

Analysis of Microlearning-Based Learning Media Needs: A Retrospective Study at Vocational High School

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ABSTRACT

The goal of this study is to determine the Office Management Vocational Program's needs for microlearning-based learning media. Data for this study were acquired using a retrospective method from teachers of Office Automation and Governance programs at vocational schools in West Java. The findings of the study demonstrated that microlearning-based learning media can be a viable alternative for encouraging students to learn on their own. Teachers should develop engaging learning materials to inspire students to think creatively and to encourage them to dive deeper into the materials.

Keywords: *Micro-Learning, Online Learning, Material Development, Vocational High School (SMK).*

1. INTRODUCTION

The current Indonesian government's pandemic strategy has had a direct impact on education administration at all levels. To ensure that the learning process continues, the school learning system must be tailored to the pandemic situation and condition. As a result, all educational institutions confront the difficult task of preparing and developing appropriate learning techniques, such as distance learning over the internet. This has necessitated the adaptation of instructors, students, educators, parents, and all other relevant parties to the introduced form of learning.

The learning strategy chosen demands the availability and assistance of adequate information and communication technology (ICT). In practice, however, the online method has resulted in a plethora of problems and concerns. The most serious problems faced by most teachers and students were a lack of appropriate technical tools required for online learning to take place from homes, such as limited internet access and cellular device

ownership [1]. Furthermore, a lack of understanding of how to utilize the equipment becomes an issue in this situation. As a result, teachers and students are unable to access the internet, making it difficult for the learning process to go as it should.

The teacher's efforts are the first strategic step in resolving this issue. For an effective learning process, the teacher's inventiveness in packaging the learning information using digital learning media becomes a must. The media has a critical role to play in drawing attention and increasing student enthusiasm to learn. The use of appropriate media can manipulate and bring a difficult-to-reach object into the classroom, such as wild animals, outer space, soil structure, ocean depth, and other similar things.

Texts, visual images, audio, video, virtual reality, interactive multimedia, hardware technologies, and software are all examples of learning media that may be created and presented to enhance and improve the learning process [2]. ICT is becoming increasingly crucial in the learning process because it allows teachers

and students to easily access material from a variety of sources [2]. As a result, teachers have more freedom to build a more engaging, diversified, interactive, effective, and efficient learning experience.

Microlearning is a type of e-learning-based distant learning that provides a fresh approach to learning design and management. Microlearning is a teaching strategy in which microcontent is presented in a macro activity. The content of the learning material (object learning) is broken down into smaller chunks and presented in a variety of media formats. Information is delivered in "short content," which allows students to recall and comprehend the material in a shorter amount of time [3, 4]. Microlearning enables students to gain access to additional information and knowledge. As a result, microlearning is thought to be able to alleviate mental fatigue in students and prevent learning boredom, demotivation, and other cognitive impairments [5].

Microlearning allows students to tailor their learning environment and time to their mood and ability to comprehend the lesson [5]. Through the use of a cellular device, students can learn anywhere and at any time based on their conditions. As a result, microlearning can be used in formal, nonformal, and informal learning environments [3]. However, for effective results, technological advancements used in the microlearning process must be accompanied by an increase in the quality of human resources, allowing them to apply and adapt to the advancements.

In light of the preceding discussion of the importance of microlearning, it is reasonable to assume that the use of relevant, entertaining, varied, and interactive media is one of the variables that contribute to more effective and efficient learning [2]. Microlearning media is one of the media models that is believed effective to assist students in learning the contents of the material in a relatively short period of time [4]. Therefore, it is significant to analyze the characteristics of the students, the demand of the curriculum, the major (area of expertise), and the accessible subjects to design and develop an effective and efficient microlearning media. The goal of this study is to examine the needs for microlearning instructional media particularly used at Business and Management Vocational High School, Office Management Vocational Program, and Office Automation and Governance Vocational program (henceforth OTKP).

1.1. Literature Review

1.1.1. Learning Media

In general, learning media are utilized to communicate a lesson from the teacher to the students, stimulating the mind, feeling, attention, action, and interest in the message [2]. They are beneficial in facilitating teacher-student engagement. Standardizing

lesson delivery, making teaching and learning more interesting, making the learning process more interactive, improving the efficiency of teaching and learning time, improving learning quality, improving access to learning sources, improving positive attitude toward learning material and process, and improving positive roles of teachers are all benefits of learning media [6].

1.1.2. Microlearning

Microlearning is defined as a multiplatform instructional unit that involves brief participation in an activity that is intended to yield a certain result [5, 7]. Microlearning, as an electronic-based learning medium, offers learning content in short targeted chunks. The content can be in the form of audio, audio-video, or a combination of the two with a duration of 3-5 minutes. It could even take the form of an infographic or a still image or a visual. A concept topic recounted in a long book, for example, can be given briefly in an infographic or a few-minute video explainer. This is done to relieve students' cognitive load, making it simpler for them to recall, comprehend, and use the knowledge.

The major goal of microlearning is to improve the efficiency of the e-learning process [5, 8]. Some of its characteristics include the presentation of content in a concise and specific manner, the use of various media formats (especially those compatible with mobile devices), the use of online media sources, and economical cost and time. The media formats that are commonly used to create microlearning content include infographics, interactive infographics, PDFs, interactive PDFs, e-books, flipbooks, animated videos, whiteboard animation, kinetic text-based animation, explainer videos, interactive video, interactive parallax-based scrolling webcast/podcasts, expert videos, recorded webinars, mobile apps, and complex branching scenarios [8].

Even though microlearning content is brief, its goal is to produce certain learning goals. As a result, both teachers and students must have the ability to think creatively. Teachers must be resourceful in summarizing lengthy content into a concise but engaging presentation. Similarly, students must be resourceful in their search for more information to properly grasp the brief material [3, 9].

1.1.3. Creative Thinking Ability

Today's digital environment necessitates the use of creative thinking in the learning process. The easy availability of data of any kind has emerged from the quick flow of information. Without the ability to think creatively, the issue could turn into a tragedy or a threat. As a result, a high level of imagination or creative thinking is required to select and filter information that is relevant to one's needs.

There are various strategies to build creative thinking skills, such as instilling the bravery to develop new thoughts from existing knowledge or developing an analog for something by observing similarities. The process of creative thinking starts with an individual's internal drive, which is frequently initiated by a high level of curiosity or unhappiness with the situation [10].

To accomplish learning goals, microlearning also requires the ability to think creatively. Despite the scope of the lesson information that needs to be addressed, microlearning content is generated in extremely brief episodes with a duration of 3-5 minutes. This necessitates students' developing creativity to obtain supplemental information from various sources [10, 11].

2. METHODS

A retrospective research method was adopted in this study to identify the teachers' needs for microlearning-based teaching and learning materials. Data were collected using a Google-form sheet and analyzed using descriptive statistics. The study involved 62 OTKP teachers from 15 districts in Indonesia's West Java Province, who were chosen particularly for their characteristics.

3. RESULTS AND DISCUSSION

Scalar variables and physical constants should be As a result of the COVID-19 epidemic, the school learning process will inevitably change from offline to online learning. Teachers must use ICT to assist students in continuing to learn to meet the curriculum's objectives.

The teachers in this study identified five supportive variables for curriculum implementation: primary literature, teachers' sourcebooks, suitability of learning media, quality of learning content, and availability of guide books. They said that improvement efforts must be done to meet the needs of the learning process [1, 2]. The sourcebook [12] is one of the critical components that must be provided right away, along with other learning infrastructures and facilities (Figure 1).

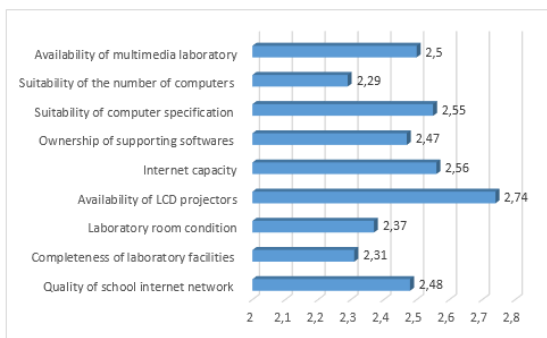


Figure 1. Learning Infrastructure and Facilities.

The state of workshop room amenities, for example, was deemed insufficient to allow micro-learning activities. Besides, further investigation revealed that the compatibility level of learning media that fulfills the needs of practical tasks is 2.66 on a scale of 1-5. This suggests that the accessible learning media are not always well-suited to the microlearning media requirements of each subject in the OTKP programs. Likewise, in terms of instructors' perceptions of their readiness to prepare and create learning media, the majority of them admitted that they, similar to their students, still had some issues (see Figures 2 and 3).

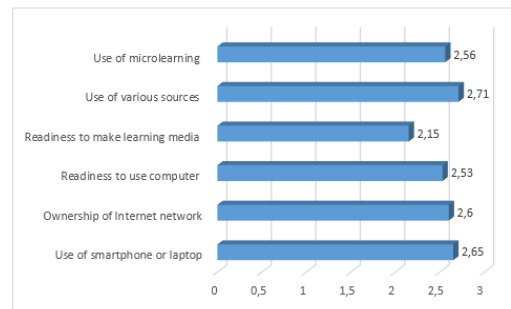


Figure 2. Teacher Readiness for Microlearning.

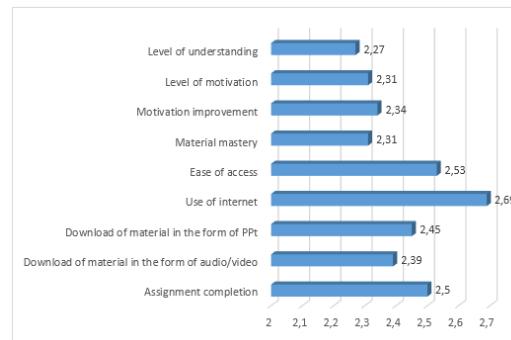


Figure 3. Student Readiness for Microlearning.

Even though learning materials in the microlearning approach are generated in the form of microcontent, they must nonetheless deliver accurate information. When learning material is presented using a microlearning approach, it will be more accessible to both teachers and students [10, 11]. This research shows that teachers can employ microlearning-based learning materials to encourage students to learn autonomously. Teachers should understand how to develop compelling learning materials that catch students' attention and motivate them to study deeper.

To meet the millennial generation's changing learning needs, online learning is mandatory. Online learning has become the preferred method of teaching and learning in the current age, to master 21st-century skills, which include creative and critical thinking [13]. Skills in using

ICT will become more important as it may encourage the development of new ideas. This viewpoint reinforces the idea that, in addition to language, arts, mathematics, science, history, and other hard skills, teachers should focus on teaching creativity, critical thinking, and problem-solving to their students to develop their higher-order thinking abilities [11, 14].

4. CONCLUSIONS

To ensure that the learning process continues, the use of ICT is unavoidable. Teachers can use the microlearning approach to encourage students' creativity and independence in the learning process. Teachers should be able to create engaging microcontent that encourages the students to think creatively.

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