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UTILIZATION OF YOUTUBE-BASED DIGITAL MEDIA IN SCIENCE LEARNING IN ELEMENTARY SCHOOLS

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Abstract

Digital media is a means of delivering information from the sender to the recipient. YouTube videos as a learning medium are very suitable for the learning characteristics of today's generation of students, so students prefer to watch learning videos via YouTube. Using YouTube media for learning, especially science learning, can help students develop critical thinking skills, solve problems, make decisions, and use social media to collaborate. YouTube can provide students and teachers with valuable experiences for freedom of expression, educational collaboration, and skill development. Innovating YouTube videos to teach science, they must be systematic, concrete and complex. The content of YouTube content contains four main elements in the nature of IPA. YouTube video innovations that suit the nature of science learning are carried out in the form of five types of videos, namely (1) concept explanation videos, (2) scientific facts videos, (3) model simulation videos, (4) demonstration videos and (5) experimental videos. Learning videos on YouTube can be used for interactive learning in the classroom, both for students and teachers themselves through online and offline presentations.

Keywords: Digital Media, YouTube, Science Learning

INTRODUCTION

The use of digital technology in learning media can improve the quality of learning. The use of varied learning media can overcome children's passive attitudes, because learning media plays a role in generating enthusiasm for children's learning. The use of innovative learning media based on information technology has great potential to improve the quality of learning, because it is an effective and efficient way of conveying information (Prayoga, A. S, 2021). In this era of digital technology, digital media can be used by parents to provide education. Various considerations must be made by parents and educators in choosing the right media for their children. Mistakes in choosing media have an impact on the development and formation of children's character (Suryani, N, 2016).

Science is one of the main subjects in elementary school. Natural Science is a learning that discusses the state of the universe and scientific

processes so that students can carry out learning in accordance with scientific processes such as observing, classifying, predicting, designing and carrying out experiments. Science lesson knowledge can be obtained through activities in the form of facts, concepts and theories (Daulai, N., et al, 2023). For this reason, appropriate methods and media are needed in the learning process to make it easier for students to understand the material.

One of the challenges faced by teachers in the science learning process is in delivering the material because the learning process is carried out online. This can cause students' understanding of the learning material presented to be less than optimal. Apart from that, in the online learning process teachers are required to be proficient in operating technology. Which is used to help transition learning from face-to-face learning to virtual learning. Online learning carried out online is one solution to various problems related to students' cognitive learning outcomes (Jannah, M., & Nurdiyanti, N, 2021). To face this problem, teachers must provide an appropriate learning process using science learning media that is interesting, educative and fun. Science is a natural learning concept and has a very broad relationship with human life. YouTube videos as a learning medium are very suitable for the learning characteristics of the current generation of students so that students prefer to watch learning videos via YouTube (Taufik, M. S., et al, 2022).

There is nothing wrong with the power of YouTube videos as a learning medium. Even though YouTube video media is widely used, teachers face many obstacles in using YouTube videos as learning media. Therefore, the quality of learning may be compromised under these conditions. Learning media is a very important element of learning. Teachers generally have difficulty downloading videos from YouTube and selecting relevant video content. Among other things, teachers complain that the power supply and WiFi network connection at school can be unstable, it is difficult to manage time during the learning process, and it is difficult for students to continue learning during learning activities. Difficult to manage. Several previous studies have stated that the main obstacle for teachers and students in using YouTube media is technical factors in the form of electricity which supports the use of computers and the internet (Ajizah, R. U. N., & Putra, K. Z, 2022). According to other research, the barriers to using video media are the teacher's ability to make educational videos, video media tools, video language, time allocation, video objects, and internet networks.

RESEARCH METHOD

The study in this research is qualitative with literature. The literature study research method is a research approach that involves the analysis and synthesis of information from various literature sources that are relevant to a particular research topic. Documents taken from literature research are journals, books and references related to the discussion you want to research (Earley, M.A. 2014; Snyder, H. 2019).

RESULT AND DISCUSSION

Digital Media Learning

Digital media is a means of delivering information from the sender to the recipient. In the field of education, digital media is a tool for educators and children to expose their knowledge to others. It is impossible for educators to be separated from digital media learning because they are a supporting factor in realizing effective and efficient learning (Martin, F., & Betrus, A. K, 2019). Digital media learning can increase educators' access to new views about education, for example about how to learn, classifying difficult terms, how to find information and so on. educators who use digital media learning can help them improve children's teaching methods, help children who have special needs, motivate, provide broader information and apply new learning strategies at all levels of learning (Pischetola, M, 2011).

Digital media can shape and determine the way of thinking and behaving in every individual in society. The presence of digital media can change the behavior of each individual and continue to dynamically adapt to needs. Finally, a person will continue to move along with developments in accordance with existing technology. In connection with the use of digital media for the learning process, a person has a way of thinking and learning when using digital media to send messages so that the learning process runs smoothly (McDougall, J., & Potter, J, 2019).

In digital media learning, there are several types of material presented in digital form, namely digital teaching materials to help understand the material to be studied. The definition of digital media learning is a system that provides facilities for its users so they can learn more variedly, more widely and more widely. With the facilities in the digital media learning system, users can learn anytime and anywhere without being limited by distance, space and time. In digital media learning, all learning material studied will be easier, not only in oral form, but in more varied forms such as text, visuals, audio and movement. In digital media learning, users need active communication

through the use of communication and information technology, such as computers and the internet, cellphones and their applications, video and telephone (Gan, B., et al, 2015). Digital media learning is an application of web-based and digital teaching materials. Where digital learning definitely starts with good planning, then the learning material delivered to users leads to that planning.

Digital media learning includes hardware consisting of a set of computers that are connected to each other and have the ability to send data, namely in the form of text, video, audio and graphics. Digital media learning uses an indirect learning system in one place, so there is no face-to-face interaction. Interaction can be done directly or online (Google Meet, Zoom Meet), real video, real audio and chatroom (Degner, M., et al, 2022).

Benefits of Digital Technology

The development of the digital era brings benefits to human life, including helping work in creating, changing, storing, conveying information and disseminating information quickly, with quality and efficiently. The benefits of digitalization technology are as follows:

1. Marketing coverage
   According to Fernanda, M (2021), the benefits of digitalization technology in the trade sector are considered very important to minimize operational costs and to reach more consumers. By utilizing available platforms such as online stores (ecommerce), business actors can reach more consumers from various regions at a cost that is not too expensive. The use of social media is also beneficial for business people as a medium for marketing or advertising products so that many people know about them.
2. Information dissemination
   According to Perrotta, C (2013), the benefit of digitizing information is creating an information society, meaning that with digital information, it is easier for people to get the information they want so that the information society continues to grow.
3. Distribution
   The benefits of digitalization for distribution are helping business people sell products faster, expanding the reach of sales locations and maintaining good relationships with consumers.
4. Recording for accounting

The benefit of digitalization for the accounting field is that it makes the process of recording and making reports easier. As well as further improving data security.

The benefits of digitalization are not only felt by companies, however, the benefits of digitalization can be felt by fishermen. By utilizing digitalization, fishermen can further increase their catches. Fishermen whose work is very dependent on the climate, by using digitalization fishermen can predict their safety while working. According to Bitto Urbanova, L., et al (2023), by utilizing digitalization fishermen can further increase their catches at sea, and at the same time ensure their safety at work.

YouTube Learning Media

A. Understanding Learning Media

According to Arsyad (2017) "The word media comes from the Latin medius which literally means "middle" intermediary or introduction in Arabic, media is a medium or intermediary for messages from the sender to the recipient of the message." So, media is a tool that conveys or delivers teaching messages. "Learning media is anything that is used to channel messages and can stimulate thoughts, feelings, attention and the desire to learn so that it can encourage a deliberate, purposeful and controlled learning process" (Rahmatika, R., et al, 2021).

B. Understanding YouTube

"Youtube is online video and the main use of this site is as a medium for searching, viewing and sharing original videos to and from all corners of the world via the web" (Sari, Y. N., & Margana, M, 2019).

Based on the explanation above, the researcher believes that YouTube learning media is a tool for delivering messages from teachers to students to encourage the learning process to be better and more controlled through videos provided on the YouTube website so that students can easily understand the in-depth study material.

C. YouTube Learning Media Objectives

Abdullah, D., et al (2023) "explains that the aim of learning media is that students are expected to have better abilities after taking various learning experiences accompanied by knowledge sourced from the curriculum." Rahmatica, R., et al (2021) explain the purpose of the media as follows:

The purpose of YouTube learning as a learning medium is to create interesting, fun and interactive learning conditions and atmosphere.

Learning videos on YouTube can be used for interactive learning in the classroom, both for students and teachers themselves through online and offline presentations.

Based on the explanation above, the researcher believes that the learning objective of YouTube media is to give students a better ability to receive the material presented by the teacher so that learning in class can be interactive so that it can improve learning outcomes.

D. The Advantages of YouTube as a Learning Media

Rahmatica, R., et al (2021) explained that the advantages of YouTube as a learning medium are:

1. Potential, namely YouTube is the most popular site in the internet world today which is able to provide different value to education.
2. Practical, namely YouTube is easy to use and can be followed by all groups, including students and teachers.
3. Informative, namely YouTube provides information about developments in education, technology, culture, etc.
4. Interactive, namely YouTube facilitates us to discuss or do questions and answers and even review a learning video.
5. Shearable, namely YouTube has HTML link facilities, embedded learning video code which can be shared on social networks such as Facebook, Twitter and also blogs/websites.
6. economical, namely YouTube is free for all groups. Benefits of YouTube

Based on the explanation above, the researcher believes that the advantages of YouTube in helping learning are very practical and can provide more scientific information and can be accessed for free.

Utilization of YouTube Media in Science Learning

The use of learning media can support the smooth scientific learning process in elementary school. This is very useful in developing students' critical thinking skills. Participants' critical thinking skills are needed to solve everyday life problems. However, in practice the use of learning media in elementary schools cannot be utilized optimally. This shows that there are still few who use the learning media that we use, especially using YouTube. Teachers have difficulty using YouTube learning media in science subjects and do not have enough time to use YouTube learning media. Scientific material at elementary school level contains many natural science concepts, so there is a lot of material that must be memorized (Purnamasari, I., & Hafnita, S. D, 2019).

Therefore, appropriate learning media is needed so that students can easily understand the material.

Teachers can use YouTube media to attract students' attention and encourage them to listen and pay attention to material viewed directly from YouTube videos (Patmanthara, S., et al, 2019). Using YouTube media for learning, especially science learning, can help students develop critical thinking skills, solve problems, make decisions, and use social media to collaborate. YouTube media is very suitable for science material, for example solar system material. However, the selection of educational videos on YouTube must be in accordance with the curriculum, core competencies and basic competencies that can increase student learning activities to achieve the desired competencies.

The YouTube application has many features that offer advantages such as easy for users to submit, easy to view the videos they want, upload videos with unlimited length and number of videos, easy to share YouTube video links, users with 1,000 viewers download videos, comments There are costs to allow likes, but all users are monitored by YouTube to ensure no videos are plagiarized, illegal, or contain sara (Pecay, R. K. D, 2017). Furthermore, YouTube can be a learning resource and learning media that can meet the learning needs of today's generation. Learning resources are a system consisting of a collection of materials or situations that are deliberately created for individual learning by students. Thus, YouTube is widely used or viewed by users or viewers. So teachers can use this feature when learning science.

Youtube Video Innovation for Teaching Science

YouTube video innovations for teaching science can provide something that can be heard and seen, thereby increasing students' motivation to learn and providing learning experiences for students in online learning (Iwantara, 2014). Innovating YouTube videos to teach science, they must be systematic, concrete and complex. The content of YouTube content contains four main elements in the nature of IPA.

Video is one way of conveying and delivering information that is interesting and direct. This video can be a meaningful medium when compared to images, audio, graphics and others. When used, it can provide a new, interactive experience, where if an object in the animation is artificial, then the object in the video is real. Video is a technology for capturing, storing, processing, transferring, recording, reconstructing a sequence of

images that are usually still into movement electronically (Fadhli, M, 2016). Utilizing video as a learning medium is able to get a good response from students because it is something new for students, the discussion is short, concise and clear, learning activities become interesting so that they can increase learning motivation and understanding of the material.

The advantages of YouTube videos in learning are (1) Potential, namely YouTube has the potential to become a medium in the learning process because it provides opportunities for education. (2) Practical, that is, YouTube is easy to access for all groups. (3) Informative, namely YouTube provides information on the development of educational science, technology, and so on. (4) Interactive, namely YouTube provides facilities for discussions or conducting question and answer activities through the comments column. (5) Shareable, namely YouTube videos that can be easily shared on various social media. (6) economical, namely videos that are presented free to all users (Duffy, P, 2008).

The following will describe five types of YouTube videos that suit the nature of science learning, including:

1. Concept explanation Video

   This is a video that contains an explanation of certain science products (such as concepts, theories and principles). Most videos of this type present an explanation by a person (teacher or presenter) who uses images, animation, writing, charts or graphs. This first type functions to teach science according to the first character, namely science as a product. This type of video is most often found on YouTube channels, especially if the video is made by a science teacher.
2. Scientific Facts Video

   The factual video presented contains something that exists, and not many people are aware of it, or don't even know about it. So this can attract students to find out the answer by watching this video until the end. associated with. Besides, facts

   Sometimes presented are issues that are trending or viral in society, for example issues of environmental pollution, health issues or issues of the latest discoveries. Apart from teaching science process skills (for example analyzing, concluding or evaluating), science applications (for example facts about the development of new technology), this second type of video can also teach certain attitudes in science, especially when what is presented are issues that give rise to pro and cons in society.
3. Model Simulation Video

The simulation video is carried out by the tutor directly with the title of the simulation, namely making a tool to demonstrate the breathing mechanism in humans. This simulation video starts with the tutor conveying the purpose of the simulation, telling the tools and materials that must be provided to make the teaching aids, giving an example of how to make it, explaining how the props that have been made work. Then invite students to practice making these props and then students also explain how the props they make themselves work. Thus, this type of video is in accordance with the character of IPA as a product and also as a process.

4. Demonstration Video

   Is a video that contains demonstrations of evidence of the truth of certain concepts, theories or principles in science. Demonstration is a teaching method that is carried out by demonstrating or giving examples of activities, events, rules, arranged step by step, either directly or through the use of learning media that can convey the subject matter being taught to students. (Syah, 2017). This type of video is also suitable for teaching science as a product and also as a process.

5. experiment Video

   Video experiments carried out by tutors directly contain explanations of objectives, explanations of experimental materials, information about tools and materials, providing examples of experimental work, providing challenges and asking questions. This video does not explain the results of the experiment with the aim that students can also do it independently, then proceed to the process of observing, collecting data, analyzing and writing down the results of the experiment. This is in accordance with the theory that the meaning of experiment itself is a way of teaching students by conducting an experiment about something, students are asked to observe the process, write down the results of the experiment, and explain the results of their own observations (Breslyn, W., & Green, A. e, 2022).

CONCLUSION

Using YouTube media for learning, especially science learning, can help students develop critical thinking skills, solve problems, make decisions, and use social media to collaborate. YouTube can provide students and teachers with valuable experiences for freedom of expression, educational collaboration, and skill development. YouTube is a very convenient and easy way to learn, and you can easily find references in your learning process. YouTube can not only be used as an educational tool to increase students'

interest in knowledge and support modern learning styles, but also as a great educational resource. YouTube video innovations that suit the nature of science learning are carried out in the form of five types of videos, namely (1) concept explanation videos, (2) scientific facts videos, (3) model simulation videos, (4) demonstration videos and (5) experimental videos. Further study and research is needed regarding effective methods for utilizing these five types of videos in science learning.

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