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# Development Of Interactive Learning Media Based On Lumio By Smart On Basic Elements Of Accounting And Institutional Finance At SMKN 1 Surabaya

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## ABSTRACT
The digital era has driven a significant transformation in the world of education, one of which is through the development of digital learning media that is effective in increasing learner motivation and understanding. This study aims to examine the process of developing interactive media based on Lumio by SMART on Basic Elements of Accounting and Institutional Finance at SMK Negeri 1 Surabaya, test the feasibility of the product, and analyse students' responses to its use in learning. This media development uses the 4-D model, but is only carried out up to the Develop stage. The results showed that the feasibility of content reached 83.75%, presentation 87.5%, language 94.28%, and graphic 98%, with an overall average of 94% which is classified as very feasible. Learners' responses also showed a very high level of understanding, with an average percentage of 97%. Based on expert validation and learner responses, Lumio by SMART-based learning media on Basic Elements of Institutional Accounting and Finance is declared very feasible to use in the learning process.

**Keywords:** Interactive Teaching Media, Lumio by SMART, Vocational High School.

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## INTRODUCTION
The digital era is marked by technological developments that have driven significant transformations across various sectors globally. The magnitude of technological developments and advancements demands that people from all walks of life keep pace with the evolving technology. The peak of technological progress was the global spread of the COVID-19 virus, which has motivated many technologists to develop and utilize technology to assist and simplify human affairs in all areas, including education (ITEBA, 2020). Technology in education exists to facilitate the learning process and increase student motivation to learn more actively. This technology presents a challenge for educators and teachers in providing teaching methods and strategies that are appropriate to current developments. The quality of education depends not only on students and teachers, but also on the support of all elements within the education system (Kusumatuty & Murwaningsih, 2017). In Indonesia, education is a crucial issue because it significantly influences the future of the nation and state (Wulansari & Maunah, 2024).

The role of instructional media is crucial in supporting the teaching and learning process. Teachers are required to provide high-quality, easily understood instructional media to support effective learning. Therefore, teachers are obligated to determine the best approach to ensure students can easily absorb the material presented (Rohayati et al., 2022). Learning media plays a crucial role as a bridge of information and a tool to overcome various obstacles that may arise

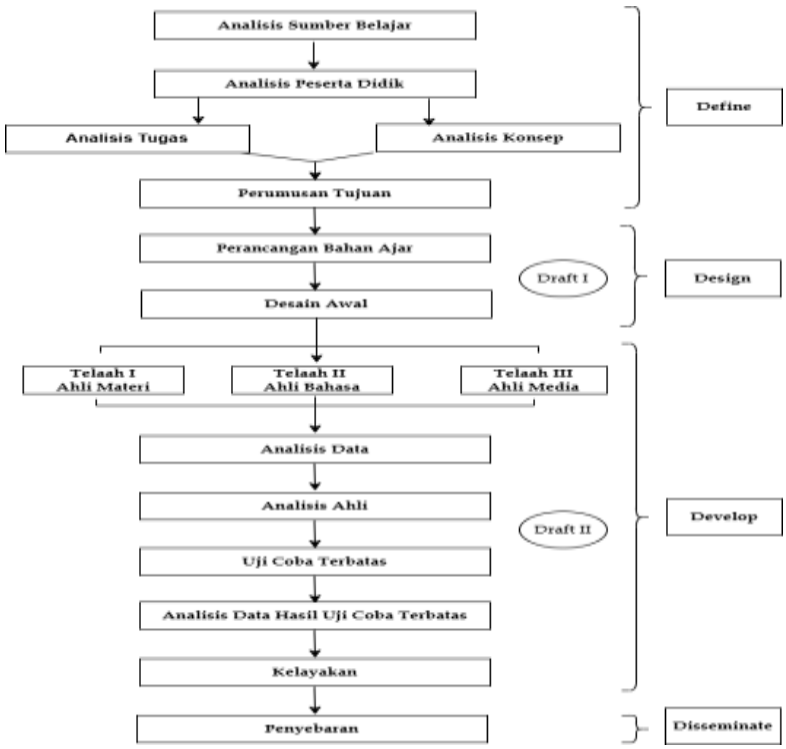
during the teaching and learning process. Furthermore, media also serves to increase motivation in both students and teachers, thereby supporting smooth and effective learning (Hasan et al., 2021).

Basic Accounting Concepts material is the initial foundation in learning accounting which is the logical basis for the process of recording, grouping, and preparing financial reports (Gunawan, 2020). Based on the results of questionnaire distribution and in-depth interviews, it was identified that the learning process in the Basic Accounting and Institutional Finance elements is still dominated by the conventional use of PowerPoint media, with minimal use of tools such as trial balances, manual ledgers, and transaction recording simulations. In addition, the use of professional accounting software has not been optimized. This condition has a direct impact on the level of student understanding, especially in material that requires application. As many as 96.6% of class X Accounting students stated the need for a more contextual and participatory learning approach. Based on these results, it was found that around 30% of students were in the incomplete category and another 30% were in the completed category but were not yet satisfactory for the Learning Objective Achievement Criteria (KKTP) in the Basic Accounting and Institutional Finance elements, especially the Basic Accounting Concepts material.

This indicates that the ongoing learning process is not yet optimal. Due to the demands placed on teachers to comply with ministry policies, many teachers still lack the skills to use digital tools such as LMSs and interactive learning applications. Dynamic curriculum changes to integrate 21st-century skills are often not supported by adequate training. The workload increases with technological adaptations and administrative tasks, risking burnout. Without ongoing training, adequate infrastructure, and supporting policies, teachers will struggle to meet the learning demands of the 5.0 Era, hindering the creation of a superior and competitive generation. According to a student survey, 83.1% of students stated that website-based learning materials could be supported by school infrastructure. One solution that can be offered is through the development of interactive technology-based learning media. In this context, Lumio By Smart is present as a digital learning platform that enables teachers to design interactive and collaborative learning media. Lumio supports the integration of text, video, quizzes, gamification activities, and visual learning that is responsive to today's student learning styles. The use of Lumio is in line with learning principles that emphasize fun, active, and student-centered learning. Based on the description above, the researcher took the title "Development of interactive learning media based on Lumio By Smart on the basic elements of accounting and institutional finance at SMKN 1 Surabaya".

## METHOD

The type of research that will be used in this study is research and development or can be called Research and development (R&D). R&D research aims to produce certain products and test the effectiveness of these products. and the development model used is the 4-D model by Thiagarajan, & Semmel. According to (Sugiyono, 2016). However, as explained by Borg and Gall in (Sugiyono, 2016) development research is an approach used to develop and validate products used in education and learning.




**Gambar 3 1 Prosedur Penelitian Pengembangan Media Pembelajaran 4-D**
**Sumber: Trianto (2015)**

The experts involved in the review sheet this time were 2 lecturers from Surabaya State University, each from the Faculty of Economics and Business, S1 Accounting Education Study Program and from the Faculty of Education and 1 Institutional Financial Accounting Teacher from SMK Negeri 1 Surabaya. The types of data used in this development research are primary data and secondary data. Primary data is data obtained directly by researchers through interviews with teachers, student preliminary study questionnaires, expert review sheets, expert validation sheets, student response tests and effectiveness tests taken after conducting product trials. Secondary data is data obtained from vocational curriculum documents, scientific literature on interactive learning media, assessment guidelines and rating scales obtained from the Ministry of Education and Culture. Riduwan, (2018) and Sugiyono, (2019) as well as teaching module documents as reference and comparison materials.

**Table 1.** Likert Scale

| Scale | Statement |
|---|---|
| 1 | Very Not Feasible |
| 2 | Not Feasible |
| 3 | Feasible Enough |
| 4 | Feasible |
| 5 | Very Feasible |

**Source ;** Sugiyono, (2019)

The Likert scale mentioned above will eventually be combined to create a final score, which will then be further examined using percentages to determine the feasibility of the resulting media. The following equation is used to determine the percentage;

$$\text{Percentage (\%)} = \frac{\sum Total\ Score}{\sum Maxmum\ number\ of\ scores}\ x\ 100\ \%$$

Description ;

Total Score : Total score obtained from all respondents

Maximun number of scores : Maximum score obtained from all respondents

A Likert scale based on the criteria listed in the following table can be used to draw conclusions about the feasibility of learning media that have been verified by professionals based on the above percentages ;

**Table 2.** Feasibility Criteria Based on Percentage

| Percentage (%) | Assessment Criteria |
|---|---|
| 0% - 20% | Very Unfavorable |
| 21% - 40% | Not Feasible |
| 41% - 60% | Fairly Feasible |
| 61% - 80% | Feasible |
| 81% - 100% | Very Feasible |

**Source ;** Sugiyono, (2019)

The Guttman scale, which is based on "Yes" and "No" statements, and has a score of 0 for "No" and 1 for "Yes," was used in the following analysis of the questionnaire findings of student responses regarding the use of learning media. To obtain specific responses to a question, a guo ttman scale was used. obtain a specific response to a question, a guttman scale was used (Sugiyono, 2019).

**Table 3.** Guttman Scale

| Criteria | Value/Score |
|---|---|
| Yes | 1 |
| No | 0 |

**Source ;** Sugiyono, (2019)

To ensure the ease of use of the created teaching media, it will be assessed in percentage. The following study generates a percentage of the ease of use level using a guttman scale ;

$$\text{Percentage (\%)} = \frac{\sum Total\ Score}{\sum Maxmum\ number\ of\ scores}\ x\ 100\ \%$$

Description ;

Total Score : Total score obtained from all respondents

Maximun number of scores : Maximum score obtained from all respondents

A Likert scale based on the criteria listed in the following table can be used to draw conclusions about the ease of use of the analyzed media from the learners' responses as follows ;

**Table 4.** Criteria for the Level of Ease of Use of the Product

| Percentage (%) | Assessment Criteria |
|---|---|
| 0% - 20% | Not Very Easy |
| 21% - 40% | Not Easy |
| 41% - 60% | Fairly Easy |
| 61% - 80% | Easy |
| 81% - 100% | Very Easy |

**Source ;** Sugiyono, (2019)

# FINDING AND DISCUSSION

1. **The process of developing interactive learning media based on lumio by smart**

   The results of this study are the product of the development of interactive learning media using lumio by smart which encourages students' interest in learning both independently and in class and can also help students in understanding the material of basic

accounting equations and basic accounting elements in class 10 AKL at SMKN 1 Surabaya. In this section, the results of a series of development research processes, feasibility tests and responses from students in the use of interactive learning media that have been developed will be presented, which aims to answer the problems in the research problem formulation that has been explained previously. According to the process, the results of the study were obtained through data collection instruments that have been provided. The following are the results of the research on the development of interactive learning media based on lumio by smart on basic accounting elements. Development of interactive learning media based on lumio by smart on the basic elements of accounting and financial institutions at SMKN 1 Surabaya using the 4D development model.

**Table 5.** Expert Review Results

| | |
|---|---|
| Materials Expert | The material is adapted to vocational school level students. |
| | Questions have been revised according to the latest provisions |
| | Writing technique improved |
| Media Expert | The lower limit of the media is adjusted |
| | The home page is bookmarked to make it easier for users to read |
| | The discussion space is replaced by a reflection space at the end of the lesson. |
| Linguist | Mistakes in writing foreign words |
| | The use of periods is given more attention |
| | It is better not to start a sentence using a conjunction. |

**Source ;** Data Processed by rearchers (2025)

Research by (Kamilah & Rohayati, 2024) shows that contextual-based digital learning media developed through media can significantly improve the quality of learning. The results of expert validation of the learning media product showed a "very feasible" category. This finding reinforces the urgency of utilizing interactive platforms such as Lumio by SMART which are considered relevant to support more interesting and enjoyable learning, and enable students to learn independently with more meaningful experiences. In line with the statement (Osipova & Bagrova, 2024) "The Lumio platform by SMART Technologies demonstrates a high didactic potential due to its interactive features, multimedia integration, adaptability, collaborative tools, real-time feedback mechanisms, and learning analytics. These features collectively enhance student engagement, support individualized learning paths, and contribute to more effective knowledge acquisition." Therefore, this is in line with the characteristics of accounting learning that demands accuracy, a thorough understanding of concepts, and continuous practice. In the context of vocational schools, especially in the subject of Basic Accounting and Institutional Finance, these features enable educators to design learning that is not only oriented towards material, but also towards strengthening student competencies through active involvement and direct reflection on learning activities.

2. Feasibility of interactive learning media based on lumio by smart

The feasibility of lumio by smart-based learning media on the basic elements of accounting and financial institutions is based on the assessment obtained from the validation results from material, media, and language experts. The experts play a role in assessing the developed product, the sheet contains a Likert-scale assessment with 5 criteria: a score of 5 is very feasible, a score of 4 is feasible, a score of 3 is moderate, a score of 2 is not feasible, and a score of 1 is very not feasible. Knowing whether the product is feasible for testing is based on calculations from validations that have been carried out by existing experts. In the

validation process, there are 4 validators, namely 2 material validators, 1 media validator, and also 1 language validator.

**Table 6** Analysis Results from Expert Validation

| No. | Assessment Aspects | Presentage | Interpretation |
|---|---|---|---|
| 1. | Content Eligibility | 83,75% | Very Feasible |
| 2. | Presentation Eligibility | 87,5% | Very Feasible |
| 3. | Image or media suitability | 98% | Very Feasible |
| 4. | Language Eligibility | 94% | Very Feasible |
| **Average eligibility of lumio learning media by smart** | | **90,81%** | Very Feasible |

**Source ;** Data Processed by rearchers (2025)

The development of interactive learning media based on Lumio by SMART in this study involved a number of experts, including material experts, language experts, and graphic media experts, who played a role in the validation process to assess the feasibility of the product. The validation process was carried out using an instrument sheet compiled based on the feasibility indicators from BSNP (2014), with a Likert scale interpreted in the form of a percentage. The involvement of these experts was intended to ensure that the developed learning media was not only substantively feasible, but also met the linguistic and visual aspects in accordance with applicable learning standards. The importance of validation by experts was emphasized by Riduwan (2015), who stated that the involvement of experts in the evaluation of the instrument is an integral part of the validity of the study. The involvement of professionals in the development stages of this interactive learning media serves as a strategy to ensure that the final product is of high quality, relevant to the learning needs in vocational schools, and able to optimally improve the achievement of student competencies.

3. Student response to interactive lumio by smart

The responses provided not only serve as a form of final evaluation but also provide informative feedback for developers in reviewing the extent to which the learning media is able to convey material well, attract attention, and provide ease of use for students. Evaluation based on student responses provides a strong basis for making further improvements and adjustments so that the learning media becomes more relevant to the needs and characteristics of students in vocational schools. One instrument used to measure this response is the Guttman scale, which is considered capable of producing clear, directed data that is easy to analyze quantitatively. Riduwan (2015) emphasized that student involvement in the evaluation process is crucial to support the development of quality learning products. The use of the Guttman scale allows researchers to identify certain aspects that require revision based on the percentage of students' agreement or disagreement with the statements that have been compiled in the evaluation instrument.

Involving students in providing responses to the Lumio-based Learning Media developed by Smart is a crucial step in ensuring the quality and effectiveness of the learning media. The responses provided by students not only serve as a final evaluation but also as formative feedback that is very useful for developers in revising learning products appropriately. As shown by (Nanda Irawan & Zuhdi, 2025), student involvement through the Guttman scale instrument is able to produce objective quantitative data regarding the level of acceptance of the features, content, and appearance of Lumio-based Learning Media.

**Table 7** Learner Response Analyze

| Variable | Sub Variable | ∑Score | Percentage | % |
|---|---|---|---|---|
| **Quality and Content of Objectives** | Accuracy | 20 | 100,00 % | 100,00% |
| | Appropriateness | 20 | 100,00% | |
| **Quality Instructional** | Providing Assistance for Learning | 19 | 95,00% | 97,50% |
| | Motivating Quality | 19 | 95,00% | |
| | | 20 | 100,00% | |
| | | 20 | 100,00% | |
| **Quality Engineering** | Readability | 20 | 100,00% | 100,00% |
| | | 20 | 100,00% | |
| | | 20 | 100,00% | |
| | Easy to use | 20 | 100,00% | |
| **Total** | | 198 | | **99,00%** |

**Suorce : Data Processed by researchers (2025)**

According to the results of the student responses, the average student response to the development of Lumio by Smart-based Learning Media on the material of the concept of basic accounting equations is very valid with a percentage of 99%. The response assessment includes the content of the material, presentation, media and language packaged in the student response questionnaire sheet. The results of the questionnaire indicate that the digital book is very well understood by the majority of students. In addition to containing an assessment of the product that has been developed, the questionnaire also includes a column for writing criticism and suggestions.

## CONCLUSIONS

The development of interactive learning media based on Lumio by SMART on the Basic Accounting and Financial Institution elements at SMKN 1 Surabaya was carried out using a 4-D development model which includes the Define, Design, Develop, and Disseminate stages, but is limited to the Develop stage. The validation results from material experts, language experts, and media experts indicate that this media is very suitable for use in the learning process. In addition, the responses of class X AKL 3 students showed a very good level of understanding of the material, based on the assessment of the appropriateness of the content, presentation, language, and graphics of the media.

## REFERENCES


Amalila Choir, R. (2024). The Impact Of Discovery Learning Model With Lumio By Smart On High School Students' Engagement And Learning Outcomes In Static Fluids. Konstan (Jurnal Fisika Dan Pendidikan Fisika), 9(2). Https://Doi.Org/Https://Doi.Org/10.20414/Konstan.V9i02.643

Ambarwati, I., & Rochmawati. (2020). Buku Ajar Berbasis Contextual Teaching And Learning (Ctl) Pada Mata Pelajaran Komputer Akuntansi Accurate. Jurnal Mimbar Ilmu, 25(3). Https://Doi.Org/Https://Doi.Org/10.23887/Mi.V25i3.28931

Arzfi, B. P., Montessori, M., & Rusdinal. (2025). Development Of Digital Game Based Learning Model Teaching Materials To Improve Learning Outcomes In Primary Schools. Educational Process: International Journal, 15. Https://Doi.Org/10.22521/Edupij.2025.15.114

Gunawan, H. (2020). Pengembangan E-Modul Akuntansi Kompetensi Dasar Mencatat Transaksi Dalam Persamaan Dasar Akuntansi Di Sekolah Menengah Kejuruan. Jurnal Neraca: Jurnal Pendidikan Dan Ilmu Ekonomi Akuntansi, 4(1), 84. Https://Doi.Org/10.31851/Neraca.V4i1.4311

Kamilah, S., & Rohayati, S. (2024). Pengembangan Bahan Ajar E-Book Berbasis Kontekstual Pada. 4(2), 1257–1268.

Khodijah, S., Wahdah, N., Redha Anshari, M., & Palangka Raya, I. (2024). Application Of Lumio By Smart Media In Increasing Student Learning Independence In Islamic Religious Education Subjects. Https://Jurnaldidaktika.Org43

Nanda Irawan, A., & Zuhdi, U. (2025). Pengembangan Media Let's Do It Berbantuan Website Lumio By Smart Untuk Mengoptimalkan Kosakata Bahasa Inggris Materi What Are You Doing Kelas Iv Sekolah Dasar. 1(2), 208–222.

Osipova, E. S., & Bagrova, E. Y. (2024). Lumio By Smart: An Effective Digital Tool For Teaching English Vocabulary To Non-Language Students. Pedagogy. Theory & Practice, 9(8), 727–739. Https://Doi.Org/10.30853/Ped20240093

Riduwan, R. (2018). Skala Pengukuran Variable-variabel. In *Cetakan 12. Penelitian*.

Sugiyono. (2019). *Metode Penelitian Kuantitaif, Kualitatif dan R&D* (Sutopo (ed.)). Alfabeta Bandung.

Tampubolon, R. S., Nursamsu, N., & Mahyuny, S. R. (2024). Penerapan E-Book Pada Materi Sistem Koordinasi Untuk Meningkatkan Hasil Belajar Siswa Di Sma Negeri 3 Langsa. Bioed : Jurnal Pendidikan Biologi, 12(1), 1. Https://Doi.Org/10.25157/Jpb.V12i1.12730

Wulansari, V., & Maunah, B. (2024). Pembaharuan Dan Perkembangan Pendidikan Dalam Membentuk Siswa Agar Lebih Maju Di Era Digital. Jurnal Ilmiah Kependidikan Widya Didaktika, 3(1), 45–60. Https://Journal.Unwidha.Ac.Id/Widyadidaktika