



# Utilizing Media of Google Earth Education for Spatial Intelligence in Social Studies Learning at School

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**Abstract:** The limited use of digitalization media in learning at Junior High School is a common problem. In schools, it is still found that some do not have adequate infrastructure, including the ability or readiness of teachers to use existing technology. One of the concerns in this paper is about Google Earth education to see spatial intelligence in social studies learning. A learning media that may not have been widely used will be beneficial for teachers in delivering social studies material with the primary material related to geography or history for specific sub-themes. Google Earth Education can be utilized optimally as an alternative to conventional learning media. The media usually uses wall maps, atlas, or globes as learning media for social studies subjects at the school level. Google Earth Education comes with a visual display that presents the appearance of the earth according to its original state. This learning media will be interesting because pictures, colors, and lines match the surrounding conditions.

**Keywords:** Google earth education, social studies, spatial intelligence



## Introduction

Social studies are often classified as less exciting and dull subjects. This possibility is caused by the teaching pattern in the classroom, which emphasizes reading material and then filling out worksheets, summarizing, and the media used is still conventional. Entering today's life, the introduction and use of technology in the practice of learning in the classroom has become a necessity. The demand to master 21st-century skills applies to both social studies teachers and their students. According to Ardyodyantoro (2014), in his research, technology development is a challenge for social studies teachers who are always required to be creative in dealing with problems in education, significantly to improve student learning outcomes. Among them is through the use of learning media, which aims to prevent students from experiencing boredom in the learning process where it is one of the obstacles in improving student learning outcomes. Various learning media breakthroughs are available, but only a few can be maximized for improving student learning outcomes.

The rapid development of the world of information and technology (IT) has become a situation that is difficult to avoid in various aspects of life, especially in the world of education. The use of technology today seems to have become a necessity. According to Sutarman (in Naibaho, 2017), the purpose of information technology must be a tool to solve problems, open up creativity, and increase effectiveness and efficiency in doing work.

Starting from increasingly sophisticated information media and educational media that continues to grow and technological advances that are increasingly attractive to use as an alternative to conventional learning media. This aligns with Schramm's thoughts in Rohani (2019), who said that technology could be used for learning purposes. However, in various technological conveniences, innovation in learning technology content has not been widely carried out. Meanwhile, the existence of technology in social studies learning must be fun, meaningful learning, besides the objectives of learning are also fulfilled.

In this paper, the emphasis is on using media Google Earth Education, a form of utilizing science and technology that can be used as a social study learning medium in the classroom. Technological advances have also penetrated the map media with the emergence of Google Studios gradually emerging digital-based maps, such as the birth of Google maps (2-dimensional maps) and Google earth (3-dimensional maps). Google Earth is a virtual embodiment of



the globe by providing the opportunity to view satellite images, maps, terrain, 3D buildings, and many others. This program, managed and developed by Earth Studio, allows users to travel and learn about the world through a virtual globe. According to Tanana Tutorials (2019), Google Earth Education is the right learning resource for teachers and students, in which there are lesson plans in various subjects that put them into a geospatial context.

In her research, Fajriana (2021) reveals the advantages of media Google Earth are as follows: (a) Media that can display the appearance of countries around the world; (b) Media that can see the location, position, and borders of countries around the world; (c) Media that can display the location of a place in a more informative and detailed manner; (d) Media that can be used as learning media related to the position of a country; (e) media that can be used to search for a particular country which can be done quickly through the search field. Apart from some of the advantages of Google Earth above, there are also weaknesses from media Google Earth, including the following: (a) Google Earth media is an online media or requires an internet network to access it (b) the network used when accessing Google Earth must be pretty stable (c) the device used to access Google Earth, it is recommended to have good device specifications for better use of Google Earth.

Intelligence related to social studies, especially in the subject matter of geography, is visual-spatial intelligence. It is described by Armstrong (2009) that to empower spatial intelligence in academic achievement required strategies and tools that support such as a map, or in the 21st century can use the software and the features of Web 2.0 that enable spatial intelligence with various media, one of which is media Google Earth. By using the media, exciting and meaningful learning will be obtained by students. This is because the use of these media will provide students' skills in perceiving the visual-spatial world accurately and transforming visual-spatial perception into various forms. In addition to students being encouraged to get to know digitalization technology, teachers are also required to have skills related to the development of science and technology to achieve the expected learning goals.

In the teaching process, of course, not pay attention to how the teacher teaches but how the children learn. One way to develop spatial intelligence in learning is by developing teaching materials with something related to visuals; for example, in social studies, subjects can use map media, make map puzzles,



or by holding a snake and ladder game so that students are more exciting and more focused in learning study. Social studies subjects use maps as a medium in the subject matter of geographies, such as being used to see the area and location of Indonesia's territory, the surface of the earth's shape, and others.

## Results and Discussions

The theory of intelligence or better known as multiple intelligence from Howard Gardner, states that there are eight bits of intelligence possessed by humans, namely: linguistic intelligence, logical-mathematical intelligence, visual-spatial intelligence, bodily-kinesthetic intelligence, musical intelligence, intrapersonal intelligence, interpersonal intelligence, and natural intelligence. The eight bits of intelligence above are owned by everyone, but some stand out, and some do not. According to Howard Gardner in Julia Jasmin (2021), spatial intelligence, sometimes known as visual intelligence or visual-spatial, is the fourth ability to form and use mental models. Visual means images, while spatial are things related to space or place. What is meant by visual-spatial intelligence is the ability to understand images and shapes, including the ability to interpret the dimensions of space that cannot be seen. According to Silverman, the 'visual-spatial learner' concept is seen as: "learners are individuals who think in pictures rather than in words, meaning that students who have visual-spatial are students who prefer to think in pictures rather than words. Visual intelligence tends to think with pictures and is very good at learning through visual presentations such as films, pictures, videos, and demonstrations using visual aids.

According to Armstrong (2009), five learning strategies can activate students' spatial intelligence for academic purposes. First, *the Visualization Strategy*. That is, students are asked to close and imagine what they read or learn. Then, they describe their experiences: the second, *the use of color*. In the strategy of using color, the teacher can explain the material by using various writing tools such as colored chalk and colored markers to give specific codes to crucial points—the use of color to emphasize patterns, rules, or classifications during the teaching and learning process. Third, *Image Metaphor*. is the expression of an idea through visual imaging. The educational value of metaphor is establishing a relationship between what students already know and what is taught. Fourth, *Sketch Ideas*. This fourth strategy makes it easy for students to articulate their understanding of the subject matter. The idea sketch strategy, for example,



asks students to describe the key points, main ideas, central themes, or basic concepts being taught. And fifth, *Graphic Symbols*. It is the most traditional teaching strategy because it involves writing words on the blackboard. However, pictures may be essential for students' understanding of spatial tendencies. Ultimately, teachers who can support their teaching with graphic images and symbols, and words can reach a broader range of learners.

Visual-spatial intelligence involves the ability to see objects from multiple points of view. This intelligence involves being aware of color, line, the shape of space, size, and their relationship to these elements. Visual-spatial intelligence is often experienced and expressed by daydreaming, imagining, and acting. This intelligence is located in the right hemisphere of the brain, and if there is a problem in this section, it causes a disturbance in the ability to know other people. Visual-spatial intelligence stands out in the ability to imagine a tangible form and then solve various problems. Imagining a natural form will make it easier for students to identify problems and solve them.

The characteristics of visual-spatial intelligence from Yaumi (2018), and Julia (2021), which can be used for social studies learning in question, include a) easy reading of maps, pictures, or diagrams. With this visual intelligence, students tend to understand information through pictures than words in the form of narration. When reading books, students understand more information through pictures than reading descriptions. This will support students' understanding of the questions in the form of pictures because the flat material is material in the form of images that students can see; b) provide a clear visual picture when informing something. Students with this tendency will get used to explaining something with a visible picture; students will draw what is meant in the problem to make it easier to solve the solution.

Meanwhile, related to Google Earth education, the community website Google Earth Education Expert explains that Google Earth Education is one of the sources that can be used to teach geospatial thinking to students in real-world contexts, solve real-world problems, and encourage exploration. The real world outside the classroom walls in a new way. In practice, students need access to computers (Chromebooks) to get many lesson plans; even so, Google Earth Education is a suitable choice to be applied in social studies learning.

As for the material from social studies that can take advantage of the media Google Earth Education, it has been confirmed that it is related to the subject

matter of geography. Although the subject matter of other social studies relating to history, for example, also can be used as an attractive alternative learning media will be invited if the learners know the place where the relics of history it is (Borobudur, Demak Great Mosque, Heritage Majapahit palace complex, etc.). Google earth education is one of the application features developed by Google, with the headline "Bring the World into Your Classroom". Google Earth Education informs how to embed geospatial thinking into all types of subject matter for this paper is limited to social studies learning activities.

According to Muhammad Yaumi (2018), Google Earth is an excellent geography map browser for viewing, creating, and sharing interactive files that contain visually specific location information. Access to this feature is not restricted; anyone has access to Google Earth. The features provided by Google Earth will detect various natural phenomena that occur in any part of the world in this world, which can be easily witnessed without going to the destination directly. Therefore, using Google earth and maps in the classroom can help visualize abstract concepts to make them more accurate, with the features of this application being more interesting because it presents a three-dimensional model of the earth.

As an illustration, Basic Competencies and Basic Materials can use Google Earth Education as a learning medium to see the spatial intelligence of junior high school students in social studies subjects taken from the syllabus. However, only certain sections will be shown and used as examples for this article, meaning that they are not complete as contained in the social studies syllabus at the junior high school level.

**Table 1.** The Basic Competencies and Main Materials and Learning from High School Grade VII to IX

<b>Grade</b>	<b>Basic Competencies</b>	<b>Main Materials</b>	<b>Learning</b>
VII	3.1 Understanding the concept of space (location, distribution, potential, climate, shape of the earth, geology, flora, and	Indonesia's geographical conditions (location and area, climate, geology, appearance of	Learning scientifically oriented activities of learners with emphasis activities inquiry for critical thinking skills improve information



		fauna) and interactions between rooms in Indonesia and its influence on human life in economic, social, cultural, and educational.	the earth, water system, soil, flora, and fauna) through questions such as earth.	literacy and mastering information and communication technology.
VIII	3.1	Understanding changes spatial and interactions between spaces in Indonesia and ASEAN countries caused by natural and human factors (technology, economy, land use, politics) and their influence on the sustainability of economic, socio-cultural, political.	Geographical conditions of countries ASEAN(location and area, climate, geology, appearance of the earth, water system, soil, flora, and fauna) through a map of the earth	Problem-based learning by prioritizing inquiry and cooperative activities to foster critical, innovative thinking, collaborate to solve problems and improve information and communication literacy and communication skills .
IX	3.1	Understanding changes spatial and interactions between countries in Asia and other continents caused by natural, human factors and their effects on the sustainability of life in economics, social, education, and politics	Geographical conditions of the Asian continent and other continents (location and area, climate, geology, form of the earth, water system, soil, flora, and fauna) through the map of the earth.	Scientific learning is oriented to student activities by using inquiry activities to develop critical, creative thinking skills, improve media literacy skills, and master information and communication technology

Sources: Syllabus Model for Junior High School/Madrasah Tsanawiyah (SMP/MT's) Social Sciences (<https://bit.ly/MODELSILABUSIPSK2013jenjangsmpPDF>)



By looking at the table above, especially in the learning column, the demands to improve students' technical skills at Junior High School level in social studies subject. Starting from grade VII to IX, the ability to master media literacy and the ability to master information and communication technology is a necessity for students. Social studies teaching, social studies learning objectives are generally implemented to prepare students to become (good citizenship) and provide education to students so that they can think to continue the nation's culture. According to Sapriya (2017), the purpose of social studies at the school level is basically to prepare students as citizens who master knowledge, skills, attitudes, and values that can be used as decision-making abilities. Furthermore, it helps them to participate in various social activities to become good citizens.

By looking at the social studies learning objectives referred to above, it seems that utilizing Google earth as a learning medium is one solution to realize the mastery of information and communication technology skills. For students who already have spatial intelligence, of course, they will enjoy social studies more, while those who lack spatial intelligence will be interested. Because of them, junior high school students are millennial, familiar with technology from an early age, so it will be easy to follow. Furthermore, it is hoped that social studies learning will take place in a fun way, unlike what is often heard when social studies learning is boring.

**Table 2.** The Application of Media Google Earth Education in Social Studies Learning in Grade VII, VIII, and IX.

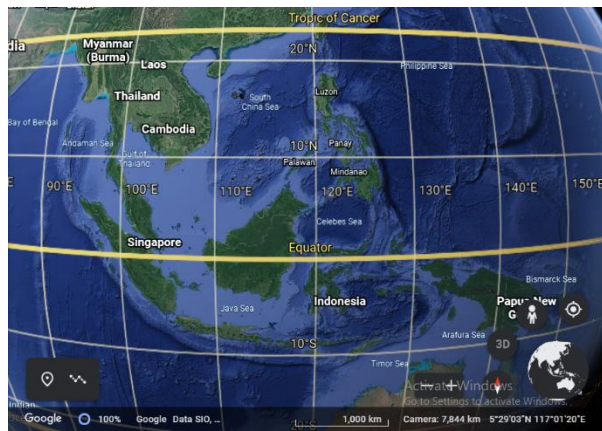
Grade	Topic	Media Application of Google Earth Education in Social Studies Learning
VII	Natural conditions of Indonesia	



Natural  
resources and  
potential  
maritime of  
Indonesia

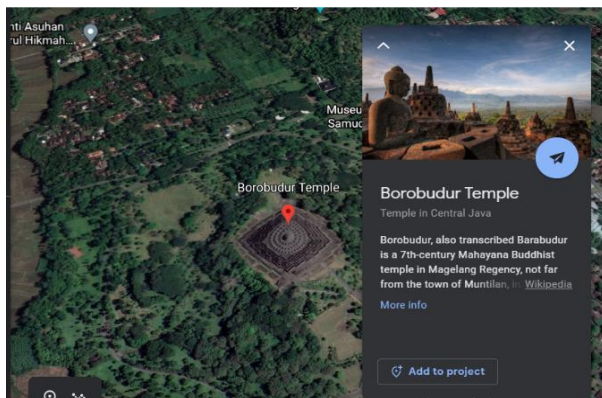


Location and  
area of countries  
in ASEAN

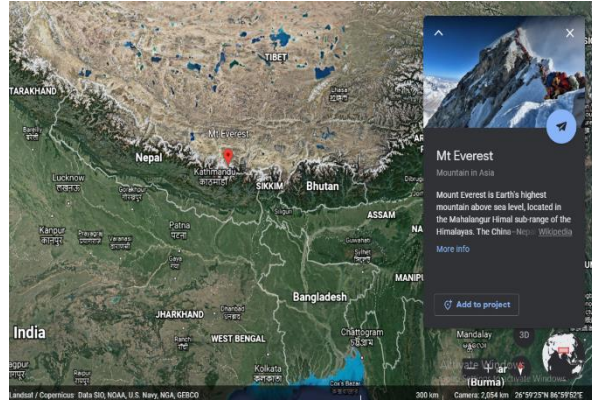


VIII

Getting to know  
the  
characteristics of  
ASEAN  
countries



IX  
Natural  
conditions of  
countries in the  
world



Source: Personal Data Analysis (2021)

Google Earth Education can be maximized and used as an alternative media for social studies learning in schools. The table above is an example of the application of media Google Earth Education for classes at grade VII to IX; it can be seen that each class is given two examples of material contained in the social studies subject book. In the class VII table, there is a competency "People, Place, and Environment", two materials to be discussed include material on the Natural Condition of Indonesia and Natural Resources and Indonesian Maritime Potential. In using Google Earth in the classroom, social studies teachers and students can search for the material, for example, the attached example is a screenshot of Indonesia's geological conditions regarding earthquake data, rising water waves, and the impact that occurred during the post-tsunami event in Aceh on December 24, 2004, ago, as well as material on Indonesia's maritime potential featuring screenshots of coral reefs on the Indonesian seabed.

Whereas in class VIII competence on "Spatial Interaction in Life in ASEAN Countries" discusses the location and area of ASEAN countries and recognizes the characteristics of ASEAN countries, you can search on the feature Google Earth Education regarding appropriate materials, so that examples such as in the table above, there is a virtual visual map that can produce natural astronomical lines and can also display the characteristics of a country you are looking for, for example, the State of Indonesia with the Borobudur temple. And then, at the grade IX level, you will learn the competence "Interaction between Asian Countries and Other Continents" regarding the natural conditions of the countries in the world and the dynamics of the population of



the world's continents. Attached to the table above is a satellite image of the different geographical conditions on Mount Everest, Nepal.

Thus, the advantage of using Google Earth Education as an alternative medium in social studies learning in schools is that besides students can see the shape, location, and geographical characteristics of a place, students can also find interesting information from a destination. Through the media and geographic learning can also help students explore visual responsiveness abilities so that students' spatial intelligence can be more visible.

Social studies teachers can develop their own according to learning objectives and the needs or characteristics of their students. Students are invited to search and find information or answers using Google Earth. With Google Earth, social studies certainly learning will be interesting (not dull) because students are invited to practice independently to find the information requested by the teacher. Features in Google Earth can detect various natural phenomena in the environment around students to any hemisphere. It will provide convenience when studying social studies subjects; judging from the syllabus since grade VII-IX, the ability to master media literacy and the ability to master information and communication technology is a must for students. Spatial intelligence already owned will be increasingly directed learners. At the same time, the less is expected to be interested, and learning will take place with a pleasant, without losing sight of the purpose of learning itself.

## **Conclusion**

Spatial intelligence is one of the eight bits of intelligence possessed or attached to students. Those with spatial visuals are students who prefer to think in pictures rather than words. Visual intelligence tends to think with pictures and is very good at learning through visual presentations such as films, pictures, videos, and demonstrations using visual aids. Of course, you will be enthusiastic and happy to learn social studies if the teacher uses media like the one above and one of them can use Google earth. Google Earth can be an option in the teacher's efforts to grow or improve the spatial intelligence of students in social studies subjects.

It needs readiness regarding technology skills that provide much convenience in delivering subject matter in the classroom. In this case, the teacher only



needs to choose a digital-based application that suits the characteristics of the students and the learning objectives themselves. By choosing the correct application, it is hoped that social studies learning in the classroom will provide new experiences for students. In this case, Google Earth is expected to grow and improve the spatial intelligence of students.

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