



Types of Learning Media in Primary School during Covid-19

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Abstract

The Covid-19 pandemic required the learning process in primary schools in Jayapura to be conducted online. Each school has its policy for determining the learning media. This study aimed to describe how teachers specify the learning media and various types of media in primary schools during the Covid-19 pandemic. This study was descriptive qualitative research with data obtained through interviews, observations, documentation, and surveys through google forms. The research location consisted of MIN Kota Jayapura, MI Yaa Bunayya, and SDIT Qurrata A'yun in Jayapura. The results of the study show that in determining the learning media during the Covid-19 pandemic, teachers considered (1) learning objectives and teaching materials, (2) the learning style of students, (3) the ease of use of learning media for teachers, students and parents, (4) cost as a supporting factor in the process of determining the learning media since the economy level of the student's parents are different. The types of learning media in primary school during the Covid-19 pandemic consisted of visual-based learning media, audio-based learning media, and audio-visual-based learning media. In addition to these media, teachers collaborated with learning media such as WhatsApp, Google Classroom, Google Meet, Google Form, Zoom, Quizizz, and Wordwall. The obstacles faced by teachers when using these learning media were data packages, networks, the teacher's competence in using online learning media, and parents' support at home in using online learning media.

Keywords: covid-19, primary school, learning media

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A. Introduction

The Covid-19 virus has changed the learning system in elementary schools, specifically in Jayapura. Since the release of Circular Letter number 15 of 2020 on the Guidelines for Learning from Home during the Emergency of the Spread of the Corona Virus Disease (Covid-19) and Circular Letter of the Ministry of Education number 4 of 2020 on the Implementation of Teacher Policies the Emergency of the Spread of Covid-19, Learning From Home (BDR) has been implemented in all levels of education. This indeed became a separate task for teachers. In addition to the various characteristics of the learning methods of elementary school students and the prohibition of face-to-face learning, teachers must create new strategies to ensure that the learning process continues to meet the desired goals (Efendi, 2020).

Learning is the interaction between teachers and students in achieving desired goals. In this interaction, there is a dialogue between the teacher and the student or a message given and received by the recipient, the student. In the Covid-19 condition, teachers could not directly meet face-to-face with students in the learning process. Learning during Covid-19 was done remotely. The characteristics of online learning include (1) The learning process must be interactive, holistic, integrative, scientific, contextual, thematic, effective, and student-centered; (2) Learning is done remotely; (3) Learning must create interaction between teachers and students; (4) Learning must be interesting and not boring; (5) Learning is easy to access and understood by students (Efendi, 2020).

According to Piaget's theory, children aged 7-12 are still in the concrete operational stage of learning. In this stage, students often need to see objects directly, while in remote learning, the learning process can not be face-to-face. In addition, primary school students have a variety of learning styles, including (1) Visual learning, which relies on the sense of sight; (2) Auditory learning, which relies on the sense of hearing; (3) Kinesthetic learning, which relies on body movement in the learning process. With these challenges in remote learning, teachers must have special strategies for remote learning in primary schools during the COVID-19 virus outbreak (Fauzan & Lubis, 2020).

According to the development stage of elementary school students, which is ages 7-12, they are in the concrete operational stage, and in the learning process, they must see things concretely, so learning media can be used as an alternative to learning during the covid 19 pandemic, both in online and offline learning. One of the functions of media in the learning process is as a stimulus provider (information, etc.) and to increase the compatibility in receiving information. In addition, media also makes it easier for students to understand the material explained by the teacher, focuses the students' attention, increases students' motivation to learn, improves students' learning outcomes, and stimulates students to learn independently. With learning media, teachers can also manage the class so that the learning time can be used efficiently. In the implementation of online learning in primary schools, several alternatives can be used, such as (1) the use of various communication media, including electronic media and other forms of communication media that are possible due to technological developments to replace face-to-face learning with ICT-based learning interactions; (2) the use of a learning delivery system where the student and the teacher are separated; (3) the use of interactive learning methods based on the concept of self-directed, structured, and guided learning that uses various sources of learning and with support from learning assistance and learning

facilities; (4) making learning media as a more dominant source of learning than the teacher (Efendi, 2020).

Based on the research conducted by (H. H. Batubara, 2021; Muktiarni et al., 2022; Nurcahyo et al., 2022; Untari, 2017), it is stated that the impact of using learning media in elementary school increases children's learning outcomes and motivation, whether audio-based, visual, audio-visual or even android-based media. However, the research was conducted during face-to-face learning and in areas where learning media were available. Meanwhile, this research focused on the use and determination of learning media during the Covid-19 pandemic and in the regions that do not support distance learning. Therefore, this research aimed to describe how teachers determine media in distance learning during the Covid-19 pandemic, analyze various types of distance learning media during the Covid-19 pandemic at the elementary school level and describe the obstacles faced by teachers in using learning media during the Covid-19 pandemic. Thus, a teacher can determine the appropriate media to use in primary school.

B. Literature Review

Media, etymologically, comes from the Latin language, which means tool, while terminologically, it is the presentation of scientific information that can make someone understand easily (Fauzan & Lubis, 2020). Media is an intermediary or messenger of messages from the sender to the message receiver (Sadiman, 2002). According to (Winkel, 2007), media in learning can be interpreted in a wide and narrow sense. In a broad sense, media is anything, materials, or events that provide students with the opportunity to gain knowledge, skills, and attitudes. In a narrow sense, media is an electromechanical tool that acts as an intermediary between students and learning materials. The Association of Education and Communication Technology (AECT) explains that media is any form and channel used to convey information. Meanwhile, according to the National Education Association (NEA), media can be manipulated, seen, heard, read, or spoken, along with the instruments used for these activities. Learning media can be interpreted as tools that can assist in teaching and learning, which function to explain the meaning conveyed so that the learning objectives can be achieved well (Yunita, 2020).

From the various definitions mentioned, media in the teaching and learning process can be interpreted as anything used to convey messages/teaching materials to students to stimulate their minds and attention in the teaching and learning process. Media can also be understood as a tool for sending messages from the teacher to the student. The use of media in learning can be done independently or in groups. Media has several functions as a tool in the teaching and learning process. Nana Sudjana formulated the functions of teaching media into six categories: (1) The use of media in the teaching and learning process is not an additional function but has its function as an aid to realize an effective teaching and learning situation; (2) The use of teaching media is an integral part of the overall teaching situation. This means that teaching media is one of the elements that the teacher must develop; (3) Teaching media in teaching and its use is integral to the purpose of the subject matter. This function implies that the use of media must be seen in the context of the goals and materials of the subject matter; (4) The use of media in teaching is not only an entertainment tool, in the sense that it is used only to complement the learning process to make it more interesting for the students; (5) The use of media in the teaching process is prioritized to accelerate the teaching and learning process and to

help students in understanding the material provided by the teacher; (6) The use of media in teaching is prioritized to improve the quality of teaching and learning. In other words, by using media, the learning outcomes achieved by the students will be remembered for a long time, resulting in higher value (Djamarah & Zain, 2006).

The role of the media in the teaching and learning process includes making it easier for students to understand the material explained by the teacher, focusing students' attention, increasing student motivation, improving student learning outcomes, and stimulating students to learn independently. Ramli (Ramli, 2012) shares some of the benefits of media in the learning process, namely (1) Providing feedback on improving learning that has taken place or will be planned; (2) Making the subject matter for students functional, so the benefits will be felt more; (3) Providing direct enrichment experiences to students regarding what has been conveyed by the teacher; (4) accustoming students to be more convinced of the learning being taught so that it will generate respect and admiration for the teacher; (5) students' feelings will be felt deeply within themselves by meeting the concepts taught by the teacher with those obtained outside of school; (6) Indirectly making students get used to conducting comparative studies on the material provided by the teacher with what is obtained at school.

As for the benefits of media in the learning process, the media also has several limitations, including (1) expensive costs; (2) requires a suitable room; (3) requires skilled teacher skills; (4) it takes a long time to design; (5) some media can not be applied in schools; (6) the media can only replace the teacher as a tool but cannot replace the role of a teacher (guiding and fostering students). Several media can be used in learning in elementary school, including:

1. Visual media

Visual media is a medium that involves the eyes in the learning process. The media often used in primary school learning include (1) Textbooks. Textbooks are mandatory media in primary school. Textbooks are written and compiled by experts based on their knowledge and adapted to students' understanding levels. Textbooks have become printed media that provide a lot of information. (2) Comics. Comics can be used as an alternative media in primary school learning. Comics are a form of storytelling with unique and funny pictures. Usually, comics are a book that tells simple, easy-to-understand, and enjoyable stories to read. Nana Sudjana (Fauzan & Lubis, 2020) explains that comics are a form of a cartoon with characters and portrays a story in a closely related sequence with pictures to entertain its readers.

Comics have their advantages in learning in Primary school. Primary school students who like to watch cartoon films on TV or youtube can be directed toward reading comics. The presentation of cute and exciting cartoon pictures, dense and exciting stories will make students enjoy reading comics. (3) Pictures are a medium designed to resemble the original in a two-dimensional form, such as photos and paintings. The advantages of picture media are concrete, not limited by time and space, and relatively inexpensive.

2. Audio media

Audio such as sound, music, songs, etc., can become audio media. Audio-based media is divided into two types: (1) radio. Radio is an electronic device used to broadcast current news so that you can know about important and new events and other life issues (Fauzan & Lubis, 2020). Usually, radio is used as a learning medium in Indonesian language classes. In the Indonesian language

subject, elementary school students are expected to master four competencies: reading, writing, listening, and speaking. In listening skills, the use of radio as a learning medium for elementary school students could be an alternative. (2) Cassette. A cassette is one of the media that can store sound and play it repeatedly to students as teaching material. However, cassette media is now widely abandoned because there are more practical alternatives, such as mobile phone recordings and flash drives. The use of cassette, mobile phone, and flash drive is the same as the use of radio, which is in the learning of languages by playing recordings stored on cassette, mobile phone, or flash drive to students for listening.

3. Audio-visual media

Audio-visual media is a medium that uses the senses of sight and hearing in the learning process. Audio-visual media-based learning activates the two senses of students, namely the eyes and ears. Video is one type of audio-visual media because students have to use their eyes and ears to understand it. According to Munir (Fauzan & Lubis, 2020), video is a technology for capturing, recording, managing, transferring, and reconstructing sequences of still images by presenting scenes in electronic motion. Video has some advantages (1) it can concretize abstract objects (not in front of the eyes); (2) the combination of sound and image makes students not bored and tired; (3) it increases students' motivation to learn independently/in groups; (4) it makes it easy for students to remember and see and hear the material. In addition to the advantages of video, it also has weaknesses, namely (1) the cost of making it is expensive; (2) it must be supported by the creativity, innovation, and persistence of teachers; (3), not all schools can use it because of limited facilities and infrastructure. According to (Fauzan & Lubis, 2020), video has two types: (1) Youtube. Youtube is one of the services that use the internet and presents various videos. Youtube is currently popular among children and adults. (2) DVD. Digital Video Disc (DVD) is a compact disk that can be used to store data, such as sound or video, that can be processed later on a computer or DVD player. In addition to youtube and DVD, television (TV) is one alternative to video-based learning.

4. Multimedia media

Multimedia media is a type of media that combines visual, audio, and visual audio into one unit. According to Suryani, Setiawan, and Putria (Fauzan & Lubis, 2020), multimedia is an application used in the learning process to convey messages (knowledge, skills, and attitudes) and can stimulate thoughts, feelings, attention, and the willingness to learn, so that when the learning process occurs, it is focused and controlled. Suryani, Setiawan, and Putria (Fauzan & Lubis, 2020) explain the benefits of multimedia media in primary school learning for students, which are they can understand materials by available time and opportunities, can learn in class or outside of class, can know with tutorials (multimedia as a tutor), can learn actively and receive feedback, can improve the aspects and motivation of independent or group learning. Meanwhile, the benefits for teachers are they can save time with more challenging materials, visualize abstract content and materials dynamically through the process, simulate materials, stimulate the teacher's imagination to be creative, and make it easier for teachers to explain abstract materials.

Besides knowing the various types of learning media, a teacher must be skilled in determining the appropriate learning media to achieve the expected

goals. There are several things to consider when choosing learning media, including:

- a. The selected media should align with and support the established learning objectives. The problem of learning goals is the main component that must be considered in choosing media. Media determination should be clear, operational, specific, and truly reflected in the form of behavior.
- b. The aspect of the material needs to be considered in choosing media. The appropriateness of the material with the media used will affect student learning results.
- c. The condition of the audience (students) in terms of learning subjects is a critical consideration for teachers in choosing media that is suitable for the child's condition. Factors such as age, intelligence, educational background, culture, and child environment are points of attention and consideration in selecting teaching media.
- d. The availability of media in schools or the possibility for teachers to design their media to be used is a consideration for a teacher. Often a medium is considered appropriate for use in class. Sometimes, the school needs the media, but equipment and designing or planning the desired media is impossible for the teacher.
- e. The cost that will be incurred in utilizing media must be balanced with the results that will be achieved. The utilization of simple media may be more beneficial than using advanced (high technology) media if the results achieved are not commensurate with the funds expended (Asnawir & Usman, 2002).

The stages that need to be carried out by teachers in determining/making learning media: First, Analysis. In this stage, the teacher must analyze the characteristics of students, the material to be taught, and the facilities and resources available in the school. Second, Planning. Based on the initial analysis of the characteristics of students and the material to be conveyed, the next step is to formulate the learning objectives, the material to be taught, the media and learning resources to be used and to determine the success indicators. Third, making or designing Media. Based on the initial plan that has been made, the next step is to create or design the media to be used in the learning process. Fourth, Media Testing. After the learning media is designed or made, the next step is to test the media and learning resources to the target that the teacher wants concerning the success indicators that have been determined in the planning stage. Fifth, Evaluation. Evaluation is the process of seeing whether the learning media that has been made and tested is successful. At least several things need to be considered in the evaluation stage (1) the appropriateness of the learning media with the characteristics, learning style, and level of understanding of students, (2) the effectiveness and efficiency of the learning media, (3) the appropriateness of the learning media with the material taught, (4) the appropriateness of the learning media with the school environment.

C. Method

This research used descriptive qualitative research. It overviewed how primary school teachers in Jayapura city defined learning media and various learning environments during the Covid-19 pandemic. There were three study locations, (1) MIN Kota Jayapura, selected based on the assumption that MIN Kota Jayapura is located in Jayapura but far from the city center, and the school system is under the

Ministry of Religion. At the same time, in the aspect of parents of students, the majority are farmers and lower to middle-class entrepreneurs. (2) MI Yaa Bunayya, with the assumption that MI Yaa Bunayya is the reference school for middle-class parents. MI Yaa Bunayya is a private school under the Yaa Bunayya Foundation. (3) SDIT Qurrata A'yun, with the assumption that SDIT is a school for middle and high-income communities. SDIT Qurrata A'yun, one of the elementary schools under JSIT and Kemendikbud. There are differences and similarities in the aspect of the learning environment and learning style compared to the school version. In this research, the informants or those to be interviewed were the principal, class teacher, subject teacher, and Mulok teacher at SDIT Qurrata A'yu, MIN Kota Jayapura, and MI Yaa Bunayya. Meanwhile, other data were additional or secondary data, such as book sources, documents, or school archives. Secondary data were already available and could be obtained by the researcher by reading, looking, or listening. Secondary data could be obtained from documents and surveys about the variety of learning media at SDIT Qurrata A'yu, MIN Kota Jayapura, and MI Yaa Bunayya. The data collection techniques in this research were conducted through interviews, observations, documentation, and surveys using google forms related to the determination and variety of learning media during the covid 19 pandemic to representatives of teachers from SDIT Qurrata A'yun, MI Yaa Bunayya, and MIN Kota Jayapura.

D. Findings and Discussion

1. Determination of learning media during the covid-19 era

The absorption and acceptance of teaching materials by students will vary according to the learning conditions. During the Covid-19 pandemic, learning in primary schools certainly face different conditions compared to normal ones. Learning from home or distance learning during the pandemic can be divided into two approaches: online learning (in-network) and offline learning (out-of-network). Online learning can use some applications such as clouds, Skype, and others that are expected to facilitate online learning. In addition, the Ministry of Education also provides several sites to be accessed as a source of online learning, such as the Rumah Belajar (Learning House) (<http://belajar.kemendikbud.go.id>), Digital Learning (<https://rumahbelajar.id>) and the Ministry of Education TV Education (<http://tve.kemendikbud.go.id/live/>) and others. At the same time, offline learning can use sources and media such as television, radio, modules, printed materials, teaching aids, and learning media from objects and the surrounding environment (Efendi, 2020).

However, in the implementation of online learning in primary schools during the COVID-19 pandemic, there are various challenges faced by teachers and students. Teachers often faced difficulty managing distance learning, students whose parents did not accompany them had difficulty receiving the material presented in online learning, and teachers had difficulty scheduling simultaneously because some students did not have smartphones and their parents were working. The challenges faced by students included difficulty concentrating on learning from home and complaining about the burden of assignments from teachers. Increased stress and fatigue due to continuous isolation can potentially cause anxiety and depression in children. In addition, using smartphones together between students and parents made the learning process less optimal. From these various challenges, there was a need for

appropriate solutions in the learning process during the COVID-19 pandemic. One of them was by utilizing learning media as a means of communication between teachers and students in online and offline learning. Media is positioned as a channel or communication tool in the learning process. It can also be interpreted as a bridge for transmitting teaching materials between teachers and students, as in the following picture:

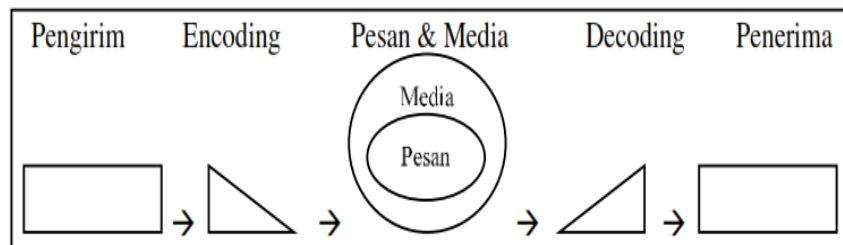


Figure 1. Communication Process
(Source: Darwanto 2011: 19)

Based on the figure, it can be understood that media has a strategic role in conveying the message the teacher wants to convey to the students. The function of the media in the learning process is as a stimulus presenter (information, etc.) and to improve the harmony in receiving information. Also, in certain situations, media have very practical values that benefit students and teachers. With media, the teacher can also manage the class so that the learning time can be spent efficiently. Another benefit is that media can be designed so that the learning process can occur at any time and anywhere without relying on the presence of a teacher. Learning media is any form of stimulus and tool the teacher provides to encourage students to learn quickly, accurately, easily, and correctly and avoid verbalism. Learning media is an aid for the eyes and ears (audio-visual aid) for students to obtain significant learning experiences. Learning media plays a very important role in the learning process; media can accelerate the teaching and learning process and help students capture the teacher's explanation. Media can also be used to explain information about a material that the teacher will convey. Learning media can deliver a message and stimulate thinking, feeling, and students will need it to encourage the creation of learning processes in students. The presence of learning media between the teacher, as an information sender, and the receiver must be communicative, especially for visual objects. Media from the perspective of teachers in Jayapura city is a tool to explain teaching materials to students.

In the learning process during the Covid-19 pandemic, media greatly influenced the quality of learning. Overall, according to primary school teachers in Jayapura, learning media's benefits are facilitating interaction between teachers and students, making learning more effective and efficient. In addition, learning media is also a tool used to smooth the communication process between teachers and students during the Covid-19 pandemic. Therefore, teachers must be proficient in determining the learning media. In determining the learning media, the criteria of appropriateness with the learning objectives, support for the content of the learning material, ease of obtaining the media, the teacher's skills in using it, the availability of time to use it, and suitability with the level of thinking of the students should be considered (Ramli, 2012).

Based on the results of surveys, interviews, and observations in determining the learning media used at SDIT Qurrata A'yun, MI Yaa Bunayya, and MIN Jayapura City, there were several things in determining learning media during the covid 19 pandemic, namely.

a. Learning objectives and materials/teaching materials

In determining learning media, the teacher must analyze the suitability between learning objectives, teaching materials, learning strategies, and learning media and student characteristics. According to Jamaris (H. H. Batubara, 2020), Learning objectives are statements about what students will achieve, not how subjects are taught. The learning objectives must be stated clearly to be used to select strategies, technology, and media. The elements of the learning objectives include components A, B, C, and D, as follows: (a) Audience, namely statements about the characteristics of students who are the target of learning. For example second grade students, (b) Behavior, namely statements about verbs that describe the new abilities students will have after the learning process, (c) Conditions, namely statements regarding environmental conditions or equipment used by students when displaying their abilities, (d) Degree, namely a statement regarding the standard level of accuracy or fluency that students in certain competencies must achieve.

b. Student learning styles

According to (Nasution, 2008), learning style is how students react and use stimuli they receive in the learning process. Meanwhile, according to Bobbi DePorter and Mike Hernacki, learning style is a combination of how someone absorbs, organizes, and processes information (Mustafida, 2016).

As for the learning style of elementary school students in the city of Jayapura, it includes the following: (1) Visual learning style. In the learning process, the teacher sends pictures through the WA Group for students to look at and give comments through chat or voice notes. In addition, images can also be presented during learning using zoom and google meet. (2) Auditory learning style. The auditory learning style is a learning style that prioritizes the use of the hearing sense. Such as listening to songs, music, speeches, stories, etc. In the learning process, the teacher provides the material with voice notes through WA, besides the teacher also gives the students the task of listening to the radio as a source of learning.

c. Ease of using media

The ease here is the ease of using media for teachers, students, and parents. In addition, the media must be easily accessible to students. Various types of learning media were abundant during the covid 19 pandemic, but some teachers were not ready for this change. Teachers tended to use simple media that was easy for teachers, students, and parents, even though the media was less effective. However, schools supported by sufficient funds chose to use media that supported effectiveness in the learning process. These teachers usually got training before using the media. In addition, teachers also socialized the media with the parents of students and students.

d. Cost

The costs incurred were also a consideration for lower-economy primary schools. The impact of Covid 19 was being felt by people with a middle to lower economy. Their learning during the Covid-19 pandemic cost

a lot, especially data packages. Facilities such as cell phones must be supported by applications used by teachers in the learning process. For this reason, several schools only used WA media as the most effective medium. With WA, teachers could send assignments and video tutorials to students. Students could immediately open the message and work on it or wait for their parents to come home because some parents only had one cell phone used by the whole family.

For schools that had sufficient funds, this was not a problem in using learning media during the Covid 19 pandemic. The teachers used several learning media, such as Zoom, Quizziz, Youtube, and other interactive media. Teachers at these schools are more comfortable teaching using Zoom because they could have virtual face-to-face contact with their students. In the learning process, Zoom was used as a classroom in a virtual room and as media for power points, educational games, and videos to deliver teaching materials. Whereas WA was only used as a communication and discussion tool. But sometimes, WA was also used to send assignments, teaching materials, and video tutorials.

There were several steps taken by primary school teachers in the city of Jayapura in making or determining the media, including first, analysis. At this stage, the teacher analyzed the abilities and characteristics of students both in terms of their knowledge, attitudes, skills, and the economy of their families. In addition, the teacher also analyzed the teaching materials and the facilities and infrastructure available at the school. Second, Planning. The teacher designed learning media by the previous analysis and determined indicators of success. Third, Create or Design Media to be used in the learning process. Fourth, media trials, which were testing the learning media to students with several uses. Fifth. Evaluation. Evaluation is a process to see whether or not the learning media has been made and tested by indicators of success.

2. Various learning media during the covid 19 pandemic

The various types of media used by teachers in online learning during the Covid-19 pandemic can be classified as follows.

a. Visual-based learning media

Visual media involve the senses of sight and have elements of line, shape, color, and texture. During the pandemic, primary school teachers used visual-based learning media by using interesting pictures given to students via WAG (WhatsApp group) or displayed when using Google Meet and Zoom. Visual-based media only rely on the sense of sight/eye. Learning through visual media is not enough to see how it looks. However, learning through visual media means interpreting or decoding the visual meaning (decoding) or the messages contained in the visual media (H. H. Batubara, 2020). This includes various visual-based learning media, including textbooks, comics, and pictures/photos (Efendi, 2021).

However, in learning at primary school in Jayapura city, only textbooks and pictures were used in visual-based learning even though learning using comics has its advantages, according to Nana Sudjana (Fauzan & Lubis, 2020). This was because there was no training in comic-based learning media, so teachers could not use and make comic-based learning media.

Visual-based learning media has several advantages. Among the advantages is cheap. Cheap was the main key in providing learning media during the covid 19 period because the impact of covid 19 affected the income of students' parents. Besides being cheap, visual-based learning media is also easy to use by teachers, students, and parents, and access to these media is relatively easy. Visual-based learning media has several functions, including providing concrete references for ideas, concretizing abstract ideas, motivating students, directing attention, repeating information, stimulating student memory, and reducing learning effort (I. H. Batubara, 2020). According to Sutjipto (Wahab, 2020), the principles in selecting visual media consist of the principle of simplicity, the focus of cohesiveness, the principle of emphasis, and the principle of balance.

According to (Nurcahyo et al., 2022), students in the lower grades of primary school have started using pictures from their observations of their environment and building ideas until they arrive at the initial concrete stage. By using a qualitative approach and drawing samples of primary school students from lower grades, this study concludes that their drawings' visual characteristics are constructive thoughts influenced by their environment and personality. Their learning tendency is to use concrete, integrative, and hierarchical pictures with visual, haptic, and mixed types. Most drawings are stacked, stretched, overlapping, bird perspective, and object subtraction, with the four visual elements predominating in line, area, shape, and color.

b. Audio-based learning media

Audio media is a medium that utilizes sound to transmit messages that can inspire students' thoughts, emotions, focus, and desires in the learning process. Audio media is related to the sense of hearing. The message being conveyed is conveyed through auditory signs, both verbal (in the form of words or spoken language) and nonverbal (Wahab, 2020). The functions of audio media in learning include (1) transmitting audio messages from the sender to the receiver, (2) training all activities related to the development of skills, particularly those related to hearing skills, which can be achieved through audio media such as: focusing attention and maintaining attention, following directions, analyzing, determining meaning and context, sorting information and ideas, summarizing, remembering and retrieving information, (3) serving as a tool for teachers, as it is only meant to be used as an aid and requires the assistance of other methods or media, thus the listener's experience and knowledge will aid in its success. During the pandemic, primary school teachers in Jayapura city only used audio media by sending voice recordings or notes using WAG. Usually, audio media is combined with other media. The advantages of audio-based learning media include being low-cost and flexible, training students to focus their attention, and training students' imagination.

c. Audio-visual based learning media

Audio-visual media uses the senses of sight and hearing in the learning process. Learning based on audio-visual media activates the two senses of students, namely the eyes and ears. Video is one type of audio-visual-based media because students must use the senses of seeing and listening to understand it.

Audio-visual media are interesting media and can be used by teachers in student learning practices at the primary school level; this media does not seem rigid in online learning, especially during a pandemic (Yuanita, 2021). In using audio-visual-based learning media, primary school teachers in Jayapura tend only to use it to make video tutorials and use YouTube to complement teaching materials. As for the implementation, the teacher recorded learning tutorials or sent YouTube links to students via the Whatsapp Group (WAG). If students found some things were not clear students could ask via the Whatsapp Group. According to some primary school teachers, audio-visual-based media were more interesting than audio and visual media because audio-visual media could display moving images accompanied by audio.

In addition to sending videos via WAG, primary school teachers also created audio-visual-based learning media using PowerPoint (PPT). Audio-visual media has advantages including (1) Can be used more than once, as long as it is stored properly, (2) Clarify in conveying the material because there are pictures and sounds that help students understand the material, (3) Involve more senses when learning, (4) Have a good appearance, to attract the attention of students.

From this description, it can be understood that the learning media used by SD / MI teachers in Jayapura city during the Covid 19 Pandemic were visual, audio, and audio-visual-based media. However, in practice, it was combined with other media such as WhatsApp, Google classroom, google form, Zoom, Google meet, quizziz, and word walls that support learning.

a. WhatsApp

WhatsApp is an application that is used to send messages, both text and audio, using internet access. WhatsApp can also send document files and photos, make video calls, share GPS locations, and more. The application also allows its users to create groups, commonly known as (WAG), which makes it easy for teachers to communicate and condition students within one group. Most primary school teachers and parents of students in Jayapura had WhatsApp. Teachers in Jayapura had maximized the use of WhatsApp during the COVID-19 pandemic to carry out classes. WhatsApp was considered the most effective medium to learn during the COVID-19 pandemic because everyone had WhatsApp and its use was relatively easy for teachers, students, and parents. Some advantages of WhatsApp in learning are (1) WhatsApp is an application that can be easily obtained and used for free, (2) WhatsApp has several facilities such as sending comments, writing, images, audio videos, and documents as teaching materials, (3) WhatsApp can be used to provide information quickly and easily, (4) WhatsApp provides ease in online learning between teachers and students or other students, wherever they are. However, some challenges in using WhatsApp in the learning process included unstable internet connection and lack of smartphones in one household, which caused difficulties for students when sending and completing assignments given by teachers. Students had to wait for their parents to come home before they could work on the assignments.

b. Google Classroom

Google Classroom is one of the services provided by Google that teachers can utilize for the learning process during the COVID-19 pandemic. Although Google Classroom has many features and is interesting, it is mostly used by primary school teachers just for giving assignments and collecting student assignments. Using Google Classroom reduces the burden on memory on a mobile phone, providing a storage space of 15 GB. From the research at SDIT Quurata A'yun, MI Yaa Bunayya, and MIN Kota Jayapura, there were only a few teachers using Google Classroom as a learning medium. This was because many parents of students did not understand how to use Google Classroom.

c. Google form

Google form is one of the services provided by Google that can be used for surveys or learning. Google form is quite easy, even for beginners, because it does not use coding to create it. Google Forms can also collaborate with other websites or media, such as Google docs, Google Drive, and YouTube. In the learning process, Google can send teaching materials, create essays and multiple choice questions, and be used for learning evaluations. Most primary school teachers in the city of Jayapura during the Covid-19 pandemic used Google Forms as a learning medium, especially in making assessments and even final exams mostly used Google form. Google Forms was used because it was easy for teachers and students, inexpensive, and not limited by space and time. In its implementation, teachers only shared the Google form link that had been created, after that students worked following the instructions given by the teacher. The link could be shared through WAG, email, and SMS. The main challenge faced in learning using Google form was the lack of network stability, resulting in tasks being late to submit.

d. Google meet

Google meet is a service provided by Google that functions for virtual face-to-face learning or distance learning. Most primary school teachers in learning during the Covid-19 pandemic used Google Meet because (1) it was easy to access. In its use, Google Meet is easy to use. Google meet is also free to use, and users don't need to buy an account. They only need to have a google account to access google meet. (2) Flexible. It does not need to be in one room, but it is necessary to unite one time between the teacher and students. (3) make learning more interactive (Darmuki, 2020; Dewi et al., 2021; Fuady et al., 2021; Maulana, 2021; Octafian et al., 2021; Suhery et al., 2020). Learning with Google Meet is the same as face-to-face learning; the difference is that learning with Google Meet is done virtually. The learning process is the same as face-to-face learning, and there are preliminary, core, and closing activities. This makes learning using Google Meet more interactive. Teachers can directly interact with their students.

With Google Meet, teachers can share screens, which means they can change the main screen into files needed for learning purposes. Teachers can present power points they want to display and explain to their students, and teachers can also share videos they wish to display, and students can watch videos shared by their teachers through Google Meet. According to (Sawitri, 2020), there are several advantages of Google Meet, namely (a) it has a White Board feature, (b) free, (c) its HD video display and supports other

resolutions, (d) easy to use, (e) encryption service video, (f) Lots of attractive display options, (g) Can invite up to 100 participants. Meanwhile, the weakness is that it requires a data plan. Not all facilities are free and require a stable internet network. The obstacle faced by primary school teachers when learning was an unstable internet network.

e. Zoom

Zoom is one of the video conference services that allows teachers and students to interact directly in a virtual classroom. The Zoom system works the same as Google Meet, but Zoom requires a paid account to enjoy the facilities in Zoom. Therefore, only a small number of primary school teachers in Jayapura used Zoom in their teaching during the Covid-19 pandemic. Teachers can utilize many Zoom facilities in their teaching, including sharing screen layers and muting Zoom participants. This is what differentiates it from Google Meet. In addition, with low bandwidth, the Zoom application can run smoothly during video conferences, and the learning process will be more effective. According to some teachers who used Zoom, its advantages are it is easy to use and has many features that can make learning more interesting. In addition to the advantages of Zoom, it is heavy to use in various schools that do not have adequate facilities and the economic background of parents does not support it. Among its weaknesses are that free Zoom is only limited to 45 minutes and requires a large data package and a stable network. However, based on surveys, interviews, and observations in schools that used Zoom, the Zoom learning media was considered the most effective media used.

f. Quizizz

Quizizz is a web tool for creating interactive quiz games in classroom learning. Created interactive quizzes have up to 4 answer choices, including the correct answer, and users can add an image to the background of the question. Quizizz can also provide real-time data and statistics about student performance results (Amalia, 2020; Basuki & Hidayati, 2019; Haddar & Juliano, 2021; Lim & Yunus, 2021; Purba, 2020; Yunus & Hua, 2021). Quizizz can not only be done while studying in class but also be made up of questions for homework, so students can play them anytime and anywhere as long as they do not exceed the allotted time limit.

Learning with Quizizz makes learning more interesting because students learn while playing games. The advantage of Quizizz for students is that students can not cheat their peers because the questions given to each student have been randomized. Questions can be made with certain time provisions that make students not have the opportunity to ask people around or look at their notebooks. After taking the quiz, students can find out the ranking they got from all students who worked on the problem. Not only that, but students also know the correct questions and answers to the questions they have done.

Meanwhile, the advantage of Quizizz for teachers is that there will be automatic grading, then Quizizz will analyze the items, all of which can be downloaded in the form of excel files. The report is quite detailed. Each student's correct and wrong answers will be reported, as well as the percentage of quizzes for all students. Besides that, the results of each student's quiz can be emailed to the student's parents.

Not all primary schools used Quizziz because some teachers were not too familiar with quizziz, so teachers did not know how to use it. The obstacle in using Quizziz was the internet network.

g. Wordwall

Wordwall is a web that can be used for fun learning for students. The use of Wordwall in the city of Jayapura was not implemented by all schools due to the limited ability of teachers to use Wordwall. Wordwall provides interesting features such as quizzes, matchmaking, pairing, anagrams, word shuffle, word search, and grouping. In addition, users can provide access to the media they have created online, which can also be downloaded and printed on paper.

From this description, we can understand that each primary school had different policies for determining and using learning media during the Covid-19 pandemic. The striking difference in determining and using learning media during the Covid-19 pandemic lay in the costs. Cost is a major factor in determining the difference in media. Schools with adequate facilities and infrastructure and parental support chose to use up-to-date learning media, such as zoom, video, quizziz, and so on. Meanwhile, schools that were relatively ordinary in terms of financial ability only used Whatsapp Groups (WAG) to communicate and send material to students. In addition to the Whatsapp Group (WAG), the teacher also gave assignments offline so that students could take materials and assignments to school, and then students submitted these assignments while taking new materials and assignments.

In learning during the covid 19 pandemic in the city of Jayapura, the network was the most fundamental obstacle. In addition, not all students had a data package. This was due to the economy of the parents of these students. Teacher proficiency in using online-based media was also an obstacle in online (distance) learning. Nearly 78% of teachers taught manually (not using ICT-based media). This was why when teachers were forced to use online learning media, they must learn and adjust to it. For this reason, facilities, infrastructure, teacher skills in using online learning media, and parental support need to be considered before carrying out online learning. In the opinion of (Zurqoni et al., 2022), the success of implementing online learning in primary schools includes the availability of adequate gadgets, stable internet data and internet networks, a consistent collaboration between teachers and parents, and the readiness of teachers and students.

E. Conclusion

In determining the learning media during the Covid-19 pandemic at the primary school level, several aspects were considered, namely (1) the learning objectives and curriculum, (2) the learning style of the students, (3) the ease of use of the learning media for teachers, students and parents, and (4) cost as the most important factor in determining learning media. The learning media used in primary schools during the Covid-19 pandemic consisted of (1) visual-based learning media, (2) audio-based learning media, and (3) audio-visual-based learning media. In addition, to use these media, teachers collaborated with a variety of learning media such as WhatsApp, Google Classroom, Google Meet, Google Form, Zoom, Quizziz, and Wordwall. The obstacles faced by teachers when using these learning media were data packages,

networks, and parent accompaniment. This research has not yet investigated the effectiveness of the media used during the Covid-19 pandemic, and it has not been seen whether these media can improve students' learning outcomes. Therefore, further research is needed.

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