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NEEDS ANALYSIS AS THE FIRST STEP OF ARTICULATE STORYLINE ASSISTED LEARNING MEDIA DEVELOPMENT

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Abstract
This study aims to analyze students' needs for learning media assisted by Articulate Storyline as a way to improve students' critical thinking skills. The research method used was development research with the ADDIE development model, but this research only reached the analysis stage. Data collection involved literature study and field study. The literature study was conducted by collecting relevant research and sources and analyzing the curriculum used by the school, while the field study was conducted by interviewing teachers and students of grade VI SD Negeri 74 Palembang, observation, critical thinking skills test, and documentation. Data analysis was conducted using the concept of Miles and Huberman which includes data reduction, data presentation, and conclusion. The results showed that students had varied characteristics and critical thinking skills. The average percentage of overall critical thinking ability is 37% with a low category. IPAS Phase C Learning Outcomes on Earth rotation material require students to be able to think critically. Students show enthusiasm when using learning media involving technology. Teachers and students agreed that they need Articulate Storyline learning media, which has several features to train critical thinking skills. The app allows the integration of different types of media such as video, audio, image, text and animation in one platform, which can enrich learning materials and trigger deep thinking. Based on the findings, it can be concluded that there is a need to develop learning media assisted by Articulate Storyline to improve students' critical thinking skills.
Keywords: *Needs analysis; learning media; articulate storyline; critical thinking*

Abstrak
Penelitian ini bertujuan untuk menganalisis kebutuhan siswa terhadap media pembelajaran berbantuan Articulate Storyline sebagai salah satu cara meningkatkan kemampuan berpikir kritis siswa. Metode penelitian yang digunakan adalah penelitian pengembangan dengan model pengembangan ADDIE, tetapi penelitian ini hanya mencapai tahap analisis. Pengumpulan data melibatkan studi literatur dan studi lapangan. Studi literatur dilakukan dengan mengumpulkan penelitian dan sumber yang relevan serta menganalisis kurikulum yang digunakan sekolah, sedangkan studi lapangan dilakukan dengan cara wawancara kepada guru dan siswa kelas VI SD Negeri 74 Palembang, observasi, tes kemampuan berpikir kritis, dan dokumentasi. Analisis data dilakukan menggunakan konsep Miles dan Huberman yang meliputi reduksi data, penyajian data, dan Kesimpulan. Hasil penelitian menunjukkan bahwa siswa memiliki karakteristik dan kemampuan berpikir kritis yang bervariasi. Persentase rata-rata dari kemampuan berpikir kritis secara keseluruhan adalah 37% dengan kategori rendah. Capaian Pembelajaran IPAS Fase C pada materi rotasi Bumi menuntut siswa untuk dapat berpikir kritis. Siswa menunjukkan antusiasme saat menggunakan media pembelajaran yang melibatkan teknologi. Guru dan siswa sepakat bahwa mereka membutuhkan media pembelajaran Articulate Storyline, yang memiliki beberapa fitur untuk melatih keterampilan berpikir kritis. Aplikasi ini memungkinkan integrasi berbagai jenis media seperti video, audio, gambar, teks, dan animasi dalam satu platform, yang dapat memperkaya materi pembelajaran dan memicu pemikiran mendalam. Berdasarkan hasil temuan tesebut, dapat disimpulkan bahwa dibutuhkan pengembangan media pembelajaran berbantuan Articulate Storyline untuk meningkatkan kemampuan berpikir kritis siswa.
Kata Kunci: Analisis kebutuhan; media pembelajaran; articulate storyline; berpikir kritis

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Introduction

Education is the foundation for the growth and development of every generation. In today's digital era, learning media as one of the learning components plays an important role in supporting the learning process, especially at the elementary school level. Kustandi and Darmawan (2020) say that learning media is a tool that is able to support the learning process by clarifying the meaning of the messages conveyed so that the lesson objectives can be achieved more effectively and optimally.

Learning media in elementary schools must be adapted to the characteristics of elementary school students. This is in accordance with the explanation given by (Nurfadhillah & PGSD, 2021) that the use of learning media should not be based on teacher preference, but based on the suitability of the media for student characteristics, in addition to other criteria. According to Piaget's cognitive development theory, elementary school students are in the concrete operational stage, where they need concrete or real objects that can be seen directly by the eyes when learning (Istiqomah & Maemonah, 2022; Karisma et al., 2020). Therefore, learning media used in elementary schools must be able to display objects in a concrete manner.

Learning media is very necessary in the learning process, especially in elementary school. This is because learning media can help students to understand the subject matter better and make variations in learning activities so that students do not feel bored (Haryadi et al., 2021). According to Firmadani (2020), the use of learning media can make the learning process more interesting, effective, and efficient. Not only that, the use of learning media can also train students' writing motor skills (Sahid et al., 2024), improve students' language literacy skills (Alhadi et al., 2023), student learning independence (Dewanti & Putra, 2022), and students' critical thinking skills (Azizah et al., 2021; Ma'rifah & Mawardi, 2022; Nurmawati et al., 2023; M. S. Wahyuni et al., 2024). Based on this, learning media has a relationship with students' critical thinking skills.

Learning media also has some disadvantages, especially those involving information and communication technology (ICT). According to Widianto et al. (2021), ICT media has disadvantages such as: 1) potential misuse of technology by students, such as playing online games; 2) difficulty accessing the web because it requires a good signal; and 3) unclear delivery of information due to network problems. Murtado et al. (2023) added that the shortcomings of learning media include limited internet access, different technological abilities of students, and lack of social interaction between students and teachers.

Critical thinking is defined as a process of thinking in a deeper direction that encourages students to improve their ability to analyze a problem, find problem solving, and provide new ideas that can provide a new picture of solving a problem (Ariani, 2020). But in reality, students' critical thinking skills in Indonesia are still relatively low (Marudut et al., 2020). This can be seen from the 2018 Program for International Student Assessment (PISA) results released by (OECD, 2019) showing that the average mathematics score of students in Indonesia only reached 379 out of 487. In addition, Indonesian students are only able to answer questions at levels 1 and 2. This low critical thinking ability is caused by several factors including (a) students answer questions unsystematically; (b) students misidentify questions and only summarize questions, then immediately use them as answers; (c) misconceptions; (d) students rely on memory, not understanding (Sarwanto et al., 2021).

Based on the results of interviews conducted with class VI C teachers at SD Negeri 74 Palembang, information was obtained that students' critical thinking skills were still relatively low. This is based on the teacher's observation when giving open-ended questions to students and the results of students' ability tests which show that there are 16 students out of 30 students who have low critical thinking skills. In addition, the use of learning media that uses facilities such as infocus and chromebooks is rarely used by teachers. Teachers tend to explain learning materials using blackboards and printed books. This, of course, can make students feel bored and saturated in learning activities so that it also has an impact on students' critical thinking skills. Therefore, a learning media is needed that can overcome these problems.

One of the learning media that can overcome these problems is learning media made using the Articulate Storyline application. Based on this, the researchers will develop learning media assisted by Articulate Storyline to improve the critical thinking skills of elementary school students. Daryanes et al. (2023) that Articulate Storyline is one of the interactive learning media that can combine various types of media in one application and can provide a reciprocal response for users in the learning process. Furthermore, Wibowo et al. (2022) explained that Articulate Storyline is a program that can support modern digital-based learning media designers from beginners to professionals. The Articulate Storyline application is useful for facilitating the interactive presentation process, making it easier for teachers to deliver material and can see student responses directly (Pratama & Batubara, 2021).

Based on the experts' opinions above, Articulate Storyline has unique features that make it suitable for training students' critical thinking skills. The app allows the integration of different types of media such as video, audio, image, text, and animation in one platform, which can enrich learning materials and trigger deep thinking. In addition, the immediate feedback feature helps students understand their mistakes and encourages critical reflection. Ease of use for learning media designers, ranging from beginners to professionals, allows teachers to create complex and challenging learning scenarios, such as branch scenarios that encourage analysis and evaluation. The high level of interactivity facilitates active learning, while the teacher's ability to see student responses in real time allows for targeted learning adjustments to develop critical thinking skills.

Many studies have been conducted related to the development of learning media using Articulate Storyline. However, only a few have examined the development of Articulate Storyline learning media that focuses on improving students' critical thinking skills, especially elementary school students, such as those conducted by (Legina & Sari, 2022; Roziqoh, 2021). This research offers innovation by developing interactive features, such as games that train students to think critically. Of course, the creation and selection of learning media must be tailored to the needs of students, because the media will be utilized by students. Therefore, before making learning media, a needs analysis is needed. Based on this, the research question is how the learning media needs at SD Negeri 74 Palembang. The purpose of this research is to analyze the needs of learning media assisted by Articulate Storyline at SD Negeri 74 Palembang as the first step of developing learning media.

Research Method

The research method used is development research with the ADDIE development model, but this research only focuses on the first stage, namely the analysis stage which aims to collect information. Data collection was done through literature studies and field studies. The literature study was conducted by collecting relevant research and sources and analyzing

the curriculum used by the school, while the field study was conducted by interviewing teachers and students of grade VI of SD Negeri 74 Palembang. In addition, the field study was also conducted with a critical thinking skills test to grade VI students. The thinking ability test consisted of five questions with complex multiple choice form. The critical thinking skills test grid is presented in Table 1. below.

Table 1. Critical Thinking Ability Test Grid

Critical Thinking Indicators	Question grid
Providing simple explanations	Given four pictures, learners can analyze which pictures are the result of the Earth rotating on its axis.
Developing fundamental skills	Given some statements, learners can analyze which statement is not an impact of earth rotation.
Drawing conclusions	Given a reading text, learners can summarize the content of the reading text.
Offering advanced explanations	Given a picture, learners can make a true statement based on the picture.
Organizing strategies and tactics	Given a case example of a time difference, learners can decide when is the best time to contact a friend.

This research used Miles and Huberman's analysis technique which includes data reduction, data presentation, and conclusion drawing (Sugiyono, 2021). Data reduction was carried out by conducting literature studies and field research through observation of learning activities, interviews with teachers and students of grade VI SDN 74 Palembang, and critical thinking skills tests. After the data was collected, data presentation was done in the form of narration to interpret the data systematically. Finally, conclusions were made based on data that had been collected from the field and had gone through the data reduction and presentation stages. The following is the formula used to analyze the results of the critical thinking ability test.

$$NP = \frac{R}{SM} \times 100\%$$

Description:
NP = Percentage score
R = Total score obtained
SM = Maximum total score

Source: Selsabila and Pramudiani (2022)

The calculation results in the form of percentages obtained using the formula above are then interpreted into the categories shown in Table 2 below.

Table 2. Percentage categories of critical thinking skills

Percentage (%)	Category
$80 < P \leq 100$	Very High
$60 < P \leq 80$	High
$40 < P \leq 60$	Medium
$20 < P \leq 40$	Low
$0 < P \leq 20$	Very Low

Source: Ridho et al. (2020)

Result and Discussion

Needs analysis as the basis for developing learning media assisted by Articulate Storyline is the first step of activities to develop learning media with the aim of obtaining information, so that researchers can find what products will be developed. Researchers conducted a needs analysis based on the results of interviews, documentation, observations, and literature studies. The analysis carried out in this study consists of several stages, namely

Student Characteristics Analysis

The researcher analyzed the characteristics of grade VI students of SDN 74 Palembang by using interviews, documentation, and observation. The sample involved was 30 students who were representatives of grade VI students consisting of 16 female students and 14 male students. The age range of grade VI students of SDN 74 Palembang is 10 to 12 years, which indicates that they are at the concrete operational stage according to Piaget's theory (Istiqomah & Maemonah, 2022). This shows that their cognitive development is still related to concrete objects that can be perceived through the five senses (Safira et al., 2021). In addition, they are known to have the characteristics of enjoying playing, moving actively, like to work in groups, and tend to like hands-on experiences (Mahfud & Fahrizqi, 2020).

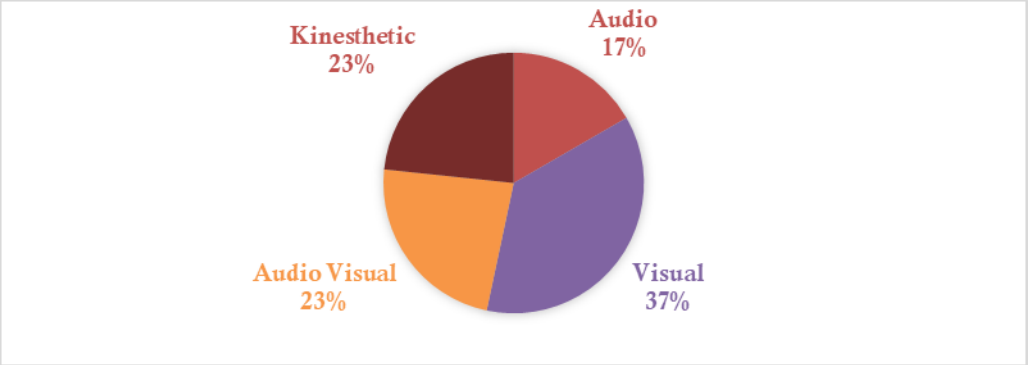

Figure 1. Student Learning Style

Figure 1 shows the results of interviews regarding students' learning styles. From the figure, it is known that grade VI students have varied learning styles, namely 17% of people with audio learning styles, 23% of people with kinesthetic and audio visual learning styles, and 37% of people with visual learning styles. Rahmi and Samsudi (2020) emphasized the importance of teachers' understanding of each student's learning style to facilitate effective knowledge transfer. Dewantara et al. (2020) also voiced that effective, meaningful, and fun learning can be realized when teachers understand students' learning styles. Furthermore, the observation results show that students are less interested and easily bored when participating in the learning process using only the IPAS textbook without any additional learning media. In contrast, when students use learning media such as PowerPoint and videos from YouTube, they show more enthusiasm and interest in the learning process. Therefore, in designing learning media, it is necessary to adjust to the characteristics of diverse students and students' varied learning styles (Fatmawati et al., 2020). This aims to ensure the smooth implementation of learning.

Based on the analysis that has been conducted, the researcher concludes that all students belong to generation Z who tend to be proficient in using technology, especially to support the learning process. This is evidenced by the high enthusiasm of students when using learning media involving technology. In addition, most students also prefer a visual learning style. Therefore, to overcome these two things, learning media is needed, in this case, learning media assisted by Articulate Storyline.

Critical Thinking Ability Analysis

Critical thinking skills are the process of analyzing, thinking seriously and thoroughly about the information received by incorporating rational reasons to produce appropriate actions. This ability can develop gradually. Critical thinking ability in this study is measured through several indicators, namely 1) providing simple explanations; 2) building basic skills; 3) concluding; 4) providing advanced explanations; and organizing strategies and tactics.

Researchers analyzed students' thinking skills through a test containing five items with complex multiple choice types. Each item tested was adjusted to the critical thinking indicators with the subject matter of Earth rotation. The results of the critical thinking ability test are presented in Figure 1 below.

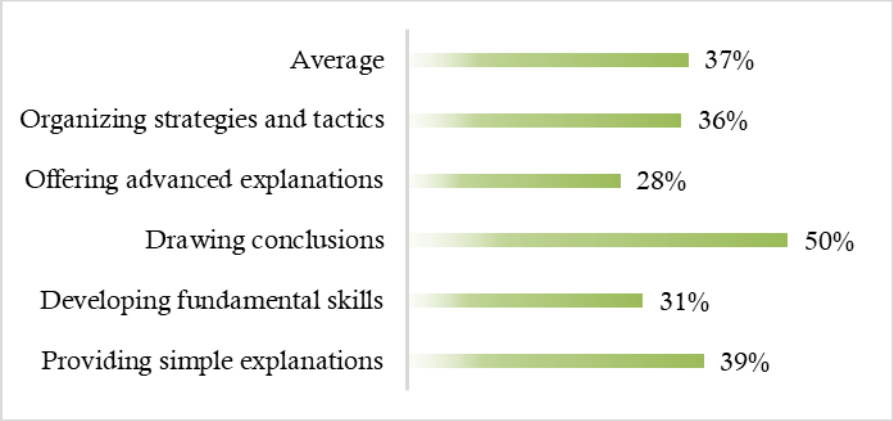

Figure 2. Critical Thinking Ability Test Results

Based on Figure 2, it can be seen that there are percentage variations in each indicator of critical thinking skills. The inference indicator achieved the highest percentage score, which was 50% in the moderate category. Meanwhile, the indicator of giving simple explanations scored 39% in the low category. Furthermore, the indicator of organizing strategies and tactics scored 36% in the low category. The building skills indicator scored 31% in the low category. The last indicator, providing advanced explanations, recorded the lowest percentage, which was 28% in the low category. In conclusion, students' critical thinking skills vary across indicators, with an overall average percentage of 37% in the low category based on comprehensive analysis (Ridho et al., 2020).

Low critical thinking skills can be caused by the varied abilities of students (Alami et al., 2021), as well as learning that is less effective in developing students' interests, talents, and individual potential (Anisa et al., 2021). In addition, the lack of learning that empowers students' ability to think critically is also a factor in students' low critical thinking (Agnafia, 2018; Magdalena et al., 2021). The learning process that does not utilize learning media that stimulates critical thinking also makes it difficult for students to develop this ability. As stated by Ridho et al. (2020) that the use of learning media is crucial in honing students' critical thinking skills. Therefore, it is necessary to develop learning media that can train students' critical thinking skills.

Learning Analysis

SD Negeri 74 Palembang implements the Merdeka Curriculum. In connection with this, a literature study was conducted on the IPAS Class VI book to review the learning outcomes and learning objectives on Earth rotation material. Information regarding learning outcomes and learning objectives on Earth rotation material is presented in Table 3 below.

Table 3. Learning Outcomes and Objectives

Learning Outcomes	Learning Objectives
Students demonstrate how the solar system works and how it relates to the Earth's rotation and revolution.	Students can relate rotational motion to the changes that occur on Earth during the day.

According to the information outlined in Table 3. above, the learning outcomes emphasize a broader understanding of the solar system and the Earth's rotational motion, while the learning objectives are more specific in linking rotational motion with changes

observed on Earth in a shorter period of time, namely one day. Based on this analysis, it can be concluded that Earth rotation material is included in the category of abstract subject matter, which means that it cannot be observed directly by students. This understanding is in line with the views expressed by Ifani et al. (2021) that solar system material including Earth rotation is abstract material. Given that students in grade VI are in the concrete operational stage, they have difficulty in understanding this material. This fact is supported by the results of interviews with teachers which show that students have difficulty understanding abstract material. In addition, Earth rotation material requires a deep understanding, so this material requires students to be able to think critically. Therefore, Earth rotation material is the right choice to train students' critical thinking skills. Thus, to facilitate better student understanding and train students in improving their critical thinking skills, a supportive learning media is needed so that this material can be observed directly by students.

The next step is to analyze the facilities and implementation of learning in the classroom. Based on the results of the interview, SD Negeri 74 Palembang is equipped with 4 units of wifi facilities, 5 units of laptops, 30 units of chromebooks, and 4 units of projectors. However, in learning practices teachers tend to use discussion and lecture methods. The learning media that teachers usually use include the surrounding environment, media available at school such as whiteboards and printed books, and media involving technology such as Microsoft Powerpoint, and videos from YouTube. However, the use of learning media involving technology is still limited. In addition, only a small proportion of students have critical thinking skills, so learning media that can develop students' critical thinking skills is needed. This is in line with the opinion of the grade VI teacher that learning media plays an important role in developing students' critical thinking skills.

Observations show that students tend to feel bored, saturated and less interested when taking part in learning using traditional media such as textbooks, while they show greater enthusiasm when using media involving technology. Therefore, there is a need for learning media that involves technology. Learning media has a very important role in improving student learning outcomes (Agustira & Rahmi, 2022; Harlinda et al., 2023), can strengthen the creativity and psychomotor skills of elementary school students (Masfufah & Nurdyansyah, 2023). Learning becomes more interesting with the presence of media, so that students can easily understand the material presented. In addition, the use of media in learning activities is expected to form a stimulus that supports the achievement of learning objectives (Rasvani & Wulandari, 2021; Wahyuningtyas & Sulasmono, 2020). Arwanda et al. (2020) suggest that to create 4C competencies, teachers must use learning media that involve technology. Therefore, learning media involving technology can be an effective solution to improve the quality of learning and student learning outcomes and can create 4C competencies including critical thinking skills.

Based on the interviews with teachers and students, it was revealed that they have never used Articulate Storyline-assisted learning media. However, they stated that they need the learning media. Based on some analysis that has been done before, it can be concluded that the development of learning media assisted by Articulate Storyline is needed. Therefore, researchers will develop learning media assisted by Articulate Storyline named "ROMI" to improve students' critical thinking skills, especially in understanding Earth rotation material for grade VI SD. ROMI stands for "Earth Rotation". The learning media developed is expected to help students understand abstract concepts about Earth's rotation and also to develop their critical thinking skills in the learning process.

Researchers chose the Articulate Storyline application because of some of its advantages that have been described by several experts. Alperi dkk. (2021) explained that Articulate Storyline is used as a learning tool that presents material in an interactive and interesting way. In addition, Legina dan Sari (2022) added that Ariculate Storyline is a learning media that is easily accessible. This is because Articulate Storyline media can be converted into links, allowing its use in various places and times. Articulate Storyline is very suitable for use in learning activities because it provides an interactive menu that allows students to explore further information (Selsabila & Pramudiani, 2022).

Articulate Storyline-assisted learning media has been proven to improve students' cognitive abilities. This is known from research conducted by Sindu et al. in 2020. In addition, this media is also proven to improve students' 4C competencies (Arwanda et al., 2020), improve critical thinking skills (Heliawati et al., 2022; S. Wahyuni et al., 2022), and the speaking skills of elementary school children (Yolanda et al., 2022). Based on these studies, it is highly recommended to use Articulate Storyline-assisted learning media in learning activities. This is because the media is effective for improving critical thinking skills.

Conclusion

Based on the needs analysis, it was found that it is necessary to develop learning media in accordance with the results of the analysis, namely creating learning media assisted by Articulate Storyline to improve students' critical thinking skills. The learning media to be developed is called ROMI. This media allows students to practice their critical thinking skills anytime and anywhere, because it is equipped with various features such as videos, reading texts, and games. Thus, this study not only identifies the need for learning media but also presents innovation in the form of effective media to improve students' critical thinking skills, which is an important competency in 21st century education. This study is expected to make a meaningful contribution to the development of education that is adaptive and responsive to the needs of students in this digital era. Practical implications for educators include the use of ROMI to make the teaching and learning process more interactive and interesting, increase student engagement, and present subject matter more dynamically.

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