MICROLEARNING VIDEOS THROUGH TECHNOLOGICAL, PEDAGOGICAL, AND CONTENT KNOWLEDGE: THE LENS OF USER EXPERIENCE

Rabia Aladawiya
Faculty of Economics, Universitas Negeri Jakarta, Indonesia
Email: rabiaaladawiya16@gmail.com

Suparno
Faculty of Economics, Universitas Negeri Jakarta, Indonesia
Email: suparno@unj.ac.id

Nadya Fadillah Fidhyallah
Faculty of Economics, Universitas Negeri Jakarta, Indonesia
Email: nadyaffidhyallah@unj.ac.id

ABSTRACT

This research aims to explore and understand user experiences in the context of developing technology, pedagogy, and content knowledge-based microlearning videos. Qualitative research methods were employed to gain in-depth insights into how educators and learners utilize and interpret the implementation of Basic Marketing Principles through microlearning videos. The study focused on students in the 10th grade specializing in Marketing at State Vocational High School 12 Jakarta. The research approach involved data collection through in-depth interviews and participatory observations of the use of microlearning videos. The findings indicated that the developed microlearning videos received positive validation from media and content experts. Evaluations from both teachers and students revealed a high level of acceptance of microlearning videos during the learning process. Consequently, this research provides a meaningful learning experience by presenting short, focused learning media that can be easily accessed at various times and locations.

Keyword: User experience, Microlearning, Video, Technological, Pedagogical, Content

ABSTRAK

Penelitian ini bertujuan untuk mengeksplorasi dan memahami pengalaman pengguna dalam konteks pengembangan *video microlearning* yang berbasis *Technological, Pedagogical and Content Knowledge*. Metode penelitian kualitatif telah diterapkan untuk mendapatkan informasi mendalam mengenai cara guru dan peserta didik memanfaatkan serta menginterpretasikan penerapan pembelajaran Dasar-Dasar Pemasaran melalui *video microlearning*. Subyek penelitian terfokus pada siswa kelas X Pemasaran di SMK Negeri 12 Jakarta. Pendekatan penelitian melibatkan proses pengumpulan data melalui wawancara mendalam dan observasi partisipatif terhadap penggunaan *video microlearning*. Temuan penelitian menunjukkan bahwa *video microlearning* yang telah dikembangkan mendapatkan validasi positif dari para ahli media dan konten. Evaluasi dari guru dan peserta didik mengungkap tingkat penerimaan yang tinggi terhadap *video microlearning* selama proses pembelajaran. Dengan demikian, penelitian ini menyajikan pengalaman belajar yang bermakna dengan penggunaan media pembelajaran yang singkat dan berfokus pada pembelajaran, yang dapat diakses dengan mudah di berbagai waktu dan tempat.

Kata Kunci: Pengalaman pengguna, Microlearning, Video, Teknologi, Pedagogi, Konten

INTRODUCTION

Education plays a crucial role in keeping up with technological advancements and preparing individuals with relevant skills to face the challenges of the 21st century (Rahayu, 2019). One of the government's initiatives is to organize vocational education with the aim of developing students' competencies in both theoretical and practical aspects. Government Regulation No. 57 of 2021 on National Education Standards emphasizes that vocational education is directed towards enhancing students' competencies, enabling them to be self-reliant and pursue further education according to their expertise (Setyawati et al., 2022). However, the reality is that the unemployment rate in Indonesia indicates that vocational school graduates have the highest unemployment rate compared to graduates from other types of schools (BPS, 2022).

In the current educational context, teachers are faced with opportunities and challenges in adopting technology in the teaching and learning process. Therefore, an understanding of the integration between technology and the learning process is necessary, which can be obtained through the application of the Technological, Pedagogical, and Content Knowledge (TPACK) framework. TPACK, first proposed by Koehler and Mishra in 2006, illustrates the complexity of teaching activities involving mastery of content knowledge, pedagogical knowledge, and technological knowledge in the learning process (Turmuzi & Kurniawan, 2021).

With the shift towards digital learning, teachers are transitioning from traditional media to more modern forms such as images, slide presentations, voice recordings, and videos (Isnaeni & Hidayah, 2020). The selection of learning media involving students' sensory experiences is considered essential to enhance the learning experience and deepen students' understanding in the learning process. One learning medium that engages various senses is video, as it can combine vision, hearing, and physical movement in line with video instructions.

The needs analysis conducted through interviews with a Marketing Class X teacher at State Vocational High School 12 Jakarta indicates that current learning media are still limited, utilizing available online resources without adjusting to material constraints and the needs of students. Educational videos available on platforms like YouTube typically have long durations, exceeding 25 minutes, making it challenging to find specific information. Therefore, the development of learning media in a shorter and easily accessible format for students is needed, and one of the solutions is through video microlearning. Microlearning's succinct and uncomplicated features improve understanding, making it a more successful and efficient learning process (Sedaghatkar et al., 2023).

Based on the issues, this research is focused on exploring the use of video microlearning based on technological, pedagogical, and content knowledge in the learning process. The study aims to gain a deep understanding of how the use of video microlearning can enhance the effectiveness of learning, providing innovative and efficient learning strategy development in the current era of digital education.

LITERATURE REVIEW
Video Microlearning

The creation of instructional videos using the microlearning approach involves the use of video clips containing interactive content (So et al., 2020). Presenting instructional videos with lengthy durations can diminish the ability to draw conclusions from information, potentially hindering comprehension (Sung et al., 2022). The microlearning approach minimizes the learning load by delivering focused and contextual learning in line with the learning objectives. The ideal duration for microlearning videos does not exceed 15 minutes for each specific topic (Shatte & Teague, 2020). Introducing brief and straightforward video content can enhance students' understanding more efficiently through video presentations.

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Concentrating on the content material in microlearning videos can help students maintain focus without easily being distracted by disruptions outside the material context (Widiawati et al., 2022). By reducing distractions during the learning process, learning can occur more quickly and smoothly.

Technological, Pedagogical and Content Knowledge

TPACK, an abbreviation for Technological, Pedagogical, and Content Knowledge, was initially developed by Mattew Koehler and Punya Mishra in 2006 and subsequently widely accepted and adopted by educators and developers worldwide. According to Mishra and Koehler, TPACK is a framework used by educators to effectively and efficiently integrate technology, pedagogy, and content to enhance the quality and learning outcomes of students (2006). The integration of these three aspects is expected to form a comprehensive system, providing an optimal learning experience for both teachers and students (Hanik et al., 2022). The instructional approach using TPACK places students as the main focus, so in this context, TPACK can develop various competencies needed for everyday life.

Marketing Fundamentals

The subject of Marketing Fundamentals is a mandatory requirement for students at the 10th-grade level in Vocational High Schools (SMK), falling under the vocational subject group. This subject serves as the foundational understanding for the Marketing Skills Program, presenting various elements of material to comprehend the basics of Marketing Science (Khadijah et al., 2022)Marketing Science at the 10th-grade level in SMK forms the foundation consisting of knowledge, skills, and attitudes essential for developing marketing competencies at an advanced level (Habibah et al., 2022). The topics covered in this subject include the concepts and processes of marketing, marketing issues, professions in the field of marketing, consumer behavior, market analysis, sales services, and business communication.

METHOD

This study utilizes a methodology that incorporates data collection methods, including in-depth interviews, participatory observation, and interaction analysis, to explore the application of video microlearning (Machin-Mastromatteo, 2015). Using a qualitative approach, the research aims to present a comprehensive overview of the learning process facilitated by concise and focused video microlearning. In-depth interviews are carried out to gather insights into the challenges and requirements of instructional media, specifically among 10th-grade Marketing students at State Vocational High School 12 Jakarta. Content analysis involves evaluating the credibility of video content with the input of media and content experts, such as experienced educators. The validation process will be conducted through questionnaires, assessing various aspects including visual presentation, content quality, and language. Participatory observation is focused on assessing the cognitive abilities of students both before and after the implementation of video microlearning. Additionally, it aims to evaluate the effectiveness of the media following the trial period.

RESULTS AND DISCUSSION

The results of observations and interviews with teachers indicate that the learning process at school has undergone a transformation into digital learning. This digital learning model involves the use of e-learning platforms such as Google Classroom, slide presentations, images, digital books, and videos. Teachers actively create most of the materials and media references, but some are also sourced from online platforms. Nevertheless, there is often a mismatch between the available learning resources and the intended learning objectives. This

is a concern because information available on the internet can sometimes convey unclear and ambiguous messages (Kortum et al., 2008)

Furthermore, regarding the use of videos, they are commonly sourced from the YouTube platform, resulting in relatively long durations and high video quality, ultimately posing challenges to accessibility and the sustainability of learning (Marti et al., 2023). In this context, challenges arise as the extended duration may reduce student engagement, and the high video quality may require a good internet connection. Therefore, a review and adjustment of digital learning resources are needed to ensure the effectiveness and sustainability of learning.
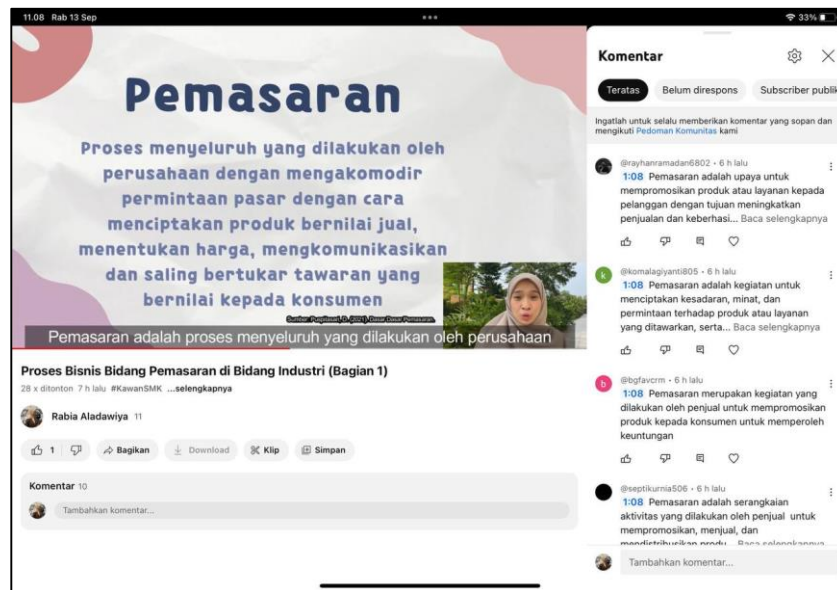

Figure 1. Video Microleaning

Source: Data processed by researchers (2023)

Delivering technology, pedagogy, and content-based microlearning videos uploaded to a YouTube channel is the goal of the most recent product innovation developed. This product is comprised of two videos, each lasting 2-4 minutes, and is designed to be concise and targeted at providing educational information in an effective manner.

Content Analysis of Microlearning Video

This qualitative study involves the assessment of video microlearning through collaboration with media experts, content experts, teacher feedback, and student responses. The evaluation process includes methods such as interviews, observations, and the use of questionnaires with Likert scales to measure responses and perceptions toward video microlearning.

Table 1. Likert Scale

No	Percentages	Description
1.	81.00% - 100.00%	Very good, can be used without improvement.
2.	61.00% - 80.00%	Very good, can be used without improvement.
3.	41.00% - 60.00%	Less valid, less good, need major repairs.
4.	21.00% - 40.00%	Invalid, ineffective, not good, cannot be used.
5.	00.00% - 20.00%	Very bad, unusable

Source: Data processed by Researchers (2023)

After undergoing feasibility testing by experts and trial responses, it was found that the validity level of the media reached 95%, while the content achieved 92%. Subsequently, a trial was conducted with the participation of teachers and students, who provided positive responses of 94% and 95%, respectively. The results of this evaluation confirm that the microlearning video is not only considered appropriate but also effective as a learning tool. Microlearning videos can also attain a high level of effectiveness, which solidifies their standing as a useful and efficient learning tool (Sozmen, 2022). This success indicates that the microlearning video meets the required quality standards to be an effective learning media.

Microlearning videos are considered effective in delivering content with high appeal by combining audio and visual elements. With a short and focused format, these videos make it easy for learners to understand the content according to the learning objectives, even accelerating the comprehension process. Because microlearning is so flexible, students can tailor their learning plan to suit their own requirements and interests (Susilana et al., 2022). Another advantage is that learners can study independently, as learning activities with videos are not constrained by space and time limitations. While providing benefits, this also poses a challenge for teachers to monitor each step of the learners more effectively.

User Experience on Microlearning Video

In user experience, the evaluation results from 36 students indicate that they gave a score of 2563 out of a total of 2700, demonstrating an approval rate of 94%, which can be categorized as excellent. According to users, this product provides a significant learning experience. In this instance, user experience is crucial because it gives a clear picture of how well the product satisfies the needs and expectations of the user (Konstantakis et al., 2018). Students reported that they feel in complete control of video access, allowing them to adjust the speed, slow down, start, and stop video scenes anywhere as needed. This flexibility gives students the freedom to tailor their learning experience according to their understanding levels and preferences.

The decision to upload videos on the YouTube channel has also proven to provide a valuable interactive dimension. Uploading videos to YouTube fosters a dynamic, two-way relationship between content creators and viewers in addition to providing content (Hoiles et al., 2017). Students can not only watch videos but also actively participate by providing feedback and asking questions through the comment section. This creates a dynamic learning environment and facilitates interaction between students and content creators. Thus, the results of the user experience test suggest that the product not only provides optimal accessibility and flexibility but also stimulates student participation, making it an effective and satisfying learning solution.

CONCLUSION AND RECOMMENDATION

The research's conclusions—which included observations, interviews, and assessments from multiple sources—showed that traditional teaching methods are not the only way that students learn the Fundamentals of Marketing subject. The analysis's findings point to the need for technologically integrated instructional materials, especially those that make use of video microlearning. A high degree of overall approval was eventually attained through the participation of media experts, content specialists, teacher feedback, and student responses in the content validation process.

There are certain disadvantages to this media, such as the requirement for teacher supervision of the learning activities, even though its efficacy in raising student engagement and offering an excellent learning experience is acknowledged. As a result, more work needs to be done to address these issues. In order to better meet the needs of students of various

backgrounds, it is hoped that future research will delve deeper into the use of microlearning videos customized to each student's learning style.

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