

Developing Microlearning Writing Materials for Grade X Students of Senior High School

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ABSTRACT

The lack of interactive writing materials presents a challenge for Grade X students at SMAN Yogyakarta. This study aimed to identify students' writing needs, develop suitable microlearning-based materials, and determine appropriate content and design. Using the ADDIE model in an R&D framework, 36 students from Class X-H participated. Data were gathered through surveys, interviews, and questionnaires. Results show that students prefer everyday topics and engaging media, especially YouTube videos, to enhance vocabulary, grammar, and text structure. They also value materials that are clear, simple, and relevant. Expert judgment and classroom trials confirmed that the developed microlearning materials are appropriate for writing skills.

INTRODUCTION

Microlearning allows students to get the latest information anytime, anywhere, and in any format, they need, it can be considered a form of modular and fragmented learning approach (Jin, Zang & Heng, 2017). Implementing microlearning in this digital era is the right choice because students can easily access information to satisfy their curiosity. According to Kong and Kabilan's recent literature (2021), three important factors in the definition of Microlearning that must be improved today are technology, content, and students. Micro-learning methods are commonly linked to mobile and digital technologies, focusing on creating micro-content and designing micro-activity flows. The modern concept of microlearning at the level of small learner groups is fundamentally rooted in individual learners, particularly their attention span and motivation. Micro-learning was developed to enhance technology integration into education by making learning more convenient and tailoring e-learning to accommodate the reality that users often find it challenging to dedicate extended periods to learning outside formal study schedules or institutional programs in schools, colleges, and universities (Bruck, Motiwalla & Foerster, 2012). Microlearning makes it easier for students to become independent learners in finding learning content provided by the teacher.

The various and interesting materials using technology designed by teachers following the material can motivate students in the learning process. By providing material involving microlearning, it can be said that it is following the needs of today's students. Microlearning in English education is particularly advantageous as it helps students enhance their overall English skills, including listening, speaking, reading, and writing (Herdian, Dewanti & Selistyaningrum, 2023). One of the skills that students must have been the ability to write English. Writing is an essential skill for students, particularly in recent years, not only for academic success but also for their professional careers. (Fauziah et al., 2023). Writing skills in English language materials are included in Kurikulum Merdeka. Kurikulum Merdeka allows teachers to freely choose various teaching materials to adapt students' needs, especially in students' writing skills.

The current implementation of Kurikulum Merdeka, there are still a few academics who research English writing learning materials equipped with microlearning aspects. However, teachers can develop microlearning writing materials with media or technology that can attract students to learn writing. At SMAN in Yogyakarta, the implementation of Kurikulum Merdeka provides flexibility for teachers to tailor learning to students' needs. However, writing instruction still relies heavily on textbooks, PowerPoint presentations, and videos not tailored to learners. Teachers face difficulties in developing writing materials that align with students' attention spans and learning preferences. Most available materials are long and less interactive, which decreases student motivation and engagement. This study aims to address these issues by developing microlearning-based English writing materials—focused on descriptive and procedure texts—for Grade X students. The materials are presented in short videos (under five minutes), divided into focused segments. This approach is designed to meet learners' needs, improve writing skills, and enhance classroom

engagement. The study contributes to the field by offering practical microlearning resources and design principles for teachers and material developers. It also serves as a reference for future research in integrating microlearning into English language teaching in secondary education.

LITERATURE REVIEW

Writing Skill

Currently writing skill is an essential skill for students not just for academic objectives but also for their professional lives (Fauizah, et al., 2023). Teaching English writing in the *Kurikulum Merdeka* must include several competencies that students must acquire. Currently, students are suggested to learn several genres of writing, there are procedure, descriptive, recount, narrative, report, news item, analytical exposition, hortatory exposition, spoof, explanation, discussion, review, and short functional text. The aspect of micro-skill and macro-skill make mastery of English learning material by teachers very necessary so that the goal of providing the material can be achieved optimally. Brown (2015) states the taxonomy of micro and macro skills in writing is the final goal that will assist teachers in determining the final criteria for assessment. Based on the aspects, it can be conclude that micro-skills are more suitable for the type of imitative and focused writing performance that describes writing mechanisms and word level elements such as coherent devices, past tense verbs, and so on. In contrast to macro skills which cover a wider scope of writing, including the model and communicative goal of the content of the writing, main ideas and supporting concepts, the literal and suggested meaning of the writing, and so on, namely about the written materials. Both skills should be completely learned by students for them to write competent work in English on their own (Mantra & Widiastuti, 2019). Thus, To construct a properly written content, a writer should focus on both micro and macro writing skills.

Microlearning Materials in Writing

One of the ways to develop information and communication technology-based teaching materials is developing microlearning-teaching materials. Microlearning is a technique of teaching-learning that uses small, bite-sized, and well-planned lessons delivered through digital media (Dana, Nitiasih, & Santosa, 2023). Supported by other study, microlearning is a small-scale learning strategy in which content (object learning) is divided into little chunks using multiple media forms, resulting in "short content" that helps students quickly understand the subject (Herdian, Dewanti, & Sulistyaningrum, 2023). Thus, microlearning can be said to be learning that is conducted in a short time, the subject matter is examined briefly, and learners are independent in the learning process. Microlearning will make learning content simple to absorb and recall over a lengthy period of time, as well as boost the effectiveness of the learning process (Mohammed, Wakil & Nawroly, 2018). The development of materials in microlearning classes greatly influences the efficiency and effectiveness of student learning in class. The utilize of microlearning for teachers in creating learning teaching materials is not a big obstacle because it is more helpful in

determining learning content and media. Microlearning aims to make the process of acquiring knowledge and experience for students quick, successful, clear, simple, and easy (Simaremare et al. 2022). The utilize of microlearning in developing English teaching materials with a short and short duration allows teachers to be more innovative with learning methods and media that are not monotonous.

The digital technology facilities presented in microlearning have a big influence on student learning patterns in the classroom. Microlearning has significance for mobile learning many web 2.0 applications provide content in small fragments (Bruck, Motiwalla & Foster, 2012). Through this, using multiple devices, such as computers, tablets, desktops, laptops, and mobile phones to develop material is not impossible. There is a lot of technology that will be utilized by teachers in learning English in accordance with the current Indonesian curriculum which prioritizes learning by utilizing the latest technology. Microlearning is ideal for use on various digital platforms to support easy access to material by students (Wijaya, Yani & Nandi, 2023). The involvement of digital technology creates material that can be divided into small, focused segments and in the form of media or short video objects, articles, infographics, or short quizzes. According to Allela (2021), many microlearning objects that can be used in developing microlearning materials, namely short texts, infographics, PDFs, presentations, short videos, eBooks, short podcasts, short HTML pages, QR codes, blogs, webinars, mobile apps, Gamification, augmented/virtual reality, and quizzes. As a teacher, utilizing digital technology in developing material is very important to attract student focus in learning. Microlearning is closely related to digital technologies, such as students' use of mobile learning in classroom learning. Microlearning given in a web-based environment as well as a mobile environment. It allows searching for similar data, photographs, and videos in the mobile environment in real time, so that the time required to search certain themes and information is decreased (Park & Kim, 2018). The use of technology such as the web can be utilized by teachers in developing students' skills in mastering language such as writing skills.

Microlearning can be used by teachers in all aspects of English language learning skills according to the material content that students need. Teachers can use microlearning writing skills to make the material more interesting by using many technology-based microlearning media. According to Muslim and Sumarni (2023), another characteristic of the English curriculum in Kurikulum Merdeka is the use of a genre-based approach. Accordance to the Standards, Curriculum, and Educational Assessment Agency of the Ministry of Education, Culture, Research, and Technology (2022), the approach used in general English language learning is a text-based approach (genre-based approach), which focuses on text in various modes, such as oral, written, visual, audio, or multimodal. Through this approach, students get the opportunity to interact a lot with types of text such as descriptive, narrative, recount, procedural, and so on. This text is also what students must master during English learning. To present learning material in text form, teachers can utilize the latest technology as recommended by the government for example, the use of Microlearning as a

strategy for designing learning content. Microlearning resources should be able to attract attention to extremely precise and unambiguous characteristics, and there should be complementing materials that allow learners to directly participate in their creation, assembly, and modification (Redondo, Rodriguez, Escobar & Vilas, 2020). Even though students can quickly search for material on the internet with their mobile phones, they need validation from the teacher. Therefore, the teacher should at least provide appropriate material validation and provide material even though microlearning takes 15 minutes. The knowledge and information students get through microlearning will have a subtle impact on their attitude toward life and essential beliefs (Fang, 2018). However, as a teacher who teaches learning material, at least he can provide material that is connected to students' daily lives. Providing learning materials that relate to students' real lives helps make the materials more efficient.

Developing material by utilizing technology that is divided into microlearning media that suits student needs and student skills. Herdian, Dewanti, and Sulistyningrum (2023) found that the microlearning components used by teachers in each course, such as PowerPoint slides, explanatory videos, and infographics, are not entirely suitable. Therefore, it is hoped that teachers could develop effective and efficient teaching materials for students by creating learning that is easy to understand and makes it easier for students to learn. Thus, the development of microlearning writing materials in high school is a gap in this research, where there is still a need to develop teaching materials that involve the latest technology. Requires teachers who are more digitally literate to provide effective and efficient material by the current curriculum in Indonesia.

METHODOLOGY

This study uses the Research and Development (RnD) model which intent to create a product. This research focuses on developing more effective writing skills materials in English classes. The product is processed in the form of microlearning writing materials which is categorized as an additional method of learning. To develop specific products, research involves conducting a needs analysis, and to ensure the product's effectiveness and functionality for broader use, further testing of its effectiveness is required (Sugiyono, 2008: 297). Many steps that can be taken in carrying out the R and D cycle, but there are five important steps that must be taken to develop and validate a product. The five steps are ADDIE followed by Branch (2009) Analysis, Design, Development, Implementation and Evaluation.

This study was conducted at SMAN in Yogyakarta. The subjects of this study were grade X students. The class consisted of 36 students for the needs of this research and development. This study the researcher acted as those who developed the material and as those who applied the material in the classroom. The data collected by distributing questionnaires, taking field notes, and conducting semi-structured interviews. Questionnaires were given to students and experts in English material development. Questionnaires for students needs analysis and response after implementation were distributed via Google Form with close-ended questions. The second questionnaire was given to experts in

English material development. To support the questionnaire results, a semi-structured interview was conducted with the English teacher.

The data were collected through a questionnaire, which was analyzed quantitatively. The questionnaire results were presented as percentages and frequencies of closed questions, and the Likert Scale was used to capture students' opinions (Widoyoko, 2012). The first questionnaire was used in the needs analysis, and the second was used in the implementation phase. Data scoring was formulated based on the following options: strongly agree, agree, disagree, and strongly disagree.

Table 1. The Categories of Expert Judgment

No	Categories	Score
1.	Strongly Agree	4
2.	Agree	3
3.	Disagree	2
4.	Strongly Disagree	1

The results of the questionnaire data obtained from experts were measured using the Mean. The scores were analyzed using the formula provided by Suharto (2008) to find the range or interval of the data as follows:

$$Mn = \frac{\sum fx}{N}$$

Note:

Mn: Mean

$\sum fx$: Total Score

N: Total number of data

According to Suharto's (2006) theory of quantitative data conversion was utilized to classify the mean category as follows:

$$R = \frac{(Xt - Xr)}{4}$$

Note:

R: Range

Xt: Highest score

Xr: Lowest score

The range found by calculating the calculation above was 0.75. The conversion was presented below as follows:

Table 2. Score Interval Conversion into Criterion Value

Scale	Score	Criteria
1	$1 \leq x \leq 1.75$	Poor
2	$1.76 \leq x \leq 2.51$	Fair

3	$2.52 \leq x \leq 3.27$	Good
4	$3.28 \leq x \leq 4.00$	Very Good

RESULTS AND DISCUSSION

This part consists of research findings, discussion, and results from questions that have been proposed. The findings include the results of needs analysis, the results of learning materials development, evaluation, and feedback from the students and the English teacher.

The Result of Needs Analysis

The needs analysis was conducted with Grade X students at SMAN 5 Yogyakarta, which has implemented the Kurikulum Merdeka. The number of student respondents was 36 with an average age of 15-16 years. The class chosen by the teacher was based on student's interest in learning English. The Grade X students were chosen because the implementation of Merdeka curriculum had just been implemented for 2 years at this school. The high school has a good reputation in Yogyakarta because many of its graduates are accepted at state universities. This study conducted observations by interviewing teachers and distributing questionnaires to students in August 2024. The questionnaire consisting of 21 multiple-choice questions was distributed to identify the needs of the target and learning needs in writing. Then, initial interviews were also conducted to collect comprehensive information regarding learning needs in writing.

Materials Description

This study chose video as a form of materials based on the needs analysis result and teacher interviews, students preferred watching videos that explained the material and were easily accessible anytime and anywhere, whether during class or outside of it. The developed learning videos could be easily accessed by students through the YouTube platform, where they could watch them online if connected to the internet or download them for offline access. This microlearning as writing teaching materials was developed in a video format divided into four videos per materials, following the concept of divided and focused microlearning. Each video presented the contents of the teaching materials, namely video identity, social function, generic structure, and language features. In each video, there were practice questions or quizzes based on the sub-topics that had been watched. The materials consisted of two types of subject matter divided into eight videos. Unit one was entitled Great Athletes, people were described in descriptive text. Unit two was entitled Healthy Foods, presented the characteristics of procedural text, especially recipes.

Microlearning writing materials in the form of learning videos consist of 2 subject materials based on needs analysis and the syllabus. Each subject material includes 4 videos: video identity, social function, generic structure, and language features. In addition, to make it interactive, each video contains practice and quizzes based on the teaching materials that are watched. The video explanations are provided verbally in two languages, English and Indonesian, according to

the needs analysis. Background music is added to the videos and adjusted to ensure it does not interfere with the sound of the explanation.

The Result of Expert Judgment

The evaluation results were employed to revise teaching materials that did not follow the research concept and needs analysis. During the evaluation, expert judgment provided suggestions related to content, language, presentation, and graphics. The table below shows the expert judgment evaluation.

Table 3. The Appropriateness of the Content

No	Indicator	Score	Category
1.	Input is up-to-date.	3	Good
2.	The text uses natural English.	3	Good
3.	The text is based on the learning objectives of grade X students.	4	Very Good
4.	The topic is suitable with the learners.	4	Very Good
5.	The materials present clear and coherent units.	4	Very Good
6.	The materials help the students study grammar.	3	Good
7.	The materials help the students study vocabulary.	3	Good
8.	The materials help the students study text structure.	4	Very Good
Total mean		3.5	Very Good

The table above displayed data from expert judgment regarding the appropriateness of the content. There are eight items for analyzing the substance of the contents. Four products were classified as "Very Good," while four were classified as "Good". The total mean value of 3.5 was classified as "Very Good" after following expert recommendations on paying attention to the grammatical accuracy of the text and recording.

Table 4. The Appropriateness of the Language

No	Statement	Score	Category
9.	The language is easy to understand for grade X students.	4	Very Good
10.	The language is vocabulary correct.	3	Good
11.	The language is grammatically correct.	3	Good
12.	The spelling is accurate.	4	Very Good
13.	The language has proper punctuation.	3	Good
Total mean		3.4	Very Good

According to the table above, two products have been categorized as "Very Good" with a score of 4.00, while three were classified as "Good" with a

score of 3.00. Based on the facts provided by expert assessment, it was stated that the learning materials were classified as "Very Good" with a total mean score of 3.4. The language was rated "Very Good," although some changes needed to be made.

Table 5. The Appropriateness of the Presentation

No	Statement	Score	Category
14.	The learning materials are arranged sequentially from the easiest to the most difficult.	4	Very Good
15.	The materials prepared help students feel comfortable in carrying out learning activities.	3	Good
16.	The materials are divided into several parts (videos) that are focused according to the microlearning concept.	4	Very Good
17.	The materials are divided into several videos according to the learning objectives that contain social functions, generic structures, and language features.	4	Very Good
18.	The arrangement of questions and quizzes at the end of each video is in accordance with the material presented.	4	Very Good
19.	The material in the form of short and focused videos makes it easier for students to learn flexibly (online and offline).	4	Very Good
Total mean		3.83	Very Good

Related to the table above, it could be seen that the materials item helped students feel comfortable in the categorization of "Good" with a score of 3.00. However, other items were classified as "Very Good" with a score of 4.00. The overall mean related to the appropriateness of the presentation were classified as "Very Good" with a score of 3.83.

Table 6. The Appropriateness of the Graphic

No	Statement	Score	Category
20.	The background of each video is appropriate to the content of the reading.	4	Very Good
21.	The text colors of each video are appropriate and easy to read.	4	Very Good

22.	The font in this material is easy to read and proportional.	4	Very Good
23.	The spacing between sentences is appropriate.	3	Good
24.	The images/illustrations displayed represent the contents of the reading.	3	Good
25.	The videos displayed represent the contents of the reading.	3	Good
26.	The explanatory voice in the video is clear.	3	Good
27.	The background music in the video does not interfere with the explanation.	3	Good
28.	The selection of videos is following the material and is interesting.	3	Good
29.	The quality of each video is great for students to learn anytime and anywhere.	4	Very Good
Total mean		3.4	Very Good

The last step was evaluating the appropriateness of the graphic by an expert. There were ten items, of which four items were classified as "Very Good" with a score of 4.0. The other items, which included 6 items, were classified as "Good" with a score of 3.0. The total mean score of the graphic were classified as "Very Good" with a mean value of 3.4. However, there was still a suggestion to improve all parts that were categorized as "Good" or scored 3.0.

Feedback From Expert Judgment

The first suggestion related to the content of the material. They advised re-checking the grammar rules in the recordings and texts. Then revised based on the feedback of the expert judgment. From the language aspect, the microlearning writing materials received several suggestions for improvement concerning recording, text, and more explanations in English. In terms of the recording aspect, the suggestions included improving the pronunciation quality (procedure, focus, generic, method, current, and lesson), checking the pronunciation throughout the entire recording, and assessing the intonation and accuracy. Subsequently, it is re-recording according to the input of the expert judgment. Regarding the text, the suggestions for the language aspect included checking parallelism, ensuring proper spacing, checking the use of colons, reviewing all singular and plural nouns used in phrases and sentences, ensuring that fragments did not require a full stop, and reviewing all singular and plural nouns. Additionally, suggestions were made to provide more explanations in English. The expert judgment also provided feedback on the graphic suitability aspect, recommending slight improvements, and emphasizing attention to spacing, images, videos, sounds, and background music. Then revised it by re-editing some elements according to the input from the expert judgment.

Table 7. The Revision of Unit One

Video/Slide	Points to Revise	Revision
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Video 1 Slide 2	Correct the sentence "In this lesson we will discuss about."	"In this lesson we will discuss ..."
Video 1 Slide 5	Correct the word "Peserta didik"	"Anda"
Video 2 Slide 5	Correct the sentence "A descriptive text is a text that describe about people, animals, things, and places."	"A descriptive text is a text that describes people, animals, things, and places."
Video 1 Slide 7	Correct the word "contain" and sentence "and regular activities or what they usually do"	Contains and regular activities
Video 3 Slide 4&7	Correct the sentence "She wears a hijab, has brown skin, has a wide cheerful smile, and has an athletic body."	"She is characterized by wearing a hijab, having brown skin, having a wide, cheerful smile, and an athletic body."

Table 8. The Revision of Unit Two

Slide/Video	Point to Revise	Revision
Video 2 Slide 6	Correct the word "type"	"The types"
Video 3 Slide 3	Correct the word "describes"	"describe"
Video 3 Slide 4-7	Correct the word "strawberries" and "method"	"strawberry" and "methods"
	Correct the sentence "Using simple present tense and imperative sentences." And remove the full stop.	"Using simple present tense"

The Tryout of Learning Materials

After going through the revision stage of the microlearning writing materials, the revision's results were used in the implementation phase. This teaching material was used by teachers and students as the main teaching material for descriptive text and procedural text materials. This study carried out the implementation process for two months in the first semester of the 2024/2025 academic year for Grade X students at SMAN in Yogyakarta. There were 36

students and 1 subject teacher involved in the implementation of this research teaching material. One subject material was delivered four times for 2-hour lessons. The developed material consisted of two topics, which had eight meetings. However, due to school activities such as strengthening P5 for grade X students, only seven meetings were held.

Students were given teaching materials in the form of videos on the YouTube platform that had been developed, and students were asked to watch the videos one by one. After watching the video related to social functions, students were directed to answer the practice questions at the end of the video. Students could next continue watching the generic structure of descriptive writing and complete the practice questions at the end of each video. The teacher continued by giving practice questions for students that had been prepared according to the teaching module. teacher directed students to watch the next video, which was about language features. After watching, students could immediately work on the quiz at the end of the video in the form of a QR code that was directly connected to the Quizzes platform. The teacher then continued by giving practice questions for students that had been prepared according to the teaching module. The teacher provided a review of the materials that had been taught through the teaching materials. After that, the students are given an evaluation questionnaire for the microlearning writing teaching materials that had been used in the learning process. Additionally, students gave their responses regarding the microlearning writing teaching materials in the form of this video.

The Students' Feedback

The Appropriateness of the Content

The table below showed that the mean value related to the content appropriateness was classified as "Very Good." It could be seen that the mean value was 3.59 because its position was within the interval $3.28 \leq x \leq 4$. Based on the results of content suitability, most of the students believed that microlearning materials could help them in learning to write.

Table 9. The Content Appropriateness

No	Question	N	Score	Category
1.	The content of this materials is up to date.	36	3.58	Very good
2.	The materials topics are in accordance with my needs and expectations.	36	3.61	Very good
3.	The materials present clear and coherent units.	36	3.63	Very good
4.	The materials help me learn grammar.	36	3.5	Very good
5.	The materials help me learn vocabulary.	36	3.52	Very good
6.	The materials help me learn the structure text.	36	3.72	Very good
Mean			3.59	Very good

The Appropriateness of the Language

The table below showed that the mean score of 3.62 was classified as "Very Good" and the range interval was $3.28 \leq x \leq 4$. Based on this data, students agreed that learning to write using microlearning helped them in language learning.

Table 10. The Language Appropriateness

No	Question	N	Score	Category
1.	The language is easy for me to understand.	36	3.66	Very good
2.	The text in these materials fulfills my language needs.	36	3.58	Very good
Mean			3.62	Very good

The Appropriateness of the Presentation

The table below showed that the mean score was 3.55, with the range between the interval $3.28 \leq x \leq 4$. Based on the data above, it was stated that students believed the materials provided was very interesting and aligned with their wishes in the learning process. On the other hand, students believed that the learning of the materials was in accordance with the skills they wanted to master. The data below was classified as "Very Good" in the suitability of the presentation.

Table 11. The Presentation Appropriateness

No	Question	N	Score	Category
1.	The materials arrange sequentially from easiest to most difficult.	36	3.44	Very good
2.	The materials help me feel comfortable in carrying out learning activities.	36	3.58	Very good
3.	The materials in the form short and focus videos makes it easier for students to learn flexibly (online and offline).	36	3.63	Very good
Mean			3.55	Very good

The Appropriateness of the Graphic

The table below explained the students' agreement regarding the graphic design of the learning materials. Based on the results obtained, all items were classified as "Very Good" with a mean value of $3.28 \leq x \leq 4$. Regarding the appearance, images, colors, and fonts, students agreed that it fulfilled their desires to help them learn. In addition, students liked to learn by dividing the material into several videos, which made it easier to repeat the learning.

Table 12. The Graphic Appropriateness

No	Question	N	Score	Category
1.	The background of each video is accordance with the reading.	36	3.66	Very good

2.	The text color of each video is appropriate and easy to read.	36	3.66	Very good
3.	The type of writing (font) in these materials is easy to read and proportional.	36	3.61	Very good
4.	The spacing between sentences is correct.	36	3.63	Very good
5.	The images/illustrations displayed represent the content of the reading.	36	3.69	Very good
6.	The video displayed represents the content of the reading.	36	3.77	Very good
7.	The explanatory voice in the video is clear.	36	3.52	Very good
8.	The background music in the video does not interfere with the explanation.	36	3.55	Very good
9.	The video quality on each video is good so I can study anytime and anywhere.	36	3.69	Very good
Mean			3.64	Very good

DISCUSSION

Student's Needs

According to the input findings from the learning needs analysis, students request that the materials provided be packaged with several games in the form of videos uploaded on YouTube and then watch a video explaining the text materials. The YouTube platform serves as an effective and favored multimedia learning tool, making it highly recommended for both language learners and educators aiming to enhance writing fluency as a key learning objective (Alobaid, 2020). In the line with Utami, Oktaviani, and Emaliana (2021) state video provides advantages to students, such as bringing up interest in learning, acquiring new vocabulary, and enhancing pronunciation of English words. All these perspectives collectively suggest that integrating videos, particularly on platforms like YouTube, can address multiple aspects of language learning. However, its appropriateness may vary depending on how well the video aligns with a specific learning objective, such as writing fluency versus broader linguistic competence.

The Design Microlearning Writing Materials

The sequence of four videos in the microlearning writing materials includes Video Identity, Social Function, Text Structure, and Language Features. Once the videos were completed, they were uploaded to YouTube to ensure easy access for students. According to Dewanti, Sukatanti, and Iskandar (2023), microlearning content should be open-source, allowing teachers and learners to access, share, and download it across various mobile devices. On the other hand, the use of open-source platforms for microlearning, such as YouTube, can present challenges in assessing students' knowledge gains due to the lack of evaluation features in the videos (Mairet et al., 2024). However, in the microlearning writing materials developed in this study, an assessment or quiz in the form of QR codes

as provided at the end of several videos as an exercise for students to reinforce their understanding of the material. Thus, the inclusion of this feature ensures that students can learn anytime and anywhere using their smartphones.

However, the presentation of microlearning videos in learning writing is developed based on points that must be considered in the development of microlearning. Developing microlearning writing materials in video format can be achieved by considering various factors present in the field. As stated by Allela (2021) key points to consider creating a microlearning video are the learning objectives and topics used must be focused, prepare a script or story board before making a video, and harmonies text, audio and tools used in developing videos. Thus, the video developed can be in accordance with the needs of students in learning to write.

The Appropriateness of Content Materials

The results of product validation indicated that the materials were categorized as 'Very Good' by expert judgment, particularly in terms of content appropriate. The expert rated the materials presented in microlearning videos very highly, emphasizing their appropriateness. These videos, which can be accessed anytime and anywhere, allow students to review the materials as needed. Research by Meliana and Seli (2023) supports this by highlighting that microlearning with short and interactive content is an effective approach to delivering language learning materials through video. Similarly, Senadheera (2023) found that microlearning, which delivers content in small and focused units, has proven to enhance students' academic performance by reducing cognitive load, providing a flexible learning environment, and encouraging self-directed learning. One of the key benefits of microlearning is its ability to encourage independent learning.

Overall, the appropriateness of microlearning materials from all four indicators was rated as "Very Good" by students. Interview results from several students indicated that the materials provided was very helpful in learning to write. Students also appreciated being able to access the videos anytime and anywhere, allowing them to review the materials as needed. The feedback aligns with existing research on the appropriateness of microlearning for writing skills. Research has shown that microlearning, which delivers content in concise, focused units, can significantly improve students' writing skills (Fauziah et al., 2023). However, its limitations in providing in-depth understanding, especially for complex skills such as writing, need to be considered.

Overall, the teachers' feedback on the materials was very positive. They found the teaching materials highly appropriate and engaging, noting that while videos had been used previously, this time they were presented with a fresh concept. The teachers' positive feedback on the microlearning materials aligns with findings suggesting that this approach can improve students' writing outcomes. According to Douglas (2023), microlearning, which presents learning in small, focused units, has the potential to improve student retention and grades.

Thus, well-designed microlearning materials are appropriate with students' writing skills and their engagement in the learning process.

Based on the results of expert Judgment, student feedback, and feedback from English teachers, the learning materials are deemed appropriate and ready for classroom application, particularly for Grade X students at SMAN in Yogyakarta in the first semester. The materials developed in this research meet the needs of students, are appropriate for their writing skills, and align with the Kurikulum Merdeka.

CONCLUSIONS AND RECOMMENDATIONS

Based on the needs analysis, students require improvement in writing descriptive and procedure texts, along with enhanced vocabulary, pronunciation, grammar, and cultural knowledge. The microlearning writing materials developed in this study were found to align well with students' needs and learning preferences, particularly for Grade X students at SMAN in Yogyakarta. The materials support the development of writing skills by providing content that is relevant to students' daily lives, thereby facilitating contextual learning of vocabulary, grammar, and text structure.

Students expressed a preference for engaging digital media, especially videos accessible via YouTube, and valued collaborative learning through group activities and discussions. The expert judgment rated the materials as "Very Good," a conclusion supported by positive responses from both teachers and students during the implementation phase. Feedback highlighted the clarity, relevance, and accessibility of the content, with students noting that the videos were concise, easy to understand, and visually engaging. Overall, the video-based microlearning materials proved to be practical, interactive, and effective for use in English language learning, particularly for learners accustomed to digital and mobile environments.

ADVANCED RESEARCH

This study has several limitations, particularly in terms of the number of field trial sessions, the number of students interviewed, and the scope of the teaching materials developed. The researcher acknowledges that this study is not yet perfect. Therefore, it is hoped that future researchers will conduct further studies by developing materials for other language skills, such as listening, speaking, and reading, so that aspects not covered in this research can be explored more deeply.

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