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Needs Analysis: Interactive Problem-Based Learning Media Assisted by Google Sites in Commercial Accounting Material

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ABSTRACT

This study aims to analyse the need for Google Sites-assisted problem-based interactive learning media in Trading Company Accounting materials at SMKN 1 Pedamaran Timur. The research background is based on learning conditions that are still dominated by the use of conventional media, such as transaction document sheets and simple visual presentations, so that learning outcomes are not optimal. The research method used was qualitative descriptive with data collection techniques through observation, interviews, documentation, and questionnaires to 35 students and 5 Accounting teachers. The results of the analysis showed that the students' needs for learning media were in the high category with a percentage of 81.67%, while the needs of teachers were in the high category with a percentage of 82%. These findings indicate the need for innovative, practical, and contextual learning media to improve student learning outcomes. Therefore, the development of interactive learning media based on Google Sites assisted by Google Sites is expected to be a solution to support the Accounting learning process of Trading Companies that is more effective, interesting, and in accordance with the demands of the Independent Curriculum.

1. Introduction

Education in the global era faces increasingly complex challenges. The presence of information technology has not only changed the way humans communicate and work, but also has a significant impact on the education system (Salsabila & Agustian, 2021). One of the elements that plays a role in the learning process to achieve educational goals is the teacher. Education practitioners have the task of being facilitators, motivators, and inspirers who are able to collaborate with technology in learning to encourage students to master their skills (Hidayatullah et al., 2023). In line with the mandate of the Merdeka Curriculum, *student-centred learning* needs to be realised through learning experiences that not only emphasise cognitive aspects but also instil local social and cultural values (Usman et al., 2025).

One subject that requires innovation in delivery is the accounting concentration subject. This accounting concentration subject is taught in Phase F in semesters 4 and 5 with a considerable amount of meeting time, namely 18 face-to-face hours per week, so creative learning media and innovation in the learning process are needed. However, based on initial observations at SMKN 1 Pedamaran Timur, it was found that the use of learning media in the learning process was not optimal. Learning activities only used media in the form of transaction documents such as receipts, notes, and invoices. Some teachers also used media in the form of PowerPoint visual displays, which tended to only show visuals without involving direct interaction with students. This condition has resulted in low learning motivation, boredom, and a lack of student involvement in the learning process. Learning outcomes also show suboptimal achievements, as many students are still below the Learning Objective Achievement Criteria (KKTP). This indicates a gap between the expected learning objectives and actual achievements.

A good learning process can be developed by considering its components logically. One of these is choosing learning media that is tailored to the learning model based on the characteristics of the child (Abidin, 2016). In their development, secondary school-aged students are closely related to a high level of curiosity, both socially and emotionally, because at this age children begin to search for their identity, moving from childish thinking towards maturity (Rudi, 2021). During this adolescent age range, students tend to be easily attracted to new things, especially those related to technology or *gadgets* (Hermawan, 2021). Based on the characteristics of these students, one solution that can encourage interest in learning is to use more interactive learning media in learning activities and to organise learning in a way that allows children to solve problems together.

Interactive learning media are tools that can convey messages or information from teachers to students, in a process involving active two-way communication between multimedia and users (students) with the aim of facilitating the learning process (Putri et al., 2022). Interactive media generally refers to multimedia products and digital services on IT systems that respond to user actions by presenting audio, visual, or audiovisual content (Affifaturrochman & Bahtiar, 2024). One form of interactive learning media is *website-assisted* learning media or information spaces that can be accessed via the internet. Meanwhile, problem-based interactive learning media is interactive learning media developed to stimulate students to improve their reasoning skills and use their knowledge when given problems (Fachrunnisak & Susanti, 2022). The problems selected have two important characteristics: first, the problems must be authentic and related to the social context of the learners; second, the problems must be rooted in the subject matter of the curriculum (Kusuma, 2021). This is in line with the statement made by (Ahmar et al., 2020) that the use of problem-based learning models can foster children's motivation and critical thinking skills, accompanied by an increase in learning outcomes (Mauliansyah et al., 2023).

Google Sites is a product developed by Google to create websites (Tambunan & Siagian, 2022). *Google Sites* is a website specifically designed to create websites that can be used, among other things, to create interactive learning media for

educators (Saputra et al., 2022). The advantage of *Google Sites* is that it can be easily collaborated with several other products from *Google* itself, such as *Google Docs*, *Google Forms*, *Google Sheets*, and others. In addition, it can also be collaborated with other *platforms* such as *Canva*, *Padlet*, *Quizizz*, *Kahoot*, etc., which are applied via links. *Google Sites* is expected to create practicality and fulfil the needs of students that cannot be obtained from textbooks alone (Syah & Hidayatullah, 2024). This is in line with the statement made in the study (Prayudi & Anggriani, 2022) that interactive learning media created using *Google Sites* is suitable for use as a teaching aid because it can improve student learning achievement (Tiarani et al., 2024).

The urgency of this research becomes even clearer when linked to the results of previous research conducted by Wahfidin (2023), which showed that students' collaboration skills increased on average after using a *project-based learning* model assisted by interactive learning media with *Google Sites*. Furthermore, research conducted by Sulistyawati (2022) concluded that interactive learning media assisted by videos to improve student learning achievement created using *Google Sites* is suitable for use as a teaching aid (Heni et al., 2020). However, previous studies have not yet created learning media for commercial accounting material by combining the concepts of *Google Sites* and problem-based learning into a single media unit. Therefore, this study has a *novelty* that can make a real contribution to the development of accounting learning media in vocational secondary schools.

Based on this description, needs analysis is an important initial stage in the media development process. According to Branch (2009), the steps taken in this stage are 1. Assessing performance gaps 2. Formulating instructional objectives 3. Identifying learner characteristics, including abilities, experiences, motivation, attitudes, and others 4. Identifying resources, including considerations of time, content, technology, facilities, and people (teachers) 5. Determining the appropriate learning media development strategy 6. Developing an activity plan. Needs analysis aims to identify existing learning problems, explore the limitations of the media used, and explore the expectations of teachers and learners regarding the desired learning media. Through needs analysis, in-depth information will be obtained regarding the appropriate media design, relevant content, and approaches that suit the characteristics of the students. The results of this needs analysis can then be used as a basis for designing interactive learning media products based on problems assisted by *Google Sites*, so that the resulting media is truly valid, practical, and effective in improving the quality of Accounting learning, especially the material on Commercial Accounting.

2. Methodology

The method used is qualitative descriptive research through observation, semi-structured interviews, documentation, and questionnaires. Observations in class XI AKL SMKN 1 Pedamaran Timur provide an overview of the use of media and obstacles faced by teachers in accounting learning as well as the behaviour of students during class hours. Interviews explored the obstacles faced by teachers in

teaching, the limitations of media, and views on technology, as well as the feelings experienced by students during the learning process. Documentation explored information related to curriculum analysis, including structure, material, and learning outcomes. The questionnaire was compiled based on student and teacher needs indicators and was given to 35 students and 5 accounting teachers.

The questionnaire data was analysed descriptively using percentages, categorised as very low, low, medium, and high. The results of the analysis showed a real need for learning media that is interesting, contextual, and in line with the characteristics of students at the concrete operational stage. Therefore, the media designed was interactive learning media based on problems assisted by *Google Sites* on Commercial Accounting material. Questionnaire grid for student and teacher needs analysis can be seen at table 1 and table 2.

Table 1. Questionnaire Grid for Student Needs Analysis

Aspect	Indicator	Item Number
Knowledge	1. Good understanding of subject matter	1
	2. Students have difficulty understanding concepts	2
Skills	3. Optimal use of learning resources	3
	4. Good problem-solving skills	4
	5. Students' critical thinking skills are high	5
Attitude	6. Good communication skills	6
	7. High interest in learning	7
	8. Good learning motivation	8
Learning	9. Good learning discipline	9
	10. Appropriate learning media	10
	11. Optimal use of learning media	11
Facilities and Infrastructure	12. Dynamic interaction with teachers	12
	13. Adequate availability of learning resources	13
	14. Adequate learning facilities at home	14
	15. Sufficient internet access	15

Source: Modified (Harefa & Laoli, 2021)

Table 2. Questionnaire Grid for Teacher Needs Analysis

Aspect	Indicator	Item Number
Pedagogical Competence	1. Teachers learn innovative and interactive learning strategies to help students understand accounting material more easily	1
	2. Teachers have knowledge and insight into accounting material	2
Learning Media	3. The learning media used are more innovative and interactive	3
	4. Learning media are used efficiently at each stage of learning	4
Facilities and Infrastructure Support	5. Facilities and infrastructure that support the implementation of learning	5
	6. Sufficient internet access	6
Characteristics of Learners	7. Learners' interest in the learning stages	7
	8. Learners' interest in the use of application technology in learning	8
Learning Process	9. Learning media used in accounting learning	9

Aspect	Indicator	Item Number
	10. Learning models used in accounting education	10

Source: Modified (Meliyani et al., 2022)

The results of the completed questionnaire can be analysed using the percentage technique with the following formula:

$$P = (f/N) \times 100\%$$

Where

P = percentage

f = number of scores obtained

N = maximum number of scores.

The percentage result is then categorised according to the level of need (low, medium, high, very high). Requirement category can be seen at table 3.

Table 3. Requirement Category

Percentage (%)	Requirement Category
0 – 25	Very Low
26 – 50	Low
51–75	Moderate
76–100	High

Source: (Arikunto, 2019)

3. Results and Discussion

Needs analysis was conducted through observation, interviews, documentation, and questionnaires to students and teachers at SMKN 1 Pedamaran Timur. Based on the observation activities carried out at SMKN 1 Pedamaran Timur, it was found that the school did not have sufficient learning media. No teachers had created interactive learning media using *Google Sites*, especially for commercial accounting material. Teachers have not utilised technology in creating learning media. At this time, the use and utilisation of technology is very important in order to be prepared for developments in the modern era. In line with Manongga (2021), educational technology can be utilised as a system to facilitate and support the smooth running of the learning process so that the formulated objectives are achieved and the desired results are obtained.

Based on observations of students during the learning process, there were still some students who tended to leave the classroom even though the teacher was present. When asked, they said they left because they were bored with the learning media, which was only visual. The facilities and infrastructure owned by the school included classrooms, blackboards, tables and chairs, projectors, and school Wi-Fi to support learning.

Based on interviews with five accounting teachers, it was found that the learning process for commercial accounting material was adapted to the independent

curriculum, which requires learning to activate students. However, this sometimes cannot be done optimally because the learning process must be followed by the next material. In addition, during the interviews, several needs and problems in accounting learning were identified, including that students are not interested in learning without the use of interactive learning media. During the learning process, students feel bored, sleepy, some do not pay attention, are not focused, and easily lose concentration. Students consider that commercial accounting material is difficult to learn because there are too many stages of material.

Based on the documentation carried out by the researcher on the Education Unit Curriculum (KSP) document, several pieces of information were obtained related to the curriculum used, namely the independent curriculum, the division of the curriculum structure in accounting subjects, specifically trading company accounting material, which is 18 face-to-face hours per week, the education calendar, and learning achievement data which will be used in the preparation of teaching modules.

This documentation activity assisted the researcher in conducting the curriculum needs analysis or instructional design stage. In addition to the results of interviews and field observations, the results of the needs analysis were reinforced by the distribution of a needs analysis questionnaire to 35 students and 5 accounting teachers. The results of the analysis are presented in the following figure 1.

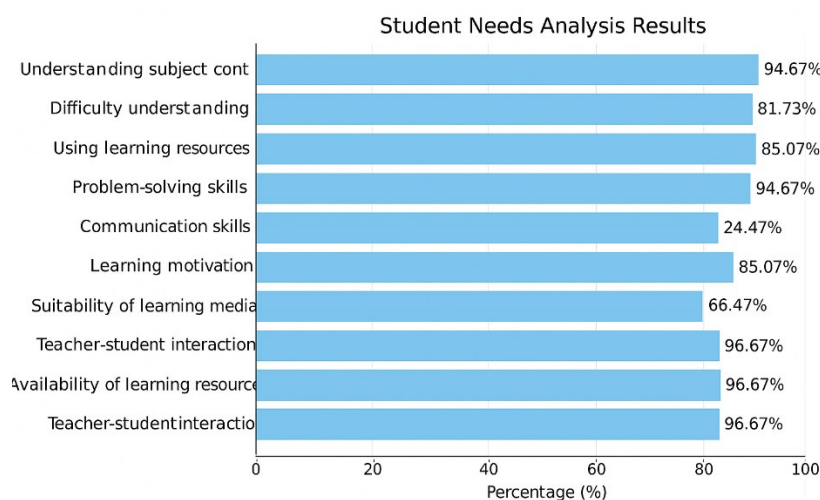


Figure 1. Results of Student Needs Analysis

The analysis results show that student needs for accounting learning media are in the high category (81.67%). This indicates that although students are interested in the material, they have difficulty understanding abstract terminology and concepts, which causes them to quickly become bored when learning relies solely on transaction evidence sheets. Conversely, students showed a strong preference for visual and interactive media such as videos and animations packaged in *Google Sites*. This is in line with the statement made in the study (Prayudi & Anggriani,

2022) that interactive learning media created using *Google Sites* is suitable for use as a teaching aid because it can improve student learning achievement. This is reinforced by (Alfiyana & Sutiah, 2023), which found that interactive learning media assisted by websites (*Google Sites*) can improve learning achievement. Thus, problem-based interactive learning media assisted by *Google Sites* has been proven to be effective and relevant to the cognitive needs of students. Teacher need analysis questionnaire diagram can be seen at figure 2.

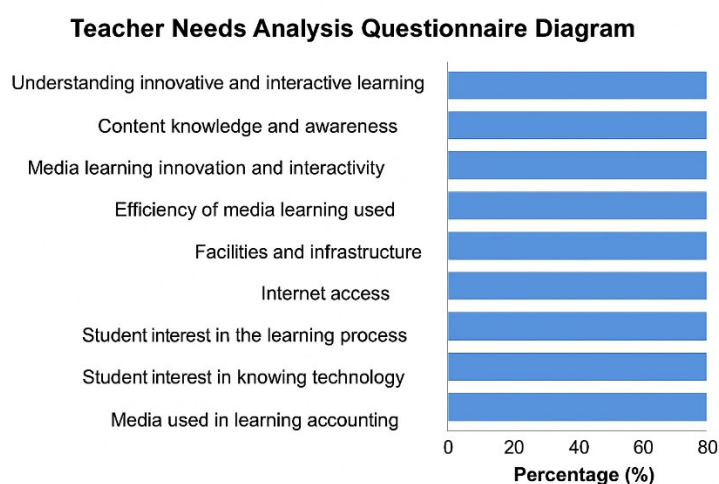


Figure 2. Results of the Teacher Needs Analysis Questionnaire

In terms of teacher needs, there is a high percentage (82%), indicating that teachers are still limited in their use of existing learning media. On average, teachers still rely on print media in the form of transaction sheets and PowerPoint presentations that are only visual in nature, which do not support the active involvement of students. Teachers expressed a need for media that is practical, easy to use, and in line with curriculum objectives. Research by Dewi et al. (2025) also concluded that Google site-based interactive media is feasible, effective, and practical for use in mathematics learning in the classroom. These findings emphasise the importance of innovative, interactive, and practical media for teachers.

Overall, this needs analysis complements each other and confirms the urgency of developing new learning media. The students' need for interactive media, the limitations of teachers in using conventional media, the weaknesses of existing media, and the need for instructional design that is appropriate to the learning context all lead to one conclusion: innovative learning media is needed to address these challenges. One solution that is considered relevant is the development of problem-based interactive learning media assisted by *Google Sites*. This media not only presents videos related to learning materials that are visually appealing, but also allows for interaction between students by answering simple quizzes and problem-solving assignments, thereby strengthening the relevance of the material to the daily lives of students and challenges. It is hoped that this will increase students' intrinsic motivation and active involvement in learning.

4. Conclusion

The analysis revealed a strong demand for interactive, problem-based learning media supported by Google Sites to enhance the teaching of commercial accounting at SMKN 1 Pedamaran Timur. The absence of such media has led to difficulties in understanding concepts, low motivation, and reduced engagement among students, ultimately affecting their learning outcomes. Both students and teachers recognize the urgency of implementing interactive media as a means to make learning more dynamic, accessible, and effective. Thus, developing problem-based interactive learning media using Google Sites is essential to address existing learning challenges and improve the overall quality of the educational process in commercial accounting.

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