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Learning Media Needs Analysis of Science Learning and Environment through Android for Primary School Pupils

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Abstract

This research focuses on analysing the needs of learning media such as android as a learning media for primary school pupils and also as a means of preparing before learning. The purpose of this research was to determine the need for learning media in preparing for learning using Android for primary school pupil of 90 Pinrang. The method was used in this research was a qualitative method using a descriptive approach. The data collection technique used in this research was to use observation guidelines, documentation and structured interview techniques with research instruments in the form of questions to be asked to the informants. Data analysis in this research was to reduce the existing data into more specific data to be presented descriptively. The initial findings found that the need for learning media using Android as a means to prepare for learning at home is needed for teachers so that primary school pupils have a mental readiness and also initial knowledge to learn. In addition, the need for animative, informative, educative and interactive learning media using android as a learning tool in the classroom on science learning and environment material is also needed to support the learning process in the school.

Abstract

Penelitian ini berfokus pada analisis kebutuhan media pembelajaran berupa *android* sebagai media pembelajaran untuk murid sekolah dasar dan juga sebagai sarana dalam melakukan persiapan sebelum belajar. Tujuan dalam penelitian ini adalah untuk mengetahui kebutuhan media pembelajaran dalam melakukan persiapan belajar dengan menggunakan *android* untuk murid sekolah dasar di SDN 90 Pinrang. Metode yang digunakan dalam penelitian ini adalah metode kualitatif dengan menggunakan pendekatan deskriptif. Teknik pengambilan data yang digunakan dalam penelitian ini adalah menggunakan pedoman observasi, dokumentasi dan teknik wawancara terstruktur dengan instrumen penelitian berupa pertanyaan yang akan diajukan kepada narasumber. Analisis data dalam penelitian ini adalah dengan cara mereduksi data-data yang ada ke dalam data yang lebih spesifik untuk disajikan secara deskriptif. Hasil temuan awal yang didapatkan bahwa kebutuhan media pembelajaran menggunakan *android* sebagai sarana untuk melakukan persiapan belajar di rumah dibutuhkan bagi guru agar murid sekolah dasar mempunyai kesiapan mental dan juga pengetahuan awal untuk belajar. Selain itu, kebetuhan media pembelajaran yang bersifat animatif, informatif, edukatif dan juga interaktif menggunakan *android* sebagai sarana belajar di dalam kelas pada materi IPA dan Lingkungan juga dibutuhkan untuk mendukung proses pembelajaran di sekolah.

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A. Introduction

Learning in education cannot be separated from the process that conducts in the classroom, utilization of learning tools such as the use of media, methods, and learning models that have been designing in the lesson plan will provide readiness for teachers to start learning. The phenomenon of learning is not only seen in terms of knowledge that departs from theory but also the learning theory is expected to be able to give a deep impression so that it can be implemented in the surrounding environment from the student. Moreover, the discussion about formal education is certainly talking about the curriculum used, and currently, the role of education in Indonesia is still lacking in terms of implementing the knowledge learned for students at school. If we analyze our education system with the latest Indonesian curriculum 2013 which has gone through so many revisions that are following the current era, but there are still many cases of learning that are not following the learning objectives based on the curriculum 2013, therefore in this case, it is not only teachers who must prepare the lesson plan, but the teacher must also be able to provide direction to the students before the teacher begins the learning process in the classroom (Yamin & Karmila, 2020).

The use of learning media by utilizing smartphones as mobile devices with the android operating system allows the users to be pampered with various applications that can support society activities, both adults, children, and also for students in using the smartphone as a small library to be able to access various lesson materials in anytime and anywhere without the limitations of space and time. The use of learning media is certainly necessary as a tool in learning which is expected to be able to support the activities of teachers in explaining the subject matter. In Addition, that the learning media used are expected to attract students' interest to be able to take lessons well because learning media should make it easier for teachers to deliver learning materials, and also for students that they are easier to understand the subject matter faster by using the learning media compared to the student who does not use learning media.

Preparation in learning obviously is needed to provide initial information to students about the material to be studied, so that if the learning has been prepared by teachers and students, then these two learning components will be able to work well together in the teaching and learning process in the classroom. According to Shanmugapriya & Tamilarasia (2010) state that the learning process is based on awareness to learn so that before students come to the classroom to learn, students must be able to read the outline of the material to be taught by the teacher with the help of other students to be able to learn together in preparing the learning process.

To be able to facilitate students in the learning preparation process, of course, we need a tool that can facilitate the process of exchanging information and communication such as mobile phones with voice technology, but in terms of learning, an android-based application development design is needed to make it easier for students to interact with each other in preparing the subject matter. Life in the technological era cannot be separated from the ease of communication so that it can also be used to make it easier for students to learn by using adequate learning applications (Shanmugapriya & Tamilarasia, 2010).

Today's technology is more specific to a person's social life, not only ordinary people and workers but also for students from various levels of education using technology to make it easier for them to learn. In addition, to facilitating the learning process, the use of technology is also considered effective because it can see visually in the form of images and videos that are running and this is certainly very well used as a means of learning (Nearbert et al, 2014).

According to Hanafi & Samsuddin (2012) in their research on learning through android that mobile learning is a form of digital learning which can be applied for teaching and learning purposes where some educational experts view it as a subset of e-learning but with a subtle difference content are delivered into mobile devices rather than the ubiquitous desktop personal computers. Learning that is integrated with android is also part of the digital learning process that can be applied in the teaching and learning process, this is seen as a learning process that promotes collaboration and mutual assistance with mobile learning rather than just using a computer for individual needs (Hanafi & Samsuddin, 2012). So, it is undeniable that smartphone-based technology has a cognitive impact on students in learning.

Specifically, the use of technology in certain subject matter also supports the learning process. In the context of formal schools, the use of android technology is helpful to attract the attention of students. for instance, in environmental material, the use of videos displayed by smartphones is very useful for students in understanding the knowledge about the environment, therefore this is important to be developed to provide more affordable knowledge in protecting the environment and especially for those who are still within the scope of primary school pupil who is still able to form

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patterns thoughts and early habits in protecting the environment (Hairida, 2017). Apart from the need as a media of communication and interaction, the use of smartphones in learning can also be associated with giving evaluation tasks and also student's preparation before starting the next learning, so that if these components support each other, learning outcomes will not only reach the theoretical stage but also in practice in the community (Temsah & Dalal, 2018).

Forming early awareness for adults is difficult because of the lack of initial knowledge of something that is considered wrong by most people, so that the issue of early awareness is highly recommended to be implemented and applied to primary school pupils. In addition, the introduction of technology for primary school pupils is considered very early, but the impact of the technology outweighs the negative impact given, in essence, that all tools have advantages and disadvantages in their use (Ates, 2013).

Seeing this phenomenon, it is necessary to analyze the need for the development of learning media for primary school pupils in early education regarding the environment as a current issue and will become an issue in the future. The use of android will be deemed sufficient if parents and or guardians of students participate in providing education in preparing their children to study at school (Eristi et al, 2012). So the procedure of this research is referring to the understanding of theory from home and practical activities at school so that to produce the appropriate output, a balance between theory and practice is needed in the learning needs analysis that will provide learning preparation for primary school pupils. In this research, the problem formulation is to describe the learning media needs analysis in preparation for learning to use android for students at SDN 90 Pinrang, and the purpose of this research is to determine learning media needs analysis in preparation for learning by using android for pupils at SDN 90 Pinrang.

The factors of student achievement include internal factors and external factors. Internal factors are the elements that come from within the individual, while external factors are the component that comes from outside the individual. External factors are crucial in learning because failure and success in learning are very dependent on oneself. The ability of students to create a learning process in themselves, including the supporting factors of student achievement, while the learning process occurs when students have good learning readiness. According to Syaputra (2016) that there are still many students who come to school without any readiness, so that in the school these students only play, disturb their friends who are studying, or just sit quietly without paying attention when the teacher explains and do not want to do the assignments given by the teacher.

In line with this, if students have learning readiness, it means that students must already know what will be studied, what material will be delivered by the teacher, and what tools are needed in these learning activities. Learning is a readiness that exists in students, and readiness means that the students are mature and already knows what is needed to receive lesson assignments, or in other words that the students will increase their learning speed either at home or at school if there is a readiness to learn (Nur, 2019).

To observe something, of course, requires attention. Students must pay attention when the teacher explains and not look out or play if they want to learn. Teachers can certainly think of various ways to attract students' attention with new and diverse stimuli. But the most important thing is to cultivate an attitude of attention to students so that they can pay attention, even though other things attract their focus (Vovi, 2017), and through previous research by (Darso, 2011) that the learning process is a psychic activity about learning materials. Learning activities carried out by students are a process of learning something because learning is the main activity, besides that learning is the key in the formation of student competencies, because student participants can learn if everything related to the learning process has readiness from each student.

With the readiness to learn that students have, they will be more prepared to study and have good quality and character in education. Opposite with this, that several aspects cause students to not have readiness in learning, they are: 1) Physical, mental and emotional conditions, 2) Needs, motives, and goals, and 3) Other skills, knowledge, and understanding that have been learned. A healthy physical condition, good mental (emotional) and learning needs that support it will result in a learning process and learning objectives that can run well where readiness affects student learning outcomes, and if student learning outcomes are not achieved properly, then the goal learning cannot be achieved properly as well (Rasyid, dkk, 2017).

There are many ways to become a creative teacher in the learning process; one of those is by utilizing learning media in the learning process. The use of learning media is an inseparable part and is an integration of the learning methods used. The position of the learning media has an important role because it can help the student in the learning process. The use of learning media can improve

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student achievement and motivation and the presence of learning media will also make the learning process more interesting, for example in terms of display combined with several pictures or animations. The attractiveness of the physical appearance greatly affects the learning process, the more attractive the media display, the more motivated students are to learn so that it affects student learning outcomes (Resiani et al, 2015).

Technology is currently developing very rapidly, especially mobile technology. The use of mobile phones is not a secondary need anymore but is a primary need that must be owned by every individual. Not only adults and teenagers who use cellphones, but also children can use it. The role of parents is needed to anticipate the use of cellphones so that they are not used excessively, considering that this tool can issue whatever information we want if it is connected to internet facilities. Most students use cellphone to use them to play "games" (Ependi & Nyimas, 2015). However, despite the cellphone is mostly use for play game either online and offline game, but the teacher and the expert can develop an application that is available to use as a learning media and also it contains some learning game as a means to make them enjoy in studying and also to facilitate the student to learn at school or in their house.

In learning it is required learning media so that ongoing learning can run well and meet the objectives of the learning. This learning media is called a stimulus which will later get a response from students. One of the technology-based learning models that take advantage of current technological developments is in the form of android-based m-learning which makes it easier for teachers to teach and students to learn independently. This application-based learning strategy is very important and makes it easier for students to learn independently so that teachers no longer explain much about the material to be explained because students have gained initial knowledge that makes them understand the material provided. This application-based technology facilitates students to learn to be more effective, efficient, and also interesting for students. The position of learning media is very crucial because it can help the student in the learning process where learning media are categorized as tools, methods, and techniques used as communication intermediaries between a teacher and students to make communication and interaction between them more effective in the learning process at school (Arifuddin & Arsad, 2019).

One of the learning media that can be utilized to explain the subject matter in detail and can be used repeatedly by students is technology-based learning media using smartphones. The development of operating systems ranging from gadgets, tablets, personal computers, and smartphones can support students in the learning process. However, at this time most students only use it for social media and very few of them use the device for learning activities (Rasyid et al, 2017). To be able to attract the attention of students in the learning process, so that we need to develop technology-based learning media that using an android smartphone as the learning media to be used in the classroom. (Murtiati & Laurent, 2013).

The role of education in understanding, protecting, and solving environmental problems has been universally recognized since 1970 (Shobeiri et al, 2006). Since 2000, researchers have considered the use of environmental education in schools, colleges, and universities (Palmberg & Kuru, 2000). Newhouse (1990) suggests that attitudes and feelings towards other people or objects are important factors in influencing human behavior. The researcher then examined students' knowledge and attitudes towards the environment and methods for teaching environmental awareness (Howe & Disinger, 1988). The relationship between attitudes towards the environment and human behavior, however, is well established and rarely explored (Ma & Bateson, 1999).

According to Hafiz, (2008) that the function of the smartphone is not only used as a telecommunications device, but the use of a smartphone is also useful as a learning media for primary school pupils. The function of the smartphone as a learning media has a role to provide a sense of interest to primary school pupils due to the features that are identical to the age of children that can make them interested in learning such as animated features and interactive images in the learning process. Sugiyanto et al, (2018) also provide information that the use of smartphones as learning media for primary school pupils with science Learning (IPA) material is very necessary by looking at the demands of 21st century education and also in the 4.0 revolution era. Learning on science learning (IPA) materials aims to encourage and stimulate students' thinking skills to be able to maintain the environment, both animal life, and plant life so that the use of interactive learning media will make students more active due to the use of smartphones learning media and this learning media is also assessed as an animative media that is able to attract primary school pupils' interest in learning.

According to Hadi & Dwijananti (2015), Chu (2014) and Adi et al, (2016) continued that the development of technology such as android in the field of education provides encouragement for

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students to learn anytime and anywhere without any limitations of space and time. He continued, that learning carried out must provide benefits and comfort by applying smartphone technology for learning activities such as science learning which of course provide positive benefits for high school students or primary school pupils. It is also relate to the research of Yamin (2019) that in the learning process, the teacher should be designed an interesting teaching process by providing the elements of learning such as learning media that can support the teacher to facilitate their student to study, in addition, he states also that to achieve the learning goal, the teacher should know how to do collaborate between the learning process and the existence of learning media, learning model, and learning method/approach that these thing has the role to increase the quality of learning towards the student.

Referring to Mabruri et al, (2019) the use of mobile learning in primary schools is not without reason. Based on a survey conducted by APJII (Association of Indonesian Internet Service Providers) in 2006, it is proven that internet users in Indonesia are very abundant. The survey involved 132.7 million Indonesian users. As a result, they have to use the internet only for fun, for example, social media 50.7% of them or 67.2 million users use it via mobile phones and computers. Meanwhile, users who only use mobile devices are around 47.6% or around 63.1 million, and those who only use computers are 1.7% or 2.2 million. He continued that the results of this survey showed that the majority of Indonesians access the internet using mobile devices. In terms of age, 6.3% of users are students, around 8.3 million students are familiar with using the internet through mobile devices. The reason for using mobile devices is more practical when compared to PC devices. In line with Muiz (2014) that the level of development of mobile devices is very high, the level of use is also relatively easy, and the price of devices is increasingly affordable, compared to personal computer devices. Although m-learning is currently still in the early stages of development and is relatively not well established, mobile learning media is expected to become quite rapid in the near future.

The need for developing learning media in the form of android for students at SDN 90 Pinrang on science material with the subject of the environment is based on the experience of the teacher in teaching science material. This learning, of course, requires learning media that allows students in the class to be interested in the learning materials taught by the teacher, besides the need for accessible learning media that will be more effectively used and make students' interest in learning even better. The analysis of learning media needs for primary school pupils students is certainly done by analyzing the needs for the characteristics of learning media that are suitable to use for primary school pupils so that the use of smartphones with the android operating system is considered appropriate for students of SDN 90 Pinrang with the aim of being a learning media in preparing learning which can be guided by parents/guardians of students and also the use of smartphones with the android operating system is used in learning in the classroom which is guided directly by the teacher.

B. Method

This research aims to determine the need for useful learning media to be used in preparation before learning for primary school pupils and also as learning media to be used in the classroom, so this research uses qualitative research methods with a descriptive approach. According to Sugiyono (2015) that a qualitative approach method is an approach in research based on the philosophy of post positivism whose function is to conduct research on the condition of natural objects where the researcher is the key of the instrument.

This research was conducted at primary school namely SDN 90 Pinrang, South Sulawesi in September 2020. The data sources of this qualitative research were obtained through observation guidelines, documentation, and also interview techniques with the fourth-grade teacher at SDN 90 Pinrang which were conducted face-to-face in Pinrang town. The data collection technique used in this research is to conduct observation techniques to see the learning situation carried out by the teacher, while the documentation process is carried out to observe the use of learning media provided by the teacher in teaching for certain materials, and also conduct the structured interview which aim to find out deeper information about the situation of the learning process and also explore information about the use of limited learning media and the need for learning media for primary school pupils in preparing for learning and using these learning media in the teaching and learning process in the classroom. In addition, in the interview process, the researcher also asked about problems in learning on environmental topics that had a relationship with the learning media needed in learning science and the environment. This is also in line with the methods and results of research conducted by Zain & Pratiwi (2021) that the use of data analysis techniques using observation, documentation, and interview guidelines provides an initial description of the needs of learning media

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for primary school pupils in carrying out the learning process in the classroom.

Data analysis carried out in this research is by reducing the data that has been obtained from the results of observations, documentation, and interviews. The process of reducing the data carried out is taking basic data that is considered important from other data that researchers get from the observation, documentation, and interviews that have been carried out so that all data in the research instrument obtained will be analyzed in order to obtain the specific data. After the data obtained from this research, it will be displayed descriptively through the presentation of data so that in this research conclusions will be obtained about the needs of learning media.

C. Result and Discussion

The results of learning media needs analysis for teachers and primary school pupils based on the results of observations, documentation and also from the results of interviews conducted indicate that teachers in the learning process need learning media that are more directing students in the classroom to be more active in the learning process so that in this is a learning media that is animative, informative, educative and also interactive as in the use of android which can be used by teachers and students as learning media to prepare for learning and also learning media used during the teaching and learning process in the classroom.

Figure 1
|Learning Situations and Conditions in the Classroom Using Modest Learning Media

Table 1 Results of Structured Interview for Science and Environment Learning Media Needs Analysis

No	Question	Answer (Question Analysis)
1.	What do you think about learning media for science on environmental materials at this school	The teacher explains the role of learning media for primary school pupils during the learning process so that learning feels real and also attracts students' interest during in the learning process
2.	Is the media important in learning science on environmental material in this school	The teacher explains the importance of learning media for science and environment material because it supports students to learn and understand the material clearly
3.	How is the science learning process using media and those not using learning media on science and environment materials	The teacher expresses the differences in the situation of the learning process by using learning media and not using learning media where with the existence of learning media, students can be more actively involved in the learning process
4.	What kind of learning media are good and suitable for students to use in this school for science and environment materials	The teacher expresses learning media that are in accordance with the children's character where the learning media provides pictures, moving animations, and videos that can attract their attention while learning.
5.	Can the use of android as a science learning media on environmental materials be used in this school?	The teacher expressed his experience in using smartphones with the android operating system to show animated videos on YouTube as a learning media and the students seemed to enjoy observing the animations contained in the video.
6.	How important is learning the environment by using learning media such as android	The teacher explains the role and importance of digital-based learning media such as applications in the android operating system to help students learn and attract their interest because of the video and animation support contained in the learning media.
7.	After the learning media is designed for the learning process on environmental materials, what features are important in learning media using android	The teacher expresses several features in the application of learning media such as puzzles and or image features whose purpose is to match the names and body parts of plants, human and animal organs in science and environment materials that can be done by students.
8.	Is it important to prepare for learning at home via android before students learn in class	The teacher explains that learning preparation is very important by utilizing digital learning media such as smartphones and this learning preparation can be supervised by parents/guardians at home to provide them with readiness to learn before studying in the classroom
9.	Environmental materials in learning must use a lot of theory or practice	The teacher replied that at the beginning of learning, students needed theory but in the process of applying knowledge to make it more understood by students, the practice was also very necessary so that students were accustomed to applying their knowledge from an early age.

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No	Question	Answer (Question Analysis)
10.	In environmental material, what kind of goals are expected by the teacher to students after learn the environmental material using android	The teacher hopes that with the help of android-based learning media, students can understand the content of the learning material and can also apply the theory learned through the android in everyday life.
11.	For the subject matter about the environment for primary school pupils, do the preparation of learning for environmental materials through android also effective for primary school pupils and is it applied in this school	The teacher explains that the use of digital learning media such as android is very effective if it can be used as a learning media for students in preparing for learning at home and also using the learning media at school because the teacher explains that the majority of students have their smartphones but they are rarely used in the preparation process, learn and be used in the learning process at school.

Above are the results of interviews that have been conducted with the teacher of class IV SDN 90 Pinrang, and the results of the interviews are interpreted only in the form of a few words and will then be discussed thoroughly in the discussion section after Table 1 above.

The learning process on science learning (IPA) material emphasizes mastery of science concepts with the discussion of environmental concepts, but it is not only limited to those students who are at the primary school level are also expected to be able to implement the science in a more practical direction so that learning does not only a concept but also how students can develop their knowledge in the form of implementation in their daily lives. Referring to Lestari (2015) that in the curriculum it has been emphasized that science learning must emphasize the mastery of competencies through a series of scientific processes. The expected science learning process can develop belief in the greatness of God Almighty, understanding concepts, application of concepts, and scientific attitudes of students based on science activities towards issues that develop in society to gain knowledge of concepts and science skills as a basis for continuing their education to the higher level.

The Competency Standards applied in the curriculum in primary schools are the minimum standards that need to be achieved by students who are guided by teachers to be able to develop their knowledge theoretically and practically. So according to Lestari (2015), that the achievement of Basic Competencies is based on empowering students to build skills, work scientifically, and own knowledge which is facilitated by the teacher. To achieve this goal, various efforts are needed so that the process and results of science learning are as expected.

Referring to the results of research and interviews on the need for learning media that can support SDN 90 Pinrang students in preparing for learning with the topic of discussion of the environment in science learning subject matter which emphasizes the learning activities that require students to carry out activities inside and outside school that is in the vicinity of their residence. Learning activities that focus on observing objects related to the environment make teachers need educational media that can attract students' interest in learning. This is following the results of Sugiyanto et al, (2018) that the learning media used in learning using android and learning applications must be educating students to learn that provides important and interesting information that is following the language of primary school pupils by combining elements of text, images, audio, and also videos that can help students listen to the animation well, so that with this learning activity, the teacher tries to stimulate thinking skills and invites students to preserve the environment through these learning applications.

Following the results of interviews that learning media in science learning and the environment play an important role for students to get quality learning that can support them to make observations directly through nature and also applications to allow these students to continue the process of observing outside of class hours. According to the information provided by the teacher of SDN 90 Pinrang certainly need concrete learning media that are not abstract for their students, it means that the learning media supports the student's learning preparation process and can also support the learning process in the classroom with objects that can be seen directly and in case the object is not available, so that, the availability of interactive learning media using smartphones is needed in teaching students about the environment. This is also following the findings of Sugiyanto et al (2018) that the development of mobile-based learning media such as smartphones is very useful so that the learning process does not watch only through books that only display text images, but with applications contained in the smartphone, students can view videos, animation, text, and audio which are certainly more interactive and animative.

The difference in the level of student understanding when referring to the learning syllabus on basic competencies about the environment will have a different impact on the way students learn if they are given learning media

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and not given learning media. The support of learning media using technology certainly has a positive effect on the progress of students' thinking in learning. Following the results of interviews with classroom teachers that of course there are differences between students who are given learning media and not given learning media on environmental materials, and it can be seen from their learning activities, students who are not given learning media will only try to imagine what the environment is like but with the help of learning media, students can experience the learning experience directly using interactive and educative learning media that can make the learning process more lively with animations that explain the environment. According to Labib & Berti (2019) that one of the things that make education weak in Indonesia is the lack of advances in information technology which has an impact on the quality of student and education in Indonesia and also has an impact on the ideals of the Indonesian nation in creating a skilled generation in their field. In line with this, Rahmayanti (2015) also revealed that the teacher's role in the learning process also has an impact on the quality of learning, but not only that, the teacher's ability to choose learning media will contribute to changing students' knowledge from not knowing to be interested in learning so, of course, there is a difference between the availability of learning media and the ability of teachers to teach with the limitations of learning media and also the ability of teachers to teach.

Procurement of learning media for primary school pupils is not something new, because the use of learning media in various forms makes it easier for students to learn. The use of android as a learning media is not a new thing in Indonesia and also for some students, but the presence of android as an operating system on smartphones makes it easy for many people to enjoy the convenience of technology and also use applications to support their daily activities. The results of interviews with teachers of SDN 90 Pinrang that the type of learning media that is needed is learning media that includes pictures, animations, and videos in providing information and knowledge on science material in the subject of the environment, not only that, the teacher also said that the use of android and the availability of learning media applications were needed to facilitate him in providing readiness to study at home and also the direct learning process at school. The use of android as a learning media provides good quality for learning because, with the help of android, students can access learning materials easily, and also gives them the opportunity to continue learning at home by utilizing several features such as video explanations and animations on smartphones which allows primary school pupils to repeat the explanation of the subject matter in the application of available learning media features (El-Sofany et al, (2014) and (Bahar & Soegiarto, 2020).

The use of features in applications in learning media using smartphones is also a consideration for the needs of this learning media. Referring to the results of interviews with teachers at SDN 90 Pinrang that the use of features in learning media when using smartphones needs to be considered and must be adjusted to the age of primary school pupils, so that the use of features will be the reason for students to be able to use each of their devices to learn to use the features. The teacher proceeds that one feature that attracts students' interest in learning subjects and also learning science with environmental discussions is the puzzle feature where students try to arrange a random picture into a complete picture, and this can be categorized as a play feature in a learning application. This is also supported by Supriyono (2018) which reveals that the support of learning media allows for effective and efficient learning, and with the help of features in electronic learning media such as smartphones, students can easily remember the learning process that has been studied and the use of features such as games on the internet in learning media that will make students active and make them comfortable in learning, this happens because the learning process is considered a process of academic play and not a process that makes students depressed in learning.

Science learning, as well as the environment, certainly emphasizes two things, namely the theoretical process and also the practice. In general, in the learning syllabus of SDN 90 Pinrang students, learning activities are more practical or encourage students to play an active role in applying science learning theory and the environment in their daily lives. If you look at the results of interviews with class teachers at SDN 90 Pinrang, it is clear that learning science and the environment is not enough only in the classroom, but how students are invited to the environment to be able to understand and see the environment contextually which can be called nature-based learning. According to Sari & Nur (2019) revealed that nature-based learning is learning that uses learning objects as real experiences, observes directly, obtains data accurately, and can learn independently or in groups. The environment that can be used as a learning media is categorized into three types, namely the social environment, the natural environment, and the artificial environment, so that by using the environment as a learning media other than android to provide learning

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experiences to students and expect students to participate more in implementing their learning experiences at school about protecting the environment, then primary school pupils will at least have positive habits in the future.

Learning media and also the learning process that we want to maximize the process in the classroom certainly requires careful learning preparation before students go to school and start learning in the classroom. So that in learning it is necessary to prepare learning that can be done by students before they study in school on science and environmental materials, it is also possible to provide mental readiness and also initial knowledge before they learn in the classroom. In accordance with the results of interviews with teachers, she said that preparation for learning through android is very important but it is of course also influenced by the role of parents at home to help their children in learning before studying at school. As stated by Barutu (2020) that the factors that affect student achievement are internal and external factors. Internal factors come from individual students and external factors come from outside of the individual, so in this case, external factors play an important role that can affect the failure or success of the individual in learning, and student's ability to learn including factors that support student achievement in the learning process is an ability that comes from within students because of the external factors so that to support the learning process, good readiness in learning is needed.

In line with the above, the preparation of learning through android for sciences learning (IPA) and the environment requires two actor roles; they are teachers at school and parents/guardians at home. Learning preparation is supported by the availability of learning media such as android that can be a solution to the challenges of 21st century learning so that if learning preparation continues, it will make learning more effective because students already have the knowledge they get from home. Of course, parental guidance to provide direction on using android in their respective homes will give the impression of cooperation between teachers, schools, and parents/guardians to enforce an educational process based on cooperation for all elements in education. And looking at references from Widiarti (2018) and Syaputra (2016) that learning is readiness for students and readiness means that students are ready and already know what is needed to receive learning in the teaching and learning process. In learning, students must also prepare themselves both mentally and physically. Mental readiness in the form of readiness to receive learning materials in accordance with the majors of interest and the readiness of students in their physical condition is good health to participate in the learning process at school.

D. Conclusion

Based on the results of the learning media need analysis and preparation of learning through android for students of SDN 90 Pinrang in preparing for learning through android, it can be concluded that the need for learning media in science and environmental materials is needed to support the learning process of students in the classroom with the help of learning features such as text, audio, and video that are animative, interactive and informative. In addition, the use of android as a means for students of SDN 90 Pinrang in preparing to study before learning is considered necessary and important for teachers in Sciences Learning (IPA) and the environment to support students' readiness in learning from mental aspects and initial knowledge, therefore this preparation process can be guided by teachers and also parents/guardians of students so that the need for smartphone learning media using the android operating system is needed as a learning media in the classroom and also as a learning preparation media for the students in preparing the study at home.

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