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Needs Analysis of IPAS Learning Media Development Based on Smart Apps Creator in Elementary Schools in Rural Areas of Indonesia

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Abstract
Learning media is one of the factors that facilitate students in learning IPAS. The purpose of this study was to collect information on initial needs in order to design a draft of IPAS learning media based on Smart Apps Creator. The type of research is qualitative. The method of data collection through questionnaires with research subjects are all class V students and teachers of elementary schools in Purwantoro sub-district. Indicators of Smart Apps Creator (SAC) desktop application selection and material analysis of getting acquainted with our earth. The results of the study were: 91.25% of the school environment has an unstable internet signal, 100% of elementary schools have Wifi facilities, 100% of students have smartphones, 86.76% of students interact with smartphones more than 4 hours per day, 85.60% of IPAS materials do not exist in the school environment, such as: rivers, volcanoes, seas, straits; 87.45% of materials cannot be reached by learning outside the classroom. Based on the results of the analysis, it can be concluded that there is a need for the development of learning media for IPAS class V with the Android-based SAC desktop application with the material of let's get to know our earth for class V elementary schools in Purwantoro Sub-district.
Keywords: Learning media, SAC, IPAS, Educational Technology.

Abstrak
Media pembelajaran merupakan salah satu faktor yang memudahkan siswa dalam mempelajari Ilmu Pengetahuan Alam dan Sosial (IPAS). Tujuan penelitian ini adalah untuk mengumpulkan informasi mengenai kebutuhan awal dalam rangka merancang draft media pembelajaran IPAS berbasis Smart Apps Creator. Jenis penelitian ini adalah kualitatif. Metode pengumpulan data dilakukan melalui kuesioner dengan subjek penelitian adalah seluruh siswa kelas V dan guru sekolah dasar di Kecamatan Purwantoro. Indikator pemilihan aplikasi desktop Smart Apps Creator (SAC) dan analisis materi mengenal bumi kita. Hasil penelitian menunjukkan: 91,25% lingkungan sekolah memiliki sinyal internet yang tidak stabil, 100% sekolah dasar memiliki fasilitas Wi-Fi, 100% siswa memiliki smartphone, 86,76% siswa berinteraksi dengan smartphone lebih dari 4 jam per hari, 85,60% materi IPAS tidak ada di lingkungan sekolah, seperti: sungai, gunung berapi, laut, selat; 87,45% materi tidak dapat dijangkau dengan pembelajaran di luar kelas. Berdasarkan hasil analisis, dapat disimpulkan bahwa terdapat kebutuhan pengembangan media pembelajaran IPAS kelas V dengan aplikasi desktop SAC berbasis Android dengan materi mengenal bumi kita untuk siswa kelas V SD di Kecamatan Purwantoro.
Kata Kunci: Media pembelajaran, SAC, IPAS, Teknologi Pendidikan.

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INTRODUCTION

The ability to organize material and present it by utilizing learning media is one of the competencies that teachers need to have. Each teacher has their own preferences in using interactive learning media, such as IPAS learning media. Natural and social science (IPAS) is a combination of two subjects, namely: natural science (IPA) and social science (IPS). The characteristics of science, explained by Suhelayanti, et al. (2023) is one of the subjects that involves almost all the sensory organs, the entire thought process, and various muscle movements. Learning science often involves scientific activities (seminars, conferences or symposiums), literature studies, visiting an object, formulating hypotheses, and others. The activeness of students' science learning can be done by focusing on two aspects, namely active physical action (*hands on*), and active thinking (*minds on*). If only using physically is not enough, but it takes learning science by habituation of thinking experiences. (Gao et al., 2021)

Aulia & Wandini (2023) explains that the characteristics of Social Studies (IPS) SD/ MI is one of the subjects that examines a set of events, facts, concepts, and generalizations related to social issues. Social studies is designed to develop knowledge, understanding, and ability to analyze the social conditions of society in entering a dynamic society.

IPAS learning with the material Let's Get Acquainted with Our Earth, the skills trained from this learning are explained by Ghaniem, *et al.*, (2021: 126), including: 1) Making observations, 2) Listening, 3) Identifying the results of observations, 4) Putting thoughts / ideas in writing, 5) Reasoning the information obtained, 6) Putting information / thoughts / ideas in the form of pictures, 7) Communicating (retelling experiences, listening to peers' stories), and 8) Teamwork.

The scope of the material is explained by Ghaniem, *et al.*, (2021: 125) students will learn about the structure of the Earth's surface and try to find out how the structure of the Earth's surface can change over time due to human actions or due to natural conditions. The activity starts with an observation of the conditions in the environment around the school. Learners will be invited to observe and identify natural reliefs in the surrounding environment. After having an understanding of the context of natural reliefs, learners will be invited to learn more about changes in the Earth's structure and environmental changes over time. Learners will be given the opportunity to explore and trace the development of the area where they live to local residents about the condition of the area in the past. Through interviews and guided reflection, learners will have an understanding of natural changes. This statement emphasizes that the IPAS materials to be taught need to be selected, created, and determined by the use of learning media, so that the presentation can build specialized knowledge.

Hidayati, E. W. (2018) explains that media is any tool, both *hardware* and *software* as a tool for communication and providing clarity of information. Kurniati, M. (2017: 11) explains that media *are channels of communication* that can provide information to message recipients. Meanwhile, according to Rachmawati, Y. (2015: 13) states that the media is a link that transmits messages from the source to the recipient of the message. More specifically, Yaumi, M. (2018: 41) explains that media in the teaching-learning process tends to be more defined as graphic, photographic, or electronic tools to be able to understand, manage, and reorganize visual or verbal information. Ramadani (2023) explains that learning media is a means of delivering learning messages in relation to the direct learning model, namely through the way the teacher acts as an information provider and in this case the teacher must use a variety of appropriate media. Harsiwi (2020) explains that learning media is a means of delivering learning messages where the teacher acts as a conveyor of information and in this case the teacher should use a variety of appropriate teaching media. Pohan (2018) explains that learning media is one of the most important learning components

as a bridge in delivering material. Interactive learning media is one form of technology-based learning media. Learning media is a crucial aspect that teachers need to consider. Iswara et al., (2023) explains that elementary school teachers need to innovate in teaching by developing learning media that not only focuses on lesson content but also on students' psychological aspects. One of the interactive learning media that does not require the internet is the Smart Apps Creator (SAC) desktop application.

Almukarramah, et al, (2023) that Smart App Creator (SAC) is a desktop application, which allows the creation of Android and iOS mobile applications without the need for programming knowledge. Smart Apps Creator (SAC) is an application used to develop Android-based learning media. It's a digital interactive tool that enables the creation of multimedia content installable on Android smartphones. (Nasrullah et al., 2022) This application can generate HTML and EXE files, and can be saved in Ahl or Apk file formats that can be run on laptops and Android phones. The advantages include ease of use by students, can be downloaded and run offline without the need for a stable internet connection and the appearance of the SAC is almost the same as the appearance of the ebook but more attractive in terms of presentation by training visual communication methods. In line with Khoirudin, *et al.* (2021) explained that the display presented by SAC is a combination of e-book and power point. The combination of e-book and power point provides an opportunity for the creation of electronic modules. Thus, a simple display makes it easy for students to use and learn the material in the media. In its development, media using SAC software is used to become learning media or mobile applications for certain lessons, such as electronic modules (E-modules) that are interactive based on androit and iOS without coding. Zainil, *et al.*, (2019) explained that the advantages of SAC, namely: 1) Easy to use the SAC application, 2) Able to create android and iOS-based learning media without coding, 3) Students will not get bored easily because of interactive learning media, 4) Students can better understand and remember the material presented because the learning media is interactive and interesting, 5) Can be freely created according to needs, 6) The application file size is not too large (lightweight), 7) This application does not take up a lot of RAM, 8) The features available are sufficient to create a learning media, 9) Teachers are facilitated in making animations, 10) The application display is simple and comfortable to use, and 11) Can be saved with results for andoid, iOS, Exe, HTML5 devices.

SAC-based learning media has various benefits, especially in facilitating interaction between teachers and students. This makes the learning media play an important role in teaching and learning activities because the media will be able to help students in the learning process and it is hoped that students understand the material more easily and learning feels fun (Nurdyansyah, 2017). SAC-based learning media that will be compiled need to pay attention to the characteristics as media. Limbong *et al.*, (2022) a learning media can be said to be good and interesting if there are characteristics, namely: *Self Instruction*, *Self Contained, Stand Alone, Adaptive, User Friendly*. According to Puspitasari *et al.*, (2022) explained that SAC (*Smart Apps Creator*) media is fun, easy to understand, interesting, practical, and not boring. The level of learning completeness reached 91.4%. Students become accustomed to using technology 4.0 in learning, so it is expected to develop communicative and collaborative in learning.

Based on the description above, this research can formulate the problem formulation, namely: how is the need for the development of *Smart Apps Creator-based* IPAS learning media in elementary schools in Purwantoro sub-district? The purpose of this research is to collect initial needs information in order to develop IPAS learning media based on *Smart Apps Creator (SAC)*.

METHODS

The type of research used is qualitative. This type of qualitative research is a way of research work that focuses on the deepening aspects of the data to obtain the quality of the research conducted. The qualitative approach uses descriptive words or sentences, starting with data collection to interpreting and reporting research results (Ibrahim, 2018). Research data collection was conducted in March-October 2024. The research subjects in this study were all class V students and primary school teachers in Purwantoro sub-district. The data collection technique uses a questionnaire that has been tested for validity and reliability. The validity test in this study uses the Pearson coefficient value using the Pearson Product Moment formula, after which it is tested using the t test and then the interpretation and correlation index are seen. Validation is a measurement to determine the accuracy and accuracy of a measuring instrument (Purnomo, 2018) Measurement of data reliability is carried out after measuring the validity of the data using the Cronbach's alpa method

This research indicator uses a questionnaire containing selection questions in the form of a Smart Apps Creator (SAC) desktop application and analysis of material acquainted with our earth to support IPAS learning media In qualitative analysis, the research variables are arranged descriptively by describing the data in the form of percentages Analysis of the questionnaire using the percentage formula, as follows :

$$Prosentase = \frac{Multiple\ Subject\ Answers}{Many\ Subjects}\ x\ 100\%$$

RESULTS AND DISCUSSION

Research Results

The research data was collected through a questionnaire questionnaire with two indicators, namely the selection indicator in the form of Smart Apps Creator (SAC) desktop application and the analysis of material acquainted with our earth to support IPAS learning media. The results of the questionnaire data analysis conducted on all class V students in elementary schools in Purwantoro District showed that 91.25% of students reported experiencing problems with internet stability even though 100% of schools had WI-Fi facilities. Then 100% of all students have a Smartphone with an average usage time of more than 4 hours / day as much as 86.76%. In addition, there is a gap between the availability of IPAS learning materials in the school environment, namely as much as 85.60% of IPAS materials do not yet exist in the school environment, and 87.45% of materials cannot be reached by learning outside the classroom. Based on these data, it can be interpreted that there needs to be an effort to utilize the SAC desktop application and develop learning materials that are more comprehensive and easily accessible through digital devices.

Discussion

Based on the research results, it can be interpreted that SAC learning media needs to be developed. This is reinforced from the questionnaire results that there is a gap between the availability of technology infrastructure in schools and the quality of learning. Although 100% of elementary schools have WiFi and students have smartphones, the unstable internet signal is an obstacle mentioned that 91.25% of the school environment has an unstable internet signal. On the other hand, the intensity of smartphone use by students shows great potential to utilize technology in the learning process. This is supported by research data which states that 86.76% of students interact with smartphones more than 4 hours per day. In addition, IPAS materials that

are concrete in nature such as natural phenomena are difficult to reach through learning outside the classroom, as in the research data there are 85.60% of IPAS materials that do not exist in the school environment, such as: river flow, volcanoes, seas, straits; and a number of 87.45% of materials cannot be reached by learning outside the classroom.

The Android-based SAC desktop application with the material "Let's Get to Know Our Earth" can be the right solution to overcome these challenges. This application allows students to learn IPAS materials independently and interactively, even without a stable internet connection. With features such as simulations, animations, and interactive quizzes, learners can more easily understand abstract concepts such as the water cycle, the process of volcano formation, and soil types. In line with the opinion of Tasyakuri et al. (2022) that interactive and interesting learning media can increase students' learning motivation and facilitate understanding of complex concepts.

Mobile-based applications such as SAC can provide flexibility for students to learn anytime and anywhere (Rianti *et al.*, 2022; and Nursalimah, 2024). However, in its application, it is necessary to maximize the potential of the SAC by integrating it well with classroom learning. Teachers can utilize the SAC as an additional learning medium, independent assignment, or group project. Factors that need to be considered to maximize the potential of SAC according to (Sirait and Apriyani, 2024), namely: 1) Utilization of Collaboration Features, SAC applications can be equipped with collaboration features that allow students to discuss, share work results, and learn together, 2) Integration with the Curriculum, the material in the SAC needs to be arranged in line with the applicable curriculum so that learning becomes more directed and systematic, 3) Periodic Evaluation, it is necessary to evaluate periodically to measure the effectiveness of the use of SAC and make improvements if necessary. Thus, the utilization of technology in IPAS learning can be an innovative solution to improve the quality of education in Indonesia. Puspitasari et al. (2022) explained that SAC (Smart Apps Creator) media is designed to be fun, easy to understand, interesting, practical, and not boring. Therefore, the level of learning completeness reached 91.4% and made students accustomed to using technology 4.0 in learning. The development of learning media is expected to develop communicative and collaborative in learning students.

Based on the results of the analysis, it can be concluded that there is a need for the development of IPAS learning media for class V with the Android-based SAC desktop application with the material of let's get to know our earth for class V elementary schools in Purwantoro sub-district. However, there needs to be a joint effort from various parties to overcome the existing challenges and ensure that technology can be optimally utilized in supporting the teaching and learning process.

CONCLUSION

Based on the results of the research analysis above, it can be concluded that the application of IPAS learning media based on *Smart Apps Creator* in elementary schools in Purwantoro sub-district has a significant influence. This is evidenced by the presence of 91.25% of the school environment has an unstable internet signal, 100% of elementary schools have Wifi facilities, 100% of students have Smartphones, 86.76% of students interact with Smartphones more than 4 hours per day, 85.60% of IPAS material does not yet exist in the school environment, such as: river flow, volcanoes, seas, straits; 87.45% of material cannot be reached by learning outside the classroom. Thus, it can be interpreted that there is a need for the development of IPAS learning media for class V with the Android-based SAC desktop application with the material of let's get to know our earth for class V elementary schools in Purwantoro Sub-district. This SAC-based media can also be implemented by teachers as additional learning media, independent assignments, or group projects for students.

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