

Microlearning on TikTok: Developing Creativity and Communication for Vocational Students

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ABSTRACT

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Non-technical skills (soft skills), such as creativity and oral communication, have become increasingly important for Vocational High School graduates in the Industry 4.0 era; however, their systematic integration into the curriculum remains limited. This study aimed to develop and examine the feasibility and preliminary effectiveness of a TikTok-based microlearning platform to support the development of vocational students' soft skills. The study employed a research and development approach using the ADDIE model and involved 32 vocational students in Boyolali, Central Java, Indonesia. Data were collected through expert validation, student response questionnaires, and a pretest-posttest design. Expert validation indicated that the developed media met high feasibility criteria, with an average score of 88% from media and material experts. Student responses suggested a positive level of acceptance, with an average score of 83.6%. The pretest-posttest results showed modest increases in average scores for creativity (2.44 points) and oral communication (8.12 points). These findings suggest that TikTok-based microlearning has potential as a supportive and engaging tool for facilitating the development of vocational students' soft skills, although further studies with larger samples and comparative designs are recommended to confirm its effectiveness.

Keywords

Creativity
Microlearning
Oral Communication
Soft Skills
TikTok

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Introduction

Vocational education, especially Vocational High Schools, plays a strategic role in preparing a competent workforce that is in line with industry needs [1]. The demands of the Industrial Revolution 4.0 do not only focus on technical skills (hard skills), but also demand mastery of soft skills such as creativity and effective communication [2]. Unfortunately, the development of soft skills in vocational schools has not received optimal attention, so many graduates are still considered lacking in aspects of communication and creativity [3]. In fact, the contribution of soft skills to individual success in the world of work is very significant [4].

This gap was reinforced by a preliminary study at a Vocational High School in Boyolali, Jawa Tengah, Indonesia, which found that students' creativity and oral communication skills still needed significant development. The data showed that most students (62.5%) reported difficulty finding new ideas and felt awkward when expressing their opinions orally. This low mastery is also reflected in the initial assessment scores from the researchers' preliminary study in 2025, which show that the average scores for creativity (38.44) and oral communication (34.56) remain at levels that require optimization. This condition highlights the gap between the competencies taught in schools and the real needs of the world of work.

Answering these challenges requires learning media innovations that are relevant to the characteristics of the digital generation [5]. The microlearning approach presents material in small, compact units that are easy to understand. This makes it a potential solution [6]. The utilization of the TikTok platform as media has been shown to increase student engagement in learning [7]. Furthermore, research shows that social media platforms such as TikTok can play an important role in soft skills development [8], and the majority of students also agree that this application can help improve their soft skills [9]. This is reinforced by the finding that microlearning videos on TikTok have a positive impact on student learning outcomes [10].

Despite its potential, the development of TikTok microlearning media, systematically designed using a valid development model to enhance creativity and oral communication among Vocational High School Students in Indonesia, remains limited. Therefore, this study contributes by developing and testing such media products. The objectives of this study are to: (1) describe the development process of TikTok-based learning media, (2) determine the level of media feasibility based on expert assessment, and (3) measure the effectiveness of media use in improving creativity and oral communication of vocational students.

Literature Review

Soft skills such as creativity and oral communication are critical competencies for vocational school graduates to adapt and succeed in the 21st-century workforce. These skills are often overlooked in vocational curricula that prioritize technical abilities [11], despite their importance in enhancing adaptability, teamwork, and problem-solving [12]. The lack of soft skill development has been widely reported as a significant gap in vocational education systems, particularly in developing countries [13].

One of the proposed solutions to this challenge is microlearning a digital instructional strategy characterized by the delivery of small, focused learning units. It is shown to improve learner engagement, retention, and flexibility in knowledge acquisition [14],[15]. Microlearning is highly compatible with the learning behavior of Gen Z students, and media-rich content that can be accessed through mobile devices [16].

Among digital platforms, TikTok stands out as a potential educational tool due to its ability to deliver short, engaging video content. Recent studies indicate that TikTok is not only effective in increasing student engagement but also supports communication skill development and creativity when implemented through structured learning frameworks [17], [18]. Conde et al. [8] emphasize how social media platforms like TikTok can be adapted to promote reflective communication and collaboration in educational settings. Similarly, reports that students become more confident and expressive after engaging with TikTok-based learning activities [19].

Furthermore, TikTok-based microlearning integrated with validated instructional models such as ADDIE has demonstrated significant learning gains. Jamaludin et al. [10] confirmed that microlearning videos designed for TikTok can improve both academic achievement and student participation in high school contexts. However, there is a lack of empirical studies that develop and validate TikTok-based microlearning media specifically designed to enhance soft skills in vocational education in Indonesia. This research aims to address that gap by designing, validating, and evaluating such media.

Material And Methods

This research applies the Research and Development (R&D) method to produce learning media products and test their feasibility and effectiveness. The development model used in this research is the ADDIE model, which comprises five systematic stages: Analysis, Design, Development, Implementation, and Evaluation.

A. Participants and Research Location

Participants in this study were 32 11th-grade students in the Computer, Network, and Telecommunication Engineering program at a vocational high school in Boyolali, Central Java,

Indonesia. Participant selection was based on the results of a preliminary study that identified a need to improve soft skills in the classroom, specifically creativity and oral communication. Inclusion criteria were:

- Students in the Computer, Network, and Telecommunication Engineering program;
- Regular attendance in Web Design courses was necessary to ensure that all students received the complete intervention treatment, which was crucial for testing media effectiveness in the Research and Development (R&D) method; and
- Willingness to participate was necessary to ensure the validity of student response and post-test data, given that this study involved data collection through student response questionnaires and soft skills proficiency tests.

Exclusion criteria were:

- Students who were absent for more than two sessions during the intervention, determined to maintain the validity of the media effectiveness results (pretest-posttest), as absent students did not receive the full dose of microlearning; and
- Students who experienced technical difficulties accessing TikTok, determined because this learning intervention was entirely based on the TikTok platform, and this study tested media developed using CapCut and Canva implemented through TikTok.

Technical difficulties will prevent full participation, potentially compromising the test's validity. The research was conducted from March to June 2025.

B. Development Procedure (ADDIE Model)

1. Analysis

The analysis phase focused on identifying problems among 11th-grade students in the Computer, Network, and Telecommunication Engineering program. Initial research revealed significant gaps in students' soft skills of creativity and oral communication. To address this, a needs analysis of the target students was conducted through a questionnaire, which revealed a strong preference (87.5%) for learning via short videos and interest (53%) in learning soft skills through TikTok. Based on these findings, as well as an audit of the availability of school resources (such as smartphones and internet) and the readiness of human resources (teachers and students), the established solution strategy was to develop TikTok video-based microlearning media.

2. Design

In the design phase, the product framework began to be systematically structured by creating a "task inventory" detailing the flow of four micro-learning videos (each 1 minute) to train creativity and oral communication. The video content was based on "performance objectives," in which complex soft skill concepts were broken down into practical, actionable indicators. A storyboard is created based on a pre-written script and serves as

a visual guide for video production. Each panel depicts the sequence of scenes, a brief narrative, and supporting visual elements that will be featured in the video. The storyboard is shown in Fig. 1.



Fig. 1. Video Storyboard

Furthermore, this phase included the development of a "testing strategy" comprising validation sheets for subject matter or media experts and student response questionnaires. Meanwhile, the "investment cost" aspect was reduced to zero by using free software such as Canva, CapCut, and the TikTok platform. Fig. 2 explains how to create an asset using Canva.

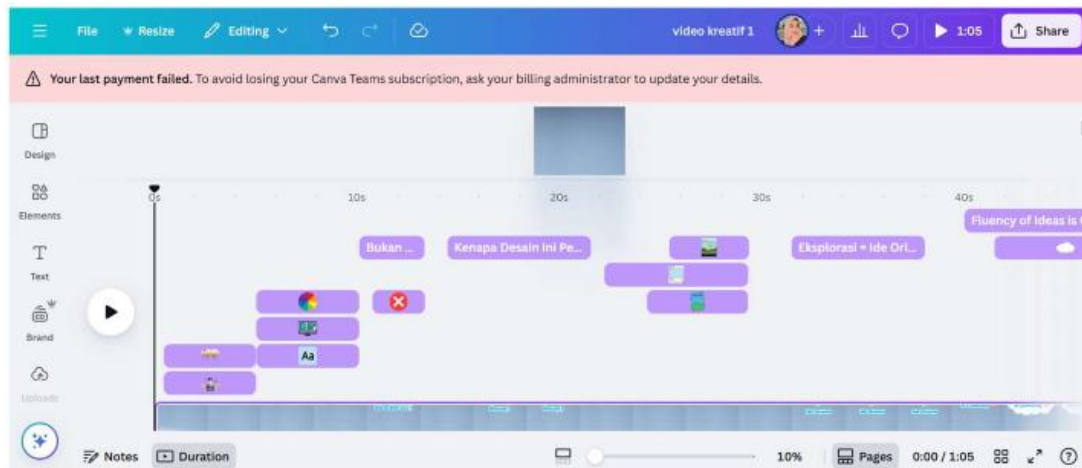


Fig. 2. Asset creation using Canva

3. Development

In the development phase, researchers translated the design plans into four ready-to-use TikTok microlearning videos. The production process began with creating content scripts and storyboards for the four videos, followed by recording video sources, creating

supporting visual assets using Canva, and final editing using CapCut. To determine the suitability of the media before use, the researchers asked media experts to provide assessments and feedback on the developed media. The suitability assessment instrument is presented in Table 1 and comprises three aspects: design, content, and language. Each aspect consists of several indicators; each is rated on a Likert scale from 1 (very poor) to 5 (excellent).

Table 1. Expert Validation Instruments

Aspects	Indicators
Design Aspects	The initial appearance of TikTok videos aligns with the development of soft skills.
	The layout of text, icons, and visual elements is clear and easy to understand.
	The choice of colors, visual effects, and transitions is engaging and supports the message.
	The image quality and text size are appropriate for TikTok's vertical video format.
	The audio quality and sound effects are clear and support content comprehension.
	The video's length effectively conveys the material without compromising the quality of the information.
	The clarity of the video's narrative and text ensures easy comprehension for students.
	The video's visual appeal is strong, boosting student interest in learning soft skills.
Content Aspect	TikTok video content aligns with the development of soft skills.
	The material presented in the videos is relevant to students' needs in improving soft skills.
	The material in the videos is presented clearly, concisely, and easily understood by students.
	The videos are structured systematically to ensure a smooth learning flow.
	The examples and illustrations in the videos are relevant to help students understand the concepts of creativity and oral communication.
	The videos can engage students in developing soft skills in everyday life.
	The information in the videos encourages student interaction and reflection on their skills.
Language Aspects	The video length is appropriate for microlearning without compromising the material's essence.
	The language used in the video is easy for students to understand.
	The vocabulary chosen is appropriate for students' comprehension levels and avoids ambiguity.
	The language is polite and proper for soft skills learning.
	The sentences in the video are clearly, concisely, and effectively structured.
	There is no unnecessary repetition of words or phrases.
	The narration and captions in the video help clarify the message without creating confusion.

The feasibility of the media was assessed by a media expert and a material expert using a validation sheet. This assessment also included a suggestion form for improvement, including adjustments to the background and text layout. The researchers implemented all media improvement suggestions from the experts. The assessment results show that the learning media developed are very feasible to use. A summary of the validation results is presented in Table 2.

Table 2. Results of Media Feasibility Validation by Experts

Validator	Aspects	Score Percentage	Criteria
Media Expert	Design, Material, Language	89%	Very Valid
Material Expert	Design, Material, Language	87%	Very Valid

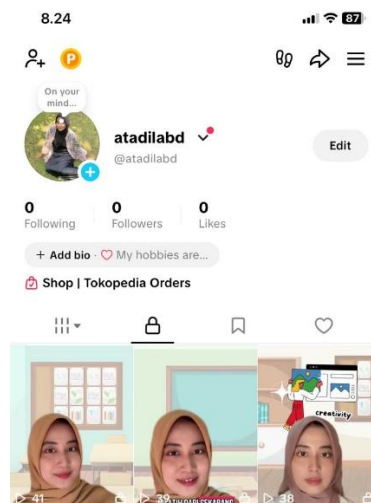
The average eligibility score of 88% indicates that this media has met the rules of good learning media in terms of visual design, material suitability, and language use. The assessment results show that the learning media developed are very feasible to use.

4. Implementation

During the implementation phase, TikTok video microlearning media is ready for use, with teachers and students prepared. Teachers are provided with a teaching strategy guide for integrating the media into offline classroom learning. Meanwhile, students are directed to access and watch a series of videos, complete accompanying practical challenges, and then complete a response questionnaire to assess their acceptance and impact of the learning media.

5. Evaluation

The evaluation phase focused on students' perspectives to measure two main criteria: the level of acceptance of the media and the impact (effectiveness) of the media on improving students' soft skills in creativity and oral communication. To measure these criteria, the evaluation tools chosen were a student response questionnaire (to measure acceptance) and a pretest-posttest instrument (to measure effectiveness quantitatively). This evaluation, which included administering the questionnaire and posttest, was conducted after all micro-learning videos were completed. See Fig. 3.

**Fig. 3.** TikTok videos

Results

The research findings consist of two aspects: the first is a test of the effectiveness of media development in improving the soft skills of vocational high school students. The second is the media's acceptance by vocational high school students.

A. Effectiveness of Media in Improving Students' Soft Skills

The Soft Skills Competency Test was used to measure the effectiveness of media in enhancing creativity and oral communication. This test was administered as a pre-test (before treatment) and a post-test (after treatment). The instrument was adapted from previously validated research [20]. Each item was rated on a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The assessment instrument is shown in Table 3.

Table 3. Provide the rubric for the Soft Skill Ability Test

Indicator	Descriptor
Self-management	1. I don't get angry if others interfere in my affairs. 2. I prioritize logic over feelings.
Motivation	1. I strive to achieve the best performance in my tasks/jobs. 2. I take pride in my tasks/jobs. 3. I strive to achieve results in tasks/jobs that exceed my colleagues/others. 4. I excel at my work. 5. I believe that good results will be rewarded.
Oral communication	1. I convey things clearly verbally 2. I feel comfortable talking to anyone
Teamwork	1. I feel comfortable working in a team 2. I am actively involved in shared tasks

The first test was to determine whether the pretest and posttest data were normally distributed. The results of the Kolmogorov-Smirnov normality test showed a p-value of 0.200 (2-tailed) > 0.05, thus confirming the normal distribution of the data. The second step was to compare the pretest and posttest scores. The data in Table 4 indicate that TikTok-based microlearning media were effective in fostering positive stimulation of students' creativity and oral communication soft skills. To verify whether these differences were truly significant, we needed to interpret the Paired Sample t-Test results shown in the "Paired Samples Test" output table.

Table 4. Comparison of Pretest and Posttest Average Scores

Soft Skill Aspects	Average Score		Score Increase
	Pretest	Posttest	
Creativity	76.88	79.32	+2.44
Oral Communication	69.12	77.24	+8.12

The correlation analysis between the pre-test and post-test scores indicates a weak positive relationship, with a correlation coefficient of 0.127 and a significance value of 0.488. As the significance value exceeds the 0.05 threshold, the results suggest that there is no statistically significant relationship between the pre-test and post-test variables.

B. Students Acceptance Test

Researchers also measured students' acceptance and perceptions after using the developed media. This questionnaire consisted of 10 items covering four main aspects, with each item rated on a Likert scale from 1 (strongly disagree) to 5 (strongly agree). The aspects and indicators are as explained in Table 6 as follows:

Table 6. A questionnaire to measure students' acceptance.

No.	Indicators
1	The overall design of the TikTok videos used for soft skills learning is engaging.
2	I like the combination of colors, text, and visual elements in this educational TikTok video.
3	This TikTok video uses a clear, easy-to-read font and size.
4	This educational video can be used independently and accessed anytime on TikTok.
5	The language used in the video is simple, making it easy to understand.
6	The concepts presented in the video are relevant to my level of understanding.
7	This TikTok video helps me understand the importance of creativity in everyday life.
8	This TikTok video helps me improve my oral communication skills.
9	The use of images, animations, and illustrations in the TikTok video helps me better understand the content.
10	This educational TikTok video presents information concisely, clearly, and in a well-structured manner.

Discussion

The findings of this study confirm that TikTok-based microlearning media can be a feasible and effective solution to enhance vocational students' soft skills, particularly creativity and oral communication. The high feasibility score (88%) from expert validation indicates that the systematic development process using the ADDIE model successfully produced high-quality learning media. This aligns with the view of Choirunnisa et al. [6], who emphasized that video-based learning media can effectively support the development of soft skills in vocational education. Based on the successful use of the microlearning format and its advantages, it is proposed to develop additional courses using this format in the future [21].

Furthermore, the overwhelmingly positive student response (83.6%) indicates that TikTok, as a platform familiar to Generation Z, aligns closely with their learning preferences. This finding aligns with Nugrha et al. [22], which highlights the flexibility and engagement of mobile-based microlearning, and Conde et al. [8] found that TikTok-based microlearning could increase student participation in higher education. The use of short videos on TikTok positively influences intrinsic motivation while reducing information density and cognitive overload [23].

The descriptive results also revealed improvements in both creativity and oral communication. Although the increase in creativity (+1.22) was relatively modest, the improvement in oral communication (+4.06) was more substantial. This suggests that

microlearning on TikTok is particularly effective for skills that can be directly practiced, such as oral communication. This observation resonates with Islamiah et al. [24], who reported improvements in public speaking skills through TikTok educational activities. Based on the research findings, the questionnaire revealed that the students believed that incorporating mobile-assisted language learning through YouTube and TikTok significantly enhances their English communication skills [23].

Compared with previous studies, the present research contributes by focusing on vocational education in the Indonesian context, specifically addressing creativity and oral communication. Fadilah et al. [19] This study emphasizes increased student confidence through TikTok-based learning and provides empirical evidence of measurable improvements in soft skills. Moreover, Jamaludin et al. [10] showed that TikTok microlearning enhanced academic achievement in physics, findings that resonate with the current findings that it can also strengthen vocational students' non-technical skills.

Nonetheless, this study has some limitations. The use of this media depends on a stable internet connection and potential distractions from other entertainment content on the TikTok platform. In addition, the current product covers only two soft skills and does not yet include an automatic feedback feature. These limitations can serve as a basis for further research and development.

Conclusion

Based on the development and evaluation process, this study concludes that the developed TikTok-based microlearning media is highly feasible and effective for developing the soft skills of creativity and oral communication among vocational students. This study fills a gap in the literature by providing a validated, proven-effective learning media development model that leverages popular digital platforms to address the challenge of low mastery of soft skills in vocational education. The main limitations of this study include reliance on an internet connection, potential distractions on the platform, and limited coverage, focusing only on two types of soft skills: creativity and oral communication. For future research, it is recommended that the development cover a broader range of soft skills and use experimental research methods with control groups to achieve a more objective measurement of effectiveness.

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Conflict of Interest

We declare that there is no conflict of interest.

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