



## **Development and Feasibility of Lumio-Based Learning Media for Teaching Javanese Descriptive Texts in Junior High School**

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**Abstract:** This study aims to develop learning media for Javanese descriptive texts using Lumio by SMART and to evaluate its feasibility and trial outcomes. The research employed a Research and Development (R&D) method using the 4-D development model, which was limited to the product trial stage. The research subjects consisted of 23 seventh-grade students from a junior high school in Central Java, Indonesia, along with Javanese language teachers, subject matter experts, and media experts. Data were collected through interviews, questionnaires, and tests, and analyzed using qualitative and quantitative descriptive methods. The developed product was a Lumio by SMART-based learning medium for Javanese descriptive texts, designed according to the needs of students and teachers and containing learning materials, exercises, and evaluation activities. The expert validation results indicated that the developed media met the required feasibility criteria. Following revisions based on expert recommendations, the media was implemented in a trial phase, resulting in student learning outcomes of 82.6% in the very good category and 17.4% in the good category. Therefore, the Lumio by SMART-based learning media is feasible as an alternative digital learning medium for teaching Javanese descriptive texts to seventh-grade students at MTs NU Mawaqi'ul Ulum Kudus.

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## **Introduction**

The education curriculum is designed according to the stages of education in Indonesia, taking into account the development of spirituality, Pancasila values, student competencies and interests, environmental diversity, the local potential of the region, and technological development. The Merdeka Curriculum emphasizes learning tailored to students' talents and interests, giving students the freedom to independently access information from various sources without restrictions between formal and informal learning (Hidayah et al., 2023). The introduction of the Merdeka Curriculum also promotes the active involvement of teachers in both the development of the curriculum and the execution of the learning process (An-nisa & Sutikno, 2024). The form of curriculum implementation is evident in local content learning, which is part of the Merdeka Curriculum's content standards and plays an important role in organizing local wisdom-based education (Salamet et al., 2022).

Local content learning in schools can cover various aspects of culture, history, and traditions that are unique to the region or area where the school is located. It has been regulated in several regional regulations including, Javanese language set as one of the compulsory local content lessons for SD / SDL / MI, SMP / SMPLB / MTs, SMA / SMALB /



MA, State and Private Vocational Schools in Central Java Province (Alfiah et al., 2021). Javanese language as a local content lesson contains cultural values and norms passed down from generation to generation, enriching the repertoire of Javanese culture and strengthening national identity (Nurcahyanti & Haryoko, 2022).

According to Mulyana (in Nazhiroh et al., 2021), current local content learning of the Javanese language only focuses on its preservation without paying attention to its use in everyday life, so that this factor is one of the reasons why the Javanese language feels foreign to students. Other factors that make it difficult for students to understand Javanese language lessons are a lack of interest in the material being studied, monotonous or less varied learning methods and media, and too short lesson hours (Utami & Wardani, 2020). In the implementation of Javanese language learning, four language skills must be integrated, including listening, writing, reading, and speaking. One of the language skills that is difficult to master is writing, because it requires continuous practice and demands a high level of accuracy and intelligence (Utari & Alfin N H, 2023). In addition, writing skills involve expressing ideas and feelings systematically and responsibly, paying attention to the accuracy of language use and the appropriateness of context (Intani et al., 2023). In Javanese language learning, writing skills help students convey views, thoughts, ideas, or directions through written messages, which is reflected in Javanese descriptive texts.

Based on observation, similar problems are also experienced by VII-grade students of VII MTS NU Mawaqi'ul Ulum Kudus who experience difficulties in learning Javanese descriptive text, including limited Javanese vocabulary, difficulty understanding and applying correct sentence structure, a lack of understanding of students in the use of appropriate Javanese language varieties, and improper Javanese spelling. In addition, the enthusiasm of VII-grade students in this learning process remains relatively low due to the lack of teacher understanding in selecting appropriate learning methods and media, which creates obstacles and ultimately affects the quality of learning and student learning outcomes (Sari & Rasmita, 2025).

The problems in learning Javanese descriptive text at MTs NU Mawaqi'ul Ulum Kudus are also found in various schools in general. In learning practices, teachers still rely on conventional media, such as student worksheets (LKS), and on less interactive learning methods (Ruliyanti et al., 2022). In addition, classroom learning occurs only to the extent that the teacher explains the material, shows examples of descriptive texts, and assigns writing descriptive texts, so that learning does not fully encourage active student involvement (Lutfiah et al., 2021). This is not in accordance with the principles of learning in schools, which should be systematic, fun, and active so that students can develop their knowledge, interests, and talents optimally (Mitha & Basri, 2024). As a result, it's important to introduce fresh elements in the Javanese language-learning process to guarantee effective and optimal learning (Rosita & Sulanjari, 2023).

Research on the development of descriptive text learning media has previously existed, including application-based media, websites, and animated media, such as android-based learning media on Javanese traditional food descriptive text material developed by Sari et al., (2022), namely media in the form of an application called GACENUTATIF to improve reading and writing skills of grade X MAN 1 Semarang students in learning to understand the content of the text and be able to respond and retell Javanese traditional food descriptive text in writing. Anam's research, (2017) developed Movie Maker learning media to improve descriptive text writing skills of class X students of SMK 3 Randudongkal. Ambarsari & Hartono's research (2017), which developed Pop Culture Up media to improve writing skills



in a Javanese traditional house descriptive text in class VII junior high school. Research by Wati et al. (2023), which is about the application of Google Sites media in learning Javanese descriptive text of traditional ceremonies for students of class IX A SMP Negeri 2 Bantarkawung in the 2022/2023 school year.

Research on Lumio by SMART media has previously been completed in various subjects and levels of education as interactive digital learning media, including (Zahrah's research (2024), which utilizes Lumio by SMART media as a learning media for writing advertising texts in Indonesian language lessons for students of class VIII SMP Negeri 14 Jakarta in the 2023/2024 school year. Wirda et al.'s research (2023), used Lumio by SMART media as an interactive multimedia tool to improve fourth-grade students' learning outcomes. Janah et al's research (2023), which uses Lumio by SMART as a presentation media in number processing application subjects, to improve critical thinking patterns of VII grade students of MTs Al-Khairiyah Pipitan.

Based on previous research, the development of Javanese descriptive text learning media generally still relies on a single application or platform and focuses only on specific skills. It shows the need for more comprehensive learning media development by integrating various elements, such as applications, websites, and visual media. In addition, previous studies have not identified any research that uses Lumio by SMART specifically as a Javanese descriptive text learning media. Therefore, this research develops Javanese descriptive text learning media based on Lumio by SMART for grade VII students, integrating various supporting platforms into a single learning media.

Lumio by SMART is an ICT (Information and Communication Technology)-based media platform that was formerly known as SMART Learning Suite Online, pioneered by SMART Technologies from Canada. Lumio by SMART can be integrated with other media, such as adding hyperlinks from other media or platforms. In addition, Lumio by SMART also has several advantages: (1) the learning website is easily accessible by anyone through their respective devices/PC, (2) students can use the website for free on condition that they have a class code or media link address, (3) teachers can package learning materials and provide class codes or media links for students to join the class, (4) teachers can access the Lumio by SMART website for free or for a fee, each of which has advantages and disadvantages, (5) students can learn in groups or individually with this media, (6) Lumio by SMART can be accessed remotely or remotely, (7) the characteristics of the media display to be presented can be customized based on the material area, subject, and grade level (Arifin et al., 2025; Maulida et al., 2025; Rahmah et al., 2024; Zahrah, 2024). The media development aims to motivate students in learning to write descriptive texts, enhance interaction between students and teachers, and enrich learning experiences. This is expected to improve students' understanding and skills, particularly in Javanese descriptive text material. (Harahap et al., 2024; Khasanah et al., 2025).

## **Research Method**

This research uses the research and development approach to create a learning media product consisting of Javanese descriptive text with Lumio by SMART in class VII MTs NU Mawaqi'ul Ulum Kudus. The development model used is the 4-D development model (Thiagarajan et al., 1974). This study adapts the 4-D model by focusing exclusively on the first three phases (Define, Design, and Develop), which is sufficient for establishing initial product validity and pedagogical feasibility.



The subjects of this research were 23 students of class VII B, Javanese language teachers at MTs NU Mawaqi'ul Ulum, material experts, and media experts. The methods for gathering data in this research involved conducting interviews, questionnaires, and performing tests. The interview technique was used to collect information regarding the research subjects and learning conditions. The questionnaire technique was used to collect data on students' and teachers' needs, as well as on experts' assessments of media validation tests. The test technique assessed the average student learning outcomes after utilizing the developed learning media during the trial stage. Data analysis involved qualitative and quantitative descriptive approaches, with qualitative descriptive to analyze student and teacher needs. Data in the form of assessment scores from media experts and material experts, as well as the results of product trials by students through tests, will be analyzed using a quantitative descriptive approach using the formula according to Sugiyono (2022) as follows:

$$\text{Percentage (\%)} = \frac{f}{n} \times 100\%$$

P = Percentage sought

$f$  = Number of scores obtained

$n$  = Maximum number of scores.

The validation results from the experts will be converted according to the interpretation category criteria (Agustin et al., 2024), as shown on the media feasibility criteria in Table 1.

**Table 1. Media Feasibility Criteria**

| Achievement Percentage | Interpretation  |
|------------------------|-----------------|
| 0-20%                  | Very unfeasible |
| 21-40%                 | Not feasible    |
| 41-60%                 | Fairly feasible |
| 61-80%                 | Feasible        |
| 81-100%                | Very feasible   |

Next, the results of the product trials will be converted based on the learning achievement criteria in Table 2.

**Table 2. Learning Achievement Criteria**

| Achievement Percentage | Interpretation |
|------------------------|----------------|
| 0-20%                  | Very poor      |
| 21-40%                 | Poor           |
| 41-60%                 | Fair           |
| 61-80%                 | Good           |
| 81-100%                | Very good      |

## Results and Discussion

### Define

The Define stage is the stage of defining the potential and needs of teachers and students in learning as the basis for media development. The observation results show that MTs NU Mawaqi'ul Ulum Kudus has computer laboratory facilities that can be used by students in one class. In addition, students are accustomed to using technological devices in learning activities and have basic proficiency in Javanese in everyday life. According to a questionnaire with 23 students and Javanese language instructors on media requirements,



students require engaging, easily comprehensible resources for studying Javanese descriptive texts. The media concept desired by students and teachers for each reading and writing skill includes learning materials, exercises, and evaluations. Reading topics students need include traditional food, Javanese traditional musical instruments, and cultural events.

In reading skills, the materials needed include how to read descriptive text correctly and intensive reading of texts describing traditional *Gethuk* food. In addition, students want some additional descriptive text readings to make it more varied. The desired forms of practice are intensive reading practice on the Google document platform, practice determining true-false statements using the liveworksheet platform, and practice completing the missing parts of the text using the liveworksheet platform. The form of learning evaluation students need is multiple-choice questions and essays, presented interactively on the Quizizz platform.

In writing skills, the materials needed include explanations of the characteristics of descriptive texts, text structures, examples of descriptive texts and their structural analysis, and procedures for writing descriptive texts. The learning exercises needed are in the form of exercises to compose random paragraphs through the Liveworksheet platform and text writing exercises based on images using the Padlet platform. Learning evaluation is designed as a descriptive text writing task based on a YouTube video about traditional Javanese food, with worksheets presented on the Quizizz platform.

In the media display section, students and teachers wanted the learning to use a variety of *Krama Alus* language. The chosen basic colors are white, yellow, and green, which also match the teacher's preferences. So will use the colors in an integrated manner in media development, adjusted to the character of each platform. Students' preferred font is Times New Roman, with a title font size of 16 and body text sizes of 12-14. The teacher suggested that the media be equipped with an online dictionary to support students' understanding of Javanese vocabulary, especially *krama alus* vocabulary, which is considered difficult and can be used independently.

Thus, it can be concluded that both students and teachers need interactive Javanese descriptive text learning media that are easy to understand and able to facilitate comprehensive reading and writing skills. These findings form the basis for the design of a Lumio by SMART-based descriptive text learning media prototype, which will be developed in the next stage.

### **Aesthetic and User Interface (UI) Design Aspects**

The design stage is the stage of designing learning media for Javanese descriptive text using Lumio by SMART, compiled based on the results of analyzing students' and teachers' needs and the Merdeka Curriculum, which encourages project-based, participatory, and interactive learning. The initial prototype of learning media is designed using Lumio by SMART as the main media. To support the visual display, used the Canva platform to design graphic elements, including slide backgrounds and visual illustrations. The Canva design results were then uploaded to the Lumio platform as part of the media's visual content. As for the slide structure, text placement, font selection, and the creation of supporting elements such as information boxes, frames, and navigation icons, they were prepared directly using the editing features available in Lumio by SMART. This media uses Times New Roman font because it has a good readability level and is the same font used in academic contexts. The color scheme is a combination of white, yellow, and green, chosen to give a bright, contrasting impression while remaining comfortable to look at, supporting text readability, and attracting students' attention (Purnama, 2024). The media design is shown in the





following figure, which depicts the initial design of the interactive slides in Lumio by SMART.



**Figure 1. Initial media display**

This learning media comprises 19 interactive slides with learning materials, exercises, and evaluations. At the beginning, the slides present basic information, including learning outcomes, initial competencies, learning objectives, and graduate profiles relevant to the Merdeka Curriculum. The presentation of this initial component aims to provide a clear learning direction while fostering students' awareness of the character values integrated in the learning process.

The content section of the media contains, (1) general explanation of Javanese descriptive text, (2) characteristics of descriptive text, (3) structure of descriptive text, (4) procedures for reading descriptive text (5) reading exercises, (6) reading evaluation, (7) procedures for writing Javanese descriptive text, (8) writing exercises, (9) writing evaluation, and (10) access to the Javanese Bausastra online dictionary. These components are organized hierarchically so that students can follow the learning flow from basic understanding to receptive skills to productive skills (Devi & Muflihah, 2025).

The platform integrated into this learning media is designed to package materials, exercises, and learning evaluations for reading and writing skills, as presented in Table 3.

**Table 3. Types of Student Activities and Integrated Platforms**

| Reading Skills                                                                                  |                          |
|-------------------------------------------------------------------------------------------------|--------------------------|
| 1) Material                                                                                     | Platform                 |
| a) Descriptive text of <i>Gethuk</i> traditional food.                                          | Google document platform |
| b) Descriptive text of <i>Srabi</i> traditional food.                                           | Liveworksheet platform   |
| c) Descriptive text of the <i>Kendhang</i> traditional musical instrument.                      | Liveworksheet platform   |
| d) Descriptive text of <i>Dhandangan Kudus</i> tradition.                                       | Quizizz platform         |
| e) Descriptive text of <i>Jenang Kudus</i> traditional food.                                    | Quizizz platform         |
| 2) Reading Practice                                                                             | Platform                 |
| a) Reading practice comprehension of <i>Gethuk's</i> descriptive text with essay questions.     | Google document platform |
| b) Reading practice comprehension of <i>Srabi's</i> descriptive text with true-false questions. | Liveworksheet platform   |
| c) Practice completing overlapping descriptive text about the <i>Kendhang</i>                   | Liveworksheet platform   |



traditional musical instrument.

| <b>3) Reading Evaluation</b>                                                                                                                       | <b>Platform</b>              |
|----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| a) Evaluation of reading the descriptive text of the <i>Dhandangan Kudus</i> tradition with multiple-choice questions.                             | Quizizz platform             |
| b) Evaluation of reading the descriptive text of <i>Jenang Kudus</i> with essay questions.                                                         | Quizizz platform             |
| <b>Writing Skills</b>                                                                                                                              |                              |
| <b>1) Material</b>                                                                                                                                 | <b>Platform</b>              |
| a) A random paragraph about <i>Buka Luwur Kitha Kudus</i> .                                                                                        | Liveworksheet platform       |
| b) Images of traditional food, <i>Nagasari</i> , <i>Onde-onde</i> , and a traditional musical instrument of <i>Bonang</i> .                        | Padlet platform              |
| c) YouTube video about the traditional food of <i>Klepon</i> .                                                                                     | Quizizz and YouTube platform |
| <b>2) Writing Practice</b>                                                                                                                         | <b>Platform</b>              |
| a) Practice composing random paragraphs about the <i>Buka Luwur Kitha Kudus</i> .                                                                  | Liveworksheet platform       |
| b) Writing practice based on pictures of <i>Nagasari</i> and <i>Onde-onde</i> traditional foods and <i>Bonang</i> traditional musical instruments. | Padlet platform              |
| <b>3) Writing Evaluation</b>                                                                                                                       | <b>Platform</b>              |
| Evaluation of writing based on a YouTube video about traditional food of <i>Klepon</i> .                                                           | Quizizz and YouTube platform |

The choice of platforms according to the table above has specific goals; for instance, the Google document is designed to facilitate full access to the text for students, allowing for more flexible reading, and teachers can modify the content as necessary. (Noviska et al., 2021). Furthermore, the platform integration between Quizizz and YouTube can facilitate the flow of learning activities because students do not need to switch platforms, and teachers can conduct assessments in a more structured manner (Pramugita et al., 2023). This product is also equipped with access to the Bausastra Jawa online dictionary, which functions as a reference source regarding vocabulary that is not yet known in meaning. Thus, students have additional support to enrich their vocabulary while improving language accuracy in reading and writing activities.

### Development

The development phase involves creating prototypes of learning media. This research outcome consists of learning media focused on Javanese descriptive texts using Lumio by SMART. Prior to implementation in educational settings, the product undergoes validation by specialists in material and media to assess its viability, followed by testing with students from class VII B at MTs NU Mawaqi'ul Ulum.

At the material validation test stage, the assessment was conducted by lecturers with competence in Javanese language learning and the review of teaching materials. Material validation for the development of Javanese descriptive text learning media using Lumio by SMART is conducted through an assessment of five aspects, namely suitability and



relevance, learning practice, learning evaluation, language, and application of materials. Overall, the material validation results yielded an average of 96.66%, indicating that this media is suitable for learning Javanese descriptive texts in grade VII. Improvements are still needed based on the validator suggestions, especially regarding spelling consistency, adding more structured writing activities, simplifying some language to make it easier to understand, and reviewing the relevance of the graduate profile elements in the learning flow. In addition, the validators also emphasized the importance of clarifying the focus of product development, whether it is more directed as learning media, learning materials, or integration of the two, so that its development becomes more focused and consistent.

At the media validation test stage, the assessment was conducted by lecturers with expertise in learning media. Media validation in the development of learning media for Javanese descriptive text with Lumio by SMART is conducted through an assessment of six aspects, namely appearance and visual design, navigation and ease of use, media integration, clarity of learning flow in the media, media suitability for learning objectives, and application of learning media. Overall, the media expert validation results yielded an average percentage of 80.35%, indicating that it is feasible to use in learning Javanese descriptive texts in grade VII. Some improvements are still needed based on the validator's suggestions, namely visual appearance, font consistency, spacing, concept map refinement, and additional instructions for using the media. General suggestions from the validators emphasized the importance of refining the material's design to make it more engaging and adding a variety of content to make the learning experience more interactive and easier for students to follow. Based on the directions and input from the experts, revisions were made to the learning media products to improve the media before implementation during the product trial stage.

The learning media for Javanese descriptive text based on Lumio by SMART was tested on students of class VII B MTs NU Mawaqi'ul Ulum Kudus, totaling 23 students. This trial aims to determine the feasibility of using media for learning by assessing student learning outcomes after using the developed media. The trial assessment included four elements, namely reading practice, reading evaluation, writing practice, and writing evaluation. The students' scores were converted to percentages and interpreted according to the predetermined assessment criteria. The following is a recapitulation of the product trial results presented in Table 4.

**Table 4. Product Trial Results**

| Category      | Number of Students | Percentage (%) |
|---------------|--------------------|----------------|
| Very good     | 19                 | 82,6           |
| Good          | 4                  | 17,4           |
| <b>Amount</b> | <b>23</b>          | <b>100</b>     |

Based on the results of the product trial, students can follow the learning process well and complete the learning exercises and evaluations presented through Lumio by SMART-based Javanese descriptive text learning media. In reading skills, students can understand the content of descriptive texts and answer questions about them. Furthermore, in writing skills, students can express ideas in the form of Javanese descriptive text by paying attention to text structure, vocabulary, and the use of *krama alus* language variety. The limitations of trials using this media are dependence on the quality of the internet connection, so a strong signal is needed to support a smooth learning process.

Thus, the findings from the product trial indicate that the Lumio by SMART learning media for Javanese descriptive text is appropriate for educational purposes. This media





supports the skills of reading and writing Javanese descriptive texts and helps students follow the learning in a more directed and interactive manner. The integration of descriptive text focusing on traditional foods, traditional music instruments, and regional cultural customs corresponds with the principles of Culturally Responsive Pedagogy (CRP). Educational materials, including *Gethuk*, *Srabi*, *Jenang Kudus*, *Klepon*, *Kendhang*, and *Buka Luwur Kitha Kudus*, are closely linked to the cultural heritages and daily lives of learners. Connecting educational material to well-known cultural contexts encourages students to engage more actively in reading and writing tasks, allowing them to draw meaning from their personal experiences and culture backgrounds (Matitaputty et al., 2026). In addition, incorporating local cultural elements helps preserve regional heritage and strengthens students' sense of cultural identity. Consequently, the created resources not only facilitate language learning but also promote meaningful and culturally relevant educational experiences.

### Conclusion

The results of the product validation test show that the learning media developed meet the eligibility criteria from both material and media aspects. The test results show that all students achieved learning outcomes in the “good” and “very good” categories, with 82.6% in the “very good” category and 17.4% in the “good” category. Students were able to follow the learning flow well and achieve positive learning outcomes in reading and writing Javanese descriptive texts. Thus, the Javanese language descriptive text learning media on Lumio by SMART can be used as an alternative digital learning resource to support the learning process.

### Recommendation

According to the findings of this research and development study, educators are urged to utilize Lumio by SMART as an alternative digital learning tool to enhance the teaching of Javanese descriptive texts and to boost student involvement in reading and writing activities. Developers of learning media are encouraged to enrich the content by incorporating additional educational materials, interactive tasks, and assessment options to meet students' varied needs. Future researchers might expand upon this study by applying the media to different Javanese language topics, including larger groups of participants, or conducting studies on its effectiveness to assess its impact on student learning outcomes across various educational levels.

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