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Short, Smart, And Effective: Investigating Micro-Videos For English Language Teaching In Technical Education

By

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Abstract

The increasing use of micro-videos, such as reels and shorts, in digital learning environments presents unique opportunities for enhancing pedagogical practices. This study investigates the impact of using short-format educational videos on teaching English language skills to undergraduate engineering students in India. This study adopts a mixed-methods approach, combining pre- and post-test assessments, engagement analytics, and student feedback to evaluate learning outcomes. Preliminary findings indicate a significant improvement in students' writing, speaking, listening, reading, grammar, and vocabulary acquisition when they are exposed to context-specific Employment of micro-videos. This paper discusses the best practices for creating such videos, explores their effectiveness in fostering active learning, and highlights challenges such as content design, learner engagement, and language retention. The implications for curriculum design in technical education are explored, offering a framework for integrating micro-videos into traditional and hybrid learning environments.

Additionally, the study conducted a comparative analysis between traditional teaching methods and micro-video-based instruction to evaluate their relative effectiveness. Personalised learning strategies are considered by tailoring video content to different learning paces and providing adaptive and student-centred education. To enhance engagement, interactive features such as quizzes, pronunciation drills, comprehension exercises, and gamified tasks linked to videos were integrated into the learning experience.

Keywords: Micro-videos, Reels, Shorts, English Language Teaching, Digital Pedagogy, Video-Based Learning, Curriculum Design, Hybrid Learning, Gamification, Language Acquisition.

Introduction

The rapid expansion of short-form video platforms such as Instagram Reels and YouTube Shorts has fundamentally altered the landscape of digital content consumption, especially among Gen Z students (Chadafi and Khasanah 177; Wang and Zhang 12). For undergraduate engineering students, who often prioritize technical proficiency over communicative competence, micro-videos present an innovative and accessible avenue for English language development. Recent research underscores that integrating micro-videos into language curricula not only increases student engagement but also enhances retention and supports incidental learning by aligning instructional strategies with the digital habits of today's learners (Phohnthip Smithsarakarn 527; Alasmari 35).

The digital transformation of higher education, hastened by the COVID-19 pandemic, has accelerated the adoption of technology-driven pedagogies. Among these, micro-videos, particularly those found on platforms such as Instagram, YouTube, and TikTok, have emerged as compelling tools for fostering instructional engagement and motivation (Wang and Zhang 13). These brief, often entertaining videos are widely consumed by college students and are increasingly being leveraged in educational contexts to address learners' evolving needs.

For English as a Second Language (ESL) learners in engineering colleges, the integration of micro-videos offers multiple pedagogical benefits. Micro-videos deliver language input in concise, easily digestible segments, facilitate multimodal learning through the combination of visual and auditory cues, and promote asynchronous engagement, features that are particularly valuable for students who experience cognitive overload from traditional lecture-based instruction (Mayer 89).

This study explores the systematic deployment of micro-videos to enhance English language skills, including reading, writing, speaking, listening, grammar, and vocabulary, among undergraduate engineering students in India. It further examines both the cognitive and affective dimensions of learning, the nature of students' interactions with micro-videos, and the influence of these interactions on measurable performance outcomes.

Literature Review

The intersection of multimedia learning and language pedagogy has been extensively explored in recent studies. Richard Mayer's Cognitive Theory of Multimedia Learning posits that individuals learn more effectively from a combination of words and pictures than from words alone, a phenomenon known as the "multimedia principle" (Mayer 47). This theory is grounded in three key assumptions: the existence of separate auditory and visual channels for processing information, the limited capacity of each channel, and the active nature of learning, which involves filtering, selecting, and integrating information based on prior knowledge (Mayer 47; "Richard Mayer's Cognitive Theory of Multimedia Learning"). The practical application of these principles is evident in Mayer's recommended instructional strategies, such as segmenting content and reducing extraneous cognitive load to optimise learning outcomes (Mayer 2009; "Cognitive Theory of Multimedia Learning").

Building on Mayer's foundational work, Clark and Mayer argue that e-learning environments benefit significantly from the use of short, segmented videos, which enhance learner engagement and retention by leveraging both auditory and visual channels ("The Science of Instruction: Making Video Work Well"). Their research underscores the importance of designing instructional videos that align with how the human mind processes multimedia, advocating for dual-channel delivery, limited information per segment, and active engagement with the material (Clark and Mayer, "Mayer's 12 Principles of Multimedia Learning").

Within English as a Second Language (ESL) contexts, the efficacy of short-form videos has been supported by numerous studies. For instance, Krashen's theory of second language acquisition highlights the role of comprehensible input and affective factors in vocabulary development, a finding echoed in more recent research on vocabulary acquisition through multimedia exposure (Krashen, 1982; Rais, 2). Similarly, micro-videos have been shown to facilitate pronunciation and listening comprehension by providing authentic language input and opportunities for imitation (Alasmari, 38). These findings are consistent with the broader mobile learning (m-learning) paradigm, which emphasises the value of ubiquitous, learner-centred access to short, focused instructional content (Kukulska-Hulme and Shield).

The novelty of this study lies in its empirical focus on micro-videos as pedagogical tools for technical students, particularly undergraduate engineering students in India, a demographic that has received limited attention in the existing literature.

Microlearning, defined as the delivery of content in "small, focused segments", aligns closely with cognitive load theory, which asserts that learning is most effective when information is presented in manageable units (Chadafi and Khasanah 178). For engineering students, whose curricula are often densely technical, micro-videos help mitigate cognitive overload by distilling complex language concepts into concise and digestible lessons (Sweller 12).

Recent empirical studies have demonstrated that micro-videos can substantially improve speaking fluency and vocabulary retention. For example, a meta-analysis found that microlearning interventions, including short-form videos, led to a significant increase in speaking proficiency (SMD = 1.43, $p < .05$), with 94% of learners reporting gains in vocabulary retention (Phohnthip Smithsarakarn, 529). Instagram Reels and similar platforms, which often feature idiomatic expressions in conversational settings, allow students to mimic intonation and gestures, thereby bridging the gap between classroom instruction and authentic language use (Alasmari 38).

Despite these advantages, some scholars caution that micro-videos may encourage superficial engagement, with approximately 22% of students reportedly skimming content without engaging in critical analysis (Journal of English Language Teaching, 25). However, integrating structured reflective tasks, such as journals or peer-reviewed video creation, can help deepen learning and counteract this tendency (S2 Pendidikan Bahasa Inggris).

Objectives of the Study

. To evaluate the efficacy of micro-videos in enhancing English language skills among engineering students.
. To compare micro-video-based learning with traditional classroom teaching in terms of student performance and engagement.
. To analyse student perception, motivation, and interaction with micro-video content.
. To develop a framework for incorporating micro-videos into a blended curriculum.

Methodology

This study adopted a quasi-experimental, mixed-methods design, integrating both quantitative and qualitative approaches to provide a comprehensive analysis of the impact of micro-videos on English language acquisition by undergraduate engineering students. The mixed-methods framework is well supported in language education research for its ability to triangulate findings and enrich interpretation (Creswell and Plano Clark 5; Chadafi and Khasanah 179). Quantitative data were collected through pre- and post-intervention proficiency assessments, while qualitative insights were gathered from focus group discussions, video interaction logs, and reflective journals, following best practices in educational research (Phohnthip Smithsarakarn 530).

The study involved 120 undergraduate students from the Government Engineering College, Surat, representing various engineering disciplines. Participants were equally divided into an experimental group ($n = 60$), which received micro-video-based instruction, and a control group ($n = 60$), which received traditional textbook-based instruction. All participants self-reported intermediate proficiency in English, which was verified through a placement test aligned with the Common European Framework of Reference for Languages (CEFR), a standard widely used for language proficiency benchmarking (Council of Europe, 23).

The intervention was conducted over eight weeks. The experimental group engaged with curated micro-videos weekly, whereas the control group continued with conventional textbook-based lessons. This duration is consistent with prior studies on microlearning interventions in language education (Chadafi and Khasanah 178; Phohnthip Smithsarakarn 531).

To ensure robust data collection and analysis, the following instruments were employed.

. Pre- and Post-Tests: Custom-designed, CEFR-aligned English proficiency tests were administered to both groups to measure gains in vocabulary, grammar, listening, and speaking skills (Council of Europe 23).
. Weekly Quizzes: Short quizzes assessed vocabulary and grammar retention, echoing methods used in previous
. microlearning studies (Alasmari 39).Listening and Speaking Tasks: Performance-based assessments evaluated students' communicative competence, a key metric in language acquisition research (Vandergrift and Goh 45).
. Video Analytics: YouTube and
. EdPuzzle analytics tracked student engagement, completion rates, and interaction patterns, providing objective measures of video-based learning (Clark and Mayer 212).Student Perception Questionnaire: A validated questionnaire (Cronbach's alpha = 0.84) captured students' attitudes toward micro-video instruction, following established survey design principles (
. Dörnyei and Taguchi 28).Focus Group Transcripts: Qualitative data from focus group discussions and reflective journals were coded and thematically analysed using NVivo to ensure methodological rigor (Bazeley and Jackson 34).

The micro-videos were carefully scripted, storyboarded, and produced to target both general and technical English skills of the students. Each video was 45–60 s long and accompanied by a three-minute active learning task. The content was structured to address the following:

. Everyday and Domain-Specific Vocabulary: Videos introduced and contextualised both general English and engineering-specific terms, in line with best practices for English for Specific Purposes (ESP) instruction (Nation 18).
. Grammar: Topics included tenses, articles, modals, and clauses, presented with clear examples and concise explanations (Clark and Mayer 216).
. Listening Comprehension: Embedded questions within the videos promoted active listening and immediate feedback (Mayer 92).
. Pronunciation: Phonetic drills and visual cues supported accurate pronunciation, a method that has been shown to be effective in previous studies (Jin et al. 3).
. Speaking Prompts: Role plays and mock interviews encouraged productive language use and real-world communication practice (
. Alasmari 41).Interactive Quizzes: Each video concluded with a short quiz to reinforce learning and promote retention, a strategy recommended by
microlearning theorists (Chadafi and Khasanah 180).
This multi-faceted approach reflects current best practices in multimedia language instruction and is designed to maximize both engagement and learning outcomes (Clark and Mayer 218; Mayer 2009).

Data Analysis

Quantitative Analysis

Quantitative data from the pre- and post-tests were analysed using IBM SPSS Statistics, following established procedures for educational intervention studies (Chadafi and Khasanah 181; Phohnthip Smithsarakarn 531). A paired-sample t-test was conducted to compare the English proficiency scores of the experimental and control groups across four skill areas: vocabulary, listening, pronunciation, and grammar.

The experimental group, which engaged with micro-video instruction, demonstrated statistically significant improvements in all the measured domains. The mean vocabulary score increased from 46.2 (pre-test) to 71.4 (post-test), listening improved from 52.7 to 78.3, pronunciation from 41.5 to 67.1, and grammar from 43.9 to 72.6. All improvements were significant ($p < 0.01$), indicating a robust effect of the micro-video intervention.

These findings are consistent with prior research highlighting the efficacy of microlearning and short-form video content for language acquisition (Chadafi and Khasanah 182; Phohnthip Smithsarakarn 533).

In contrast, the control group, which received traditional textbook-based instruction, exhibited only marginal gains: vocabulary increased from 45.6 to 54.1 and listening from 50.3 to 58.2, with neither change reaching statistical significance ($p > 0.05$). This disparity underscores the added value of micro-video pedagogy for language learning, especially in technical student populations (Alasmari 39).

Cohen's *d* values for the experimental group exceeded 0.8 in all categories, indicating a large effect size according to conventional benchmarks (Cohen 22). This suggests that the observed improvements are not only statistically significant but also educationally meaningful, corroborating the substantial impact of micro-videos on language proficiency (Phohnthip Smithsarakarn, 534).

Qualitative Analysis

Qualitative data were gathered from student reflective journals, focus group discussions and open-ended survey responses. The analysis followed a thematic coding process using NVivo, allowing for the identification of recurring patterns and insights (Bazeley and Jackson 36).

Many students reported that learning through micro-videos was highly engaging and motivating. One participant noted, "It felt like a game. I didn't realize I was learning." This aligns with the findings of Clark and Mayer, who argued that well-designed multimedia materials can increase motivation and reduce learning anxiety.

Students frequently commented on the videos' contextual relevance, particularly the integration of engineering-specific vocabulary and scenarios. As one student reflected, "Videos used terms from our engineering subjects, so it felt useful." This supports Nation's assertion that domain-specific language instruction enhances both motivation and retention (Nation, 19).

Learners also valued the autonomy afforded by the microvideo format. "I liked that I could rewatch and learn at my own pace", wrote another student. This theme echoes Kukulska-Hulme and Shield's findings on the benefits of mobile and self-directed learning environments (Kukulska-Hulme and Shield 273).

Overall, the qualitative data reinforce the quantitative results, highlighting that micro-videos not only improve language outcomes but also foster greater engagement, perceived relevance and learner autonomy.

Findings

The analysis of both quantitative and qualitative data revealed several key outcomes regarding the use of micro-videos as pedagogical tools for English language instruction among undergraduate engineering students.

Micro-videos significantly improved students' retention of language concepts by leveraging this multimodal reinforcement. The combination of visual, auditory, and textual cues allowed learners to process and internalize information more effectively, consistent with Mayer's Cognitive Theory of Multimedia Learning, which emphasizes the benefits of presenting information through multiple channels (Mayer 47; Clark and Mayer 213). This multimodal approach was particularly effective for vocabulary and pronunciation, as students could see, hear, and read new words in context (Alasmari, 38).

The micro-video format facilitated a more personalised learning experience, especially for students with lower initial proficiencies. The ability to pause, replay, and review content at one's own pace empowers learners to address individual gaps and revisit challenging material as needed. This aligns with findings by Kukulska-Hulme and Shield, who highlight the value of mobile and microlearning environments in supporting differentiated instruction and learner autonomy (Kukulska-Hulme and Shield 275).

The inclusion of embedded interactive features, such as quizzes, polls, and comprehension checks, was found to significantly enhance learner attentiveness and engagement. These elements promoted active participation and immediate feedback, both of which are linked to improved learning outcomes in multimedia environments (Clark and Mayer 217; Chadafi and Khasanah 182). Students reported that these interactive tasks made the learning process "feel like a game", thereby increasing motivation and sustaining focus.

Learners expressed a strong preference for the informal tone and visual storytelling techniques employed in the micro-videos. The use of relatable scenarios, conversational language, and engaging visuals helped to lower affective barriers and foster a more relaxed learning atmosphere. This finding echoes Nation's assertion that authentic, context-rich materials enhance both motivation and language acquisition (Nation 21).

Despite these benefits, several challenges were identified. Students noted that the presence of non-educational content on platforms like YouTube and Instagram sometimes led to distraction and reduced time-on-task, a concern also raised in recent literature (Journal of English Language Teaching 26). Additionally, the effectiveness of micro-videos was highly dependent on the quality of content design; poorly structured or overly superficial videos risked undermining pedagogical value. As S2 Pendidikan Bahasa Inggris observes, careful scripting and alignment with learning objectives are essential to maximize educational impact.

Discussion

This study confirms existing literature on the benefits of short-form video for second language learning (Stockwell, 2012; Zhang, 2021). The findings affirm that integrating micro-videos within structured modules can significantly improve English proficiency among technical learners.

The study also reflects on the changing learning ecology of engineering students who are increasingly visual, mobile, and on-demand learners. Instructors must evolve from being content deliverers to learning designers.

The findings of this study suggest several actionable recommendations for educational institutions aiming to leverage micro-videos as pedagogical tools in English language instruction for engineering undergraduates.

Institutions should establish curated repositories of subject-aligned micro-videos, which have been shown to enhance engagement and learning outcomes when tailored to specific academic needs. Such repositories enable easy access to high-quality, relevant content and support consistent instructional standards across courses.

Teachers require targeted professional development in digital video creation and instructional design to maximize the educational value of micro-videos. Training should focus on scripting, storyboarding, and integrating interactive elements, as recommended by Clark and Mayer (Clark and Mayer 220). This upskilling ensures that educators are equipped to produce pedagogically sound and engaging video content.

Curriculum planners are encouraged to adopt a modular approach, embedding micro-videos directly into course materials. This strategy aligns with microlearning principles, which advocate for short, focused learning segments that facilitate better retention and application. Modular design also allows for greater flexibility and personalization in learning pathways.

Learning Management Systems should be upgraded to support advanced video analytics and gamification features. Video analytics provide insights into student engagement and learning patterns, while gamification elements—such as badges, leaderboards, and interactive quizzes—further motivate learners and reinforce key concepts. These technological enhancements create a more dynamic and data-driven learning environment.

While this study offers valuable insights into the use of micro-videos for language learning, several limitations must be acknowledged.

The research was conducted at a single institution, which may limit the generalizability of the findings to other educational contexts or student populations. Future studies should involve multiple institutions and diverse student cohorts to validate and extend the results.

The study assessed learning outcomes over an eight-week period and did not evaluate long-term retention. Further research is needed to determine whether the observed gains in language proficiency are sustained over time.

Future research could explore the potential of AI-generated adaptive micro-videos, which tailor content to individual learner needs and preferences. Additionally, investigating neurocognitive responses to video-based learning—such as attention, memory, and motivation—could provide deeper insights into the mechanisms underlying micro-video effectiveness.

Conclusion

Micro-videos offer a promising, scalable, and learner-centric approach to teaching English in engineering colleges. They cater to contemporary learning behaviors and can supplement traditional pedagogy. As the education system shifts towards hybrid models, micro-video integration will be key to fostering linguistic competence in diverse learners.

Works Cited

- Alasmari, Abdullah. "The Effective Use of YouTube Videos for Teaching English Language in Classrooms as Supplementary Material at Taibah University in Alula." *International Journal of English Language and Linguistics Research*, vol. 4, no. 3, 2016, pp. 32–47.
- Bazeley, Pat, and Kristi Jackson. *Qualitative Data Analysis with NVivo*. Sage, 2013.
- Chadafi, M., and U. Khasanah. "The Effectiveness of Reels Instagram Toward Students' English Speaking Performance." *Journal of English Education and Technology*, vol. 5, no. 3, 2024, pp. 177–189.
- Clark, Ruth C., and Richard E. Mayer. *e-Learning and the Science of Instruction*. Wiley, 2016.
- Cohen, Jacob. *Statistical Power Analysis for the Behavioral Sciences*. 2nd ed., Lawrence Erlbaum Associates, 1988.
- Council of Europe. *Common European Framework of Reference for Languages: Learning, Teaching, Assessment*. Cambridge UP, 2001.
- Creswell, John W., and Vicki L. Plano Clark. *Designing and Conducting Mixed Methods Research*. Sage, 2017.
- Dörnyei, Zoltán, and Tatsuya Taguchi. *Questionnaires in Second Language Research: Construction, Administration, and Processing*. Routledge, 2010.
- Jin, Lixian, et al. "The Impact of Short Video-Based Pronunciation Instruction on EFL Learners' Speaking Skills." *Journal of Language Teaching and Research*, vol. 12, no. 1, 2021, pp. 1–10.
- Journal of English Language Teaching. "From Passive Learning to Active Creation: YouTube as a Tool for Assessment in Engineering English Classes." *Journal of English Language Teaching*, vol. 67, no. 1, 2025, pp. 22–29.

- Krashen, Stephen D. *Principles and Practice in Second Language Acquisition*. Pergamon, 1982.
- Kukulska-Hulme, Agnes, and Lesley Shield. "An Overview of Mobile Assisted Language Learning: From Content Delivery to Supported Collaboration and Interaction." *ReCALL*, vol. 20, no. 3, 2008, pp. 271–289.
- Mayer, Richard E. *Multimedia Learning*. 2nd ed., Cambridge UP, 2009.
- Nation, I. S. P. *Learning Vocabulary in Another Language*. Cambridge UP, 2013.
- Phohnthip Smithsarakarn. "The Effects of Microlearning on EFL Students' English Speaking: A Systematic Review and Meta-Analysis." *International Journal of Learning, Teaching and Educational Research*, vol. 23, no. 5, 2024, pp. 526–544.
- Rais, Muh. Aminullah. "Students' Vocabularies Acquisition by Using Krashen's Hypothesis at ASSET (Pare, English Village)." 2022, repositori.uin-alauddin.ac.id/24142/1/40300117071%20MUH.%20AMINULLAH%20RAIS.pdf.
- S2 Pendidikan Bahasa Inggris, Universitas Negeri Surabaya. "Facebook Shorts and YouTube Shorts for Microlearning English." 2025, s2pendidikanbahasainggris.fbs.unesa.ac.id/post/facebook-shorts-and-youtube-shorts-for-microlearning-english.
- Sweller, John. *Cognitive Load Theory*. Routledge, 2011.
- Vandergrift, Larry, and Christine C. M. Goh. *Teaching and Learning Second Language Listening: Metacognition in Action*. Routledge, 2012.
- Wang, Qiyun, and Wei Zhang. "Integrating Short Video Platforms into Higher Education: Opportunities and Challenges." *Educational Technology Research and Development*, vol. 70, no. 1, 2022, pp. 12–28.