is a significant improvement in their skill to determine words' meaning and understand how words function within sentences after their exposure to the intervention of TikTok semantic-based videos. This result was supported by TikTok features, which help learners guess or derive word meanings using contextual clues rather than direct definitions. In short, in semantic-based videos, voice-over clues provide hints or examples that guide understanding without explicitly explaining the word, while video overlays show actions or scenes that visually suggest meaning. The green screen feature allows creators to place themselves in meaningful contexts that further reveal what a word represents. Stickers add symbolic clues, such as a heart to represent love, and effects can emphasize cause-and-effect relationships or contrasts that aid interpretation. This is evident through the confirmation of one of the interviewees stating, "With the help of these TikTok videos explaining the words we encountered during our pre-test, we understood them better. After watching the videos, the use of effects and different scenarios with backgrounds and filters made them fun to watch. It felt like we were learning creatively and enjoyably." Overall, this suggests that learners generally found it easier to infer meanings when learning

through engaging and contextualized video content. (Schmitt, 2016) highlights the importance of inference in vocabulary learning, noting that context-rich exposure helps learners derive word meanings, highlighting the ability to figure out the meanings of unfamiliar words using context clues from the context.

Contextual Understanding

Under the domain of contextual understanding, the pre-test result of 76.19 indicates that students experienced difficulties in analyzing which appropriate words should be used within a given context. Following the intervention, the results of their post-test increased to 82.8, with a t-value of -5.77 showing a significant change relative to score variability and a p-value of 0.01, which is less than the significance level of 0.05, indicating statistical significance. Thus, this indicates that students' proficiency in understanding words based on context can be enhanced or broadened through exposure to short, semantic-based videos that explain words in various situations. With TikTok semantic-based videos facilitating the respondents' comprehension of the words presented in their course subject, several features were found to help support contextual understanding. Based on the respondents' responses, word relationships became clearer and more engaging when meanings were presented alongside captions that show analogy patterns or relationships between words, while on-screen text displays sentences that demonstrate relational meaning. Also, some of the respondents noted that video overlays provide scenes that show context, such as cause-and-effect or comparison, and the green screen feature presents contrasting or connected environments, such as a desert versus a snowy setting. Voice-overs help explain relationships between words, including synonyms and antonyms, while effects highlight contrasts, similarities, or relational patterns. Music further supports context by matching the mood of the word, such as suspenseful music for "mysterious" or happy music for "joyful," and animations visually represent relationships like big versus small or fast versus slow. Overall, this implies that students tend to learn and remember word meanings more effectively when contextual clues are presented in an engaging, visual, and relatable manner. (Godwin-Jones, 2018) and (Lee & Lee 2022) emphasize that authentic, contextually rich digital content strengthens pragmatic comprehension, which matches the demonstrated gains in this domain. Furthermore, semantic-based videos immerse learners in comprehensible narratives or informational content that integrates vocabulary with situational context. This strengthens learners' ability to grasp discourse-level meaning and enhances overall language comprehension (Frumuselu et al. 2015).

CONCLUSION AND FUTURE WORKS

The study revealed that using semantic-focused TikTok videos in the Purposive Communication subject significantly enhances students' vocabulary enhancement by leveraging the platform's multimodal features. Visual and auditory elements, such as on-screen text, captions, and voice-over recordings, improve students' word recognition by clearly presenting correct spelling, structure, and pronunciation, while the short duration of videos helps maintain attention and reduce cognitive overload. Word usage is strengthened as students observe vocabulary presented in meaningful and authentic contexts through example sentences, spoken demonstrations, and visual backgrounds that model appropriate language use. Meaning inference develops through visually rich features such as images, animations, stickers, and sound effects that provide contextual clues, enabling students to infer meanings without relying on direct definitions. Contextual understanding is further reinforced by backgrounds, animations, and music that illustrate relationships between words across different situations and emotional tones. As a result, students show marked improvement in recalling and recognizing vocabulary, understanding word meanings, and applying target

words accurately in sentences, with particularly strong gains in word recognition and usage and continued progress in higher-level skills such as inference and contextual analysis. The findings suggest that teachers are encouraged to integrate TikTok-based and similar digital resources into instruction to reinforce vocabulary learning and address common classroom challenges, while students are expected to actively engage with vocabulary beyond the videos. When used as a complementary tool within a structured instructional framework, semantic-focused TikTok videos provide an engaging and effective approach to promoting sustained vocabulary development in both academic and real-world contexts.

ACKNOWLEDGMENT

The researchers would like to express their heartfelt gratitude to Dr. Jennelyn L. Raymundo, the subject professor and research adviser, for her invaluable guidance, patience, and support throughout the conduct of this study. Sincere appreciation is also extended to the Panel of Examiners, Ms. Joy Mary Paddayuman, Mr. Randy Acoba, and Dr. Daisy Casipit, for their insightful comments, constructive feedback, and valuable suggestions that greatly contributed to the improvement of this research. The researchers are likewise grateful to Dr. Dayson Lata, BSE Program Chair, and Dr. Marinel Dayawon, Dean of the College of Education, for granting permission and approval to conduct this study. Special thanks are also given to Ms. Nerissa Ferrer, the subject instructor, for allowing the researchers to conduct the study in her Purposive Communication class, and to the BPEd and BTLEd respondents for their cooperation and active participation. Deep appreciation is extended to the researchers' parents, siblings, friends, and relatives for their moral and financial support throughout this academic journey. Above all, the researchers offer their utmost gratitude to God Almighty for granting wisdom, strength, and guidance from the beginning until the completion of this research. This study would not have been possible without the support and contributions of all these individuals.

CONFLICT OF INTEREST

The authors declare that there are no conflicts of interest regarding the publication of this paper.

DISCLOSURE OF AI ASSISTANCE

ChatGPT and Grammarly were utilized for grammar checking and language improvement. The tools did not influence the study design, analysis, or interpretation of results. Final responsibility rests with the authors.

REFERENCES

Al Arif, T. Z. Z., & Handayani, R. (2021). Factors influencing the use of ICT for English language learning of Indonesian EFL university students. *ELSYA: Journal of English Language Studies, 4*(1), 24–33. https://doi.org/10.31849/elsya.v4i1.6882

Alahmadi, A., & Foltz, A. (2020). Effects of language skills and strategy use on vocabulary learning through lexical translation and inferencing. *Journal of Psycholinguistic Research, 49*, 489–505. https://doi.org/10.1007/s10936-020-09720-9

Alenezi, H. F. (2021). Social media as a language learning tool: A case study on vocabulary acquisition. *Journal of Language Teaching and Research, 12*(3), 456–467. https://doi.org/10.17507/jltr.1203.12

Altamimi, A. (2020). Contextualized vocabulary instruction. *International Journal of Applied Linguistics, 30*(2), 245–260. https://doi.org/10.1111/ijal.12289

Altamimi, D., & Rashid, R. A. (2019). Spelling problems and causes among Saudi English language undergraduates. *Arab World English Journal, 10*(3), 178–191. https://doi.org/10.24093/awej/vol10no3.12

Anumanthan, S., & Hashim, H. (2022). Improving the learning of regular verbs through TikTok among primary school ESL pupils. *Creative Education, 13*(3), 896–912. https://doi.org/10.4236/ce.2022.133059

Beck, I. L., McKeown, M. G., & Kucan, L. (2013). *Bringing words to life: Robust vocabulary instruction* (2nd ed.). Guilford Press.

Birulés-Muntané, J., & Soto-Faraco, S. (2016). Video enhances comprehension. *Quarterly Journal of Experimental Psychology, 69*(7), 1399–1416. https://doi.org/10.1080/17470218.2015.1083593

Birulés-Muntané, J., & Soto-Faraco, S. (2016). Watching subtitled films can help learning foreign languages. *PLOS ONE, 11*(6), e0158409. https://doi.org/10.1371/journal.pone.0158409

Cohen, M. T. (2012). Strengthening vocabulary through the use of imagery. *Creative Education, 3*(8), 1357–1363.

Colom, R., Contreras, M. J., Arend, I., García-Leal, O., & Santacreu, J. (2004). Sex differences in verbal reasoning are mediated by sex differences in spatial ability. *The Psychological Record, 54*(3), 365–372. https://doi.org/10.1007/BF03395479

Frumuselu, A. D., Peña, M., López-Jiménez, M. D., & Hernández-González, J. (2015). Video-based L2 vocabulary learning. *System, 55*, 1–14. https://doi.org/10.1016/j.system.2015.08.001

Gamelo, L., & Raymundo, J. L. (2024). Code-switching practices of junior high school teachers and learners in English as a second language (ESL) classes: Basis for designing an intervention program. *International Journal of Linguistics, Literature & Translation, 7*(7), 75–92. https://doi.org/10.32996/ijllt.2024.7.7.9

Godwin-Jones, R. (2018). Gamified materials for vocabulary learning. *Language Learning & Technology, 22*(3), 1–17. https://doi.org/10.10125/44679

Greenhow, C., & Lewin, C. (2016). Social media and education: Reconceptualizing the boundaries of formal and informal learning. *Learning, Media and Technology, 41*(1), 6–30. https://doi.org/10.1080/17439884.2015.1064954

Guo, P. J., Kim, J., & Rubin, R. (2014). How video production affects student engagement. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (pp. 1709–1714). Association for Computing Machinery. https://doi.org/10.1145/2556288.2557216

Hannon, B. A. (2014). Are there gender differences in the cognitive components of adult reading comprehension? *Learning and Individual Differences, 32*, 69–79. https://doi.org/10.1016/j.lindif.2014.03.017

Harmon, J. M., & Wood, K. D. (2018). Vocabulary self-collection strategy plus. *The Reading Teacher, 71*(5), 567–577. https://doi.org/10.1002/trtr.1685

Juwita, N. (2024). The use of TikTok education: The impact on students' vocabulary acquisition. *Journal of English Language Education, 9*(4), 134–145. https://doi.org/10.33369/jele.v9i4.526

Kabooha, R., & Ely, M. (2018). Video captions in EFL vocabulary learning. *English Language Teaching, 11*(7), 133–142. https://doi.org/10.5539/elt.v11n7p133

Kaushanskaya, M., Marian, V., & Yoo, J. (2011). Gender differences in adult word learning. *Acta Psychologica, 137*(1), 24–35. https://doi.org/10.1016/j.actpsy.2011.02.002

Khlaif, Z. N., & Salha, S. (2021). Using TikTok in education: A form of micro-learning or nano-learning? *Interdisciplinary Journal of Virtual Learning in Medical Sciences, 12*(3), 213–218. https://doi.org/10.30476/ijvlms.2021.90211.1087

Kljajevic, V., Evensmoen, H. R., Sokołowski, D., Pani, J., Hansen, T. I., & Håberg, A. K. (2023). Female advantage in verbal learning revisited: A HUNT study. *Memory, 31*(6), 831–849. https://doi.org/10.1080/09658211.2023.2203431

Lee, S., & Lee, J. (2022). Digital media and pragmatic competence in EFL contexts. *Computer Assisted Language Learning, 35*(7), 1462–1485. https://doi.org/10.1080/09588221.2020.1809421

Mayer, R. E. (2009). *Multimedia learning* (2nd ed.). Cambridge University Press.

Mayer, R. E. (2019). Thirty years of research on online learning. *Applied Cognitive Psychology, 33*(2), 152–159. https://doi.org/10.1002/acp.3482

McKeown, M. G., Crosson, A. C., Moore, D. W., & Beck, I. L. (2019). Effective vocabulary instruction fosters knowing words, using words, and understanding how words work. *Language, Speech, and Hearing Services in Schools, 50*(4), 466–476. https://doi.org/10.1044/2019_LSHSS-VOIA-18-0126

Montero Perez, M. (2019). The role of video in L2 vocabulary learning. *Studies in Second Language Acquisition, 41*(3), 609–634. https://doi.org/10.1017/S0272263119000060

Nation, I. S. P. (2013). *Learning vocabulary in another language* (2nd ed.). Cambridge University Press.

Paivio, A. (1986). *Mental representations: A dual coding approach*. Oxford University Press.

Peters, E., & Webb, S. (2018). Incidental vocabulary acquisition through viewing L2 television. *Language Learning, 68*(3), 827–862. https://doi.org/10.1111/lang.12294

Schmitt, N. (2016). *Vocabulary in language teaching*. Cambridge University Press.

Solomon, S. (2021). *Incorporating social media into the classroom: A case study on how TikTok can be immersed into classroom pedagogy* (Master's thesis, Dominican University of California).

Yang, Y., Zhang, C., Zhang, S., & Shen, J. (2025). TikTok in higher education: A systematic review of disciplinary applications, learning outcomes, and implementation factors. *Interactive Learning Environments*. https://doi.org/10.1080/10494820.2025.2564736