

A FRAMEWORK FOR LEARNING GEOGRAPHY ONLINE STRATEGY IN 21ST CENTURY LEARNING: A LITERATURE REVIEW

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ARTICLES INFORMATION

Article status:

Received: April, 12th 2022

Accepted: April, 15th 2022

Published online: August, 28th 2022

Keywords:

21st Century Learning, Online Learning, Geography, Scientific Approach

Kata kunci:

21st Century Learning, Online Learning, Geography, Scientific Approach

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ABSTRACT

The purpose of this research is to determine a strategic framework for learning geography online. The method used in research is literature studies with a qualitative approach. The data were collected from books, scientific journals, and relevant reading references related to this literature study. The results of this research show a strategic framework for learning geography online with a scientific approach starting from the planning stage, which is group permutation and choosing online learning platforms which are both synchronous (zoom or google meet) and asynchronous (whatsapp group or google classroom), stage of implementing online learning, which is applying scientific learning (observing, asking questions, gathering information, associating and communicating information) by combining online platforms which are synchronous and asynchronous then using the internet as sources of learning, and assessment stage, where three aspects are assessed, namely attitudes, knowledge, and skills. This research implies that technology-based or online learning should be implemented in learning activity, and it has become an obligation considering the changing times that prioritize technology.

Tujuan dari penelitian ini adalah untuk mengetahui sebuah kerangka strategi pembelajaran Geografi secara daring. Metode dalam penelitian menggunakan studi literatur dengan pendekatan kualitatif. Adapun sumber data yang digunakan bersumber dari buku, jurnal ilmiah, dan referensi bacaan yang relevan yang terkait dengan studi literatur ini. Hasil penelitian ini adalah kerangka strategi pembelajaran geografi daring dengan pendekatan saintifik dimulai dari tahap perencanaan adalah melakukan permutasi kelompok dan memilih platform belajar daring baik yang bersifat synchronous (zoom atau google meet) maupun asynchronous (whatsapp grup atau google classroom), pada tahap pelaksanaan pembelajaran daring adalah menerapkan pembelajaran saintifik (mengamati, menanya, mengumpulkan informasi, mengasosiasi, dan mengkomunikasikan informasi) dengan cara mengkombinasikan platform daring synchronous dan asynchronous lalu memanfaatkan internet sebagai sumber belajar, dan tahap penilaian, terdapat tiga aspek yang dinilai yaitu sikap, pengetahuan, dan keterampilan. Implikasi dalam penelitian ini keterlaksanaan pembelajaran berbasis teknologi atau secara daring ini seyogyanya merupakan suatu kegiatan pembelajaran yang telah menjadi suatu kewajiban mengingat perubahan zaman yang mengedepankan teknologi.

Introduction

There are various definitions and concepts of online learning which are a bit confusing. For example, digital learning (e-learning) and online learning are frequently considered to have the same meaning. However, the term e-learning has a wider range than online learning because the letter “e” in e-learning comes from the word “electronic” which can be interpreted that e-learning is the use of communication and information technology both in online and offline learning (Som Naidu, 2006). While a clear definition of online learning has been studied by Singh and Thurman (2019), and they conclude that online learning is learning conducted via internet/ online computer in a synchronous classroom where learners interact with teachers and other learners but do not depend on their physical location to participate online. Another opinion states that online learning is learning that uses internet network with accessibility, connectivity, flexibility, and the ability to bring up various types of learning interactions (Meda Yuliani, et al., 2020). Based on this definition, it can be concluded that online learning is learning that utilizes internet connectivity, advanced technology, information, and communication to create online classrooms in supporting the learning process that does not depend on the place.

In general, online learning classifications are divided into two types, namely synchronous learning and asynchronous learning (Hrastinski, 2008). Synchronous learning is regular face-to-face learning online in a real or direct time. This type of online learning allows direct interaction between teachers and students. At this time, platforms which are popular with a wearable to implement synchronous learning are Zoom and Google Meet apps. Asynchronous learning is online learning that does not require the intensity of direct or virtual face-to-face teacher-student interaction. The teacher only provides material, assignments, and evaluations in a predetermined application and allows students to try to find them independently within the time limit set by the teacher. Currently, online learning like this is mostly done in WhatsApp group and Google Classroom. Now, this type of online learning is widely used for the reason that it is simpler and does not take up a lot of internet data.

Distance learning which is online is not something new in the world of education. Isaac Pitman known Father of Distance Learning has introduced distance learning since 1840 in Bath, England by sending postcards containing assignment instructions to students (Hope Kentnor, 2015). Meanwhile online or distance learning online has been implemented in several countries in the world since the 1970s using email and computers (Linda Harasim, 1996). In Indonesia, online learning has also been around for a long time.

Although online learning has been around for a long time in Indonesia, the habit of fully online learning, such as during the COVID-19 Pandemic, is a new habit for the world of education in Indonesia. As a result, many of online learning are not effective. Even if you refer to the research data entitled “Teaching and Learning during School Closure: Lesson from Indonesia”, it was found that in online learning during the COVID-19 pandemic, there was around 60-70% of teachers interacted directly with students or through parents of students, 10% of teachers only assigned tasks to students without any assistance or interaction, then the teacher transferred learning through the media others such as watching educational broadcasts on TVRI (Senza Arsendy, 2020). So, a lot of online learning is very ineffective.

According to Haidir and Salim (2012), one of the indicators of an effective learning is if a teacher can determine and use appropriate learning strategies. Therefore, teachers and prospective teachers in Indonesia must have the ability to determine and use the right online learning strategies, so that online learning can take place effectively. This effort was carried out not only to prepare online learning due to the COVID-19 Pandemic but to prepare online learning that will increasingly take part in the era of the Industrial Revolution 4.0 and even Society 5.0.

Learning strategies are the ways chose to deliver the subject matter in a particular learning environment, which includes the nature, scope, and sequence of activities that can provide learning experiences to students (Gerlach, Ely, and Melnick, 1980). Learning strategies can also be interpreted as a sequence of procedures to complete learning and specific procedures, in this sequence are called learning techniques (Snowman, 1986). Thus, it can be concluded that learning strategy is a series of methods chosen to carry out learning so that learning objectives are achieved.

Online learning strategies that need to be mastered are online learning strategies with a scientific approach. Scientific learning is recommended learning in Indonesia for all subjects and all levels of education through Permendikbud Number 22 of 2006 concerning Basic and Secondary Education Process Standards (Yani and Ruhimat, 2013). The steps of scientific learning are in order, namely observing, asking questions, looking for data or information, associating, and communicating information. A teacher of course

must still be able to carry out scientific learning according to the 2013 Curriculum guidelines even though it is online. Therefore, it is very important for teachers' knowledge and understanding in developing and implementing effective learning strategies to be used when online learning with a scientific approach.

21st Century Geography Learning Paradigm

Essentially, education itself is a process that cannot be separated from human life (Suhendro, et al., 2020). The role of education in preparing a generation who is ready to face the life of the 21st century is vital. Therefore, the Partnership for 21st Century Skills (P21) has prepared a framework for 21st century skills that students must master in learning and the ability to innovate (Learning and Innovation Skills) namely creative, critical thinking, communicative, and collaborative (P21, 2019). The four skills must be fully integrated into the learning process to produce human resources who are competent and skilled in facing the life of the 21st century.

Partnership for 21st Century Skills also recommends 9 core subjects that students must master in the 21st century, one of which is "Geography" (P21, 2019). Studying geography aims to equip students with geographic knowledge, abilities, and perspectives in a way that students must learn how to use geographical thinking and information to make reasoned decisions and to solve personal and group problems (Hefron and Downs, 2012). Meanwhile, the International Geographical Union Commission on Geographical Education (2016) quoted by Van der S J. (2020) defines geography as a science that studies the Earth and its surrounding natural and human environment. Geography allows the study of human activities and their relatedness and interaction with the environment from a local to a global scale.

Expertise or skill that students must master after studying Geography in the "Geography for Life" curriculum, at the K12 or SMA level is as follows (Berdnartz, Hefron, and Hyunh, 2013) including (1) Asking geography questions, (2) Collecting geographic information, (3) Managing geographic information, (4) Analyzing geographic information, (5) Answering questions and designing solutions, and (6) Communicating geographic information.

In Indonesia, Geography is only studied independently at the high school level. However, Geography learning following the 2013 Curriculum currently applies to the 21st century education paradigm. This can be seen in the geography learning objectives listed in the "Geography Subject Syllabus of 2013 Curriculum" which integrates critical, creative, communicative, and collaborative thinking. The following is the formulation of Geography learning objectives based on the 2013 Curriculum.

1. Thinking critically and being able to overcome problems related to changes in space on the Earth's surface, damage and efforts to conserve the environment, distribution and use of natural resources, and the various impacts of changes due to geosphere processes in local, national, and global contexts;
2. Creating and updating the physical environment and social environment as a resource that can be utilized as much as possible for human welfare which is managed wisely by upholding the values of tolerance for the nation's cultural diversity;
3. Information technology, media, and communication literacy are related to map management, remote sensing imagery, and Geographical Information Systems (GIS) which can be applied as a geographic analysis tool for policy-making at local, national, and international scales.
4. Contextual learning is an integral part of understanding problems independently and sustainably.
5. Cooperating and communicating to establish relationships (connections) between spaces in the form of people, goods, and services in a national and international environment by continuing to show love for the country, being proud of being the Indonesian nation, and being responsible for the integrity of the Unitary State of the Republic of Indonesia which is based on Pancasila and the 1945 Constitution.

The 21st century geography learning paradigm that has been described must be one of the considerations in determining the framework for online geography learning strategies. The aim is that teachers can easily transfer knowledge to students to be able to acquire 21st century skills, even though learning is done online.

Barriers to Learning Geography Online

Currently, some situations are plaguing various countries regarding the spread of the COVID 19 virus, impacting various sectors, one of which is education. In the education sector, for example, teachers and students will be accustomed to conducting distance learning interactions (Rosali, 2020). In Indonesia itself, online learning carried out massively by various levels of education units during the COVID-19

Pandemic had many obstacles. Based on research conducted by Jamaluddin, et al. (2020) mention three main factors that hinder online learning, namely (1) limited quotas, (2) unstable networks, and (3) piling up tasks.

Internet quota limitations are closely related to the economic conditions of students' parents. However, this problem has been resolved with the assistance of internet quotas from the Ministry of Education and Culture of the Republic of Indonesia. This means that the limited quota factor cannot be used as an excuse that could hinder online learning. The problem of unstable networks is common because online learning requires the support of good internet access speeds. Meanwhile, evenly distributed internet access speed in Indonesia is still not evenly distributed because in 2018 there were still 8% of areas that had not been reached by the internet network, 25.73% had weak speed internet access, and only 66.2% had access to strong internet speeds (BPS, 2018).

Piling up tasks for students is one of the big obstacles in online learning. There are still many teachers who only give assignments to students during online learning. So that students and even parents of students often complain about the large number of tasks that accumulate during online learning which becomes a burden for students (Atsani, 2020). On the other hand, learning in the 2013 Curriculum applies a scientific approach that is difficult to adapt. There are at least 4 problems that are often faced by teachers in implementing scientific learning, namely (1) the object of observation is quite broad, (2) natural processes on earth take a very long time, (3) the distribution and potential of various schools, and (4) lack of facilities and learning infrastructure in schools (Yani and Ruhimat, 2018).

Specifically, for geography subjects, the object of geography study is very synonymous with natural and social phenomena. Meanwhile, online learning cannot simply let students observe natural and social phenomena without being directly guided by the teacher. However, it is not impossible if scientific learning can still be done online. The key is to use the internet as a source of information on natural and social phenomena that students can observe.

Scientific Approach

The term 'scientific' comes from Latin, namely 'scientia' or in English 'science' which means knowledge or notification (Yani and Ruhimat, 2018). As we know, to gain knowledge or science one has to use structured scientific methods and rules. The scientific method can find knowledge starting from problems and difficulties such as the absence of tools to deal with difficulties, the difficulty of problems, and difficulties in explaining the causes of a problem (Ali, 1993).

Furthermore, the scientific approach is a learning approach that gives students the opportunity to explore and elaborate on material and actualize their abilities when learning takes place (Rusman, 2015). Another opinion says that the scientific approach was designed to make students able to see, understand, and practice the material studied scientifically (Muhammad and Nurdyansyah, 2015). It can be concluded that the scientific approach is an approach that gives students the opportunity to see, understand, practice, and communicate scientifically information that they learned.

In the 2013 curriculum, the steps for a scientific approach include (1) observing, (2) asking, (3) gathering information, (4) associating, and (5) communicating (Yani and Ruhiman, 2018). There are three principles that must be considered in scientific learning in which students must be actively involved, the scientific approach develops various approaches, and the scientific approach invites students to formulate questions and answer them through observation or experimental activities (Muhammad and Nurdyansyah, 2015).

To answer these problems, the author will focus on the discussion of making an online learning strategy framework with a scientific approach, especially for geography subjects. Geography subject is used as the object of study in this study because it is following the researcher's field of science. Besides, there are a lot of geography materials that are difficult to explain online with a scientific approach, so special strategies are needed to overcome them. Meanwhile, the purpose of this study is to find a frame of mind regarding online geography learning strategies.

Method

The method in this research is descriptive research with a qualitative approach. The purpose of carrying out this research is to determine a framework for online geography learning strategies with a scientific approach that can later be used by teachers or prospective teachers in implementing online geography learning. The data collection technique used is secondary data collection techniques with

literature studies. Researchers collected data about obstacles in the implementation of online learning, online learning theories and concepts, and online learning principles. The qualitative data will be analyzed qualitatively as well to produce an online geography learning strategy framework with a scientific approach.

Results and Discussion

Learning strategies are the methods chosen by the teacher in delivering material to students. These methods can be fulfilled by compiling several components of a learning strategy such as introduction, information delivery, student participation, tests, and follow-up activities (Dick and Carrey, 1996). Based on these five components, it can be narrowed down to three main components of a learning strategy including planning, implementation, and assessment. The four components will be used as the basis for determining the framework for an online geography learning strategy. At the implementation stage, after the teacher provides an introduction, the scientific approach must be entered in sequence, starting from observing, asking questions, gathering information, associating, and communicating the results.

For the implementation of online learning with a scientific approach to be carried out well, the learning strategies used must be able to combine several principles, namely (1) paying attention to individual differences, (2) motivating students, (3) avoiding excess information or material, (4) making material context in real life, (5) encouraging social closeness between teachers and students, (6) giving assignments to students, and (7) providing reflection to students (Jhonson and Aragon, 2003). The following is the result of developing an online geography learning strategy framework with a scientific approach as outlined in the form of a Figure 1.

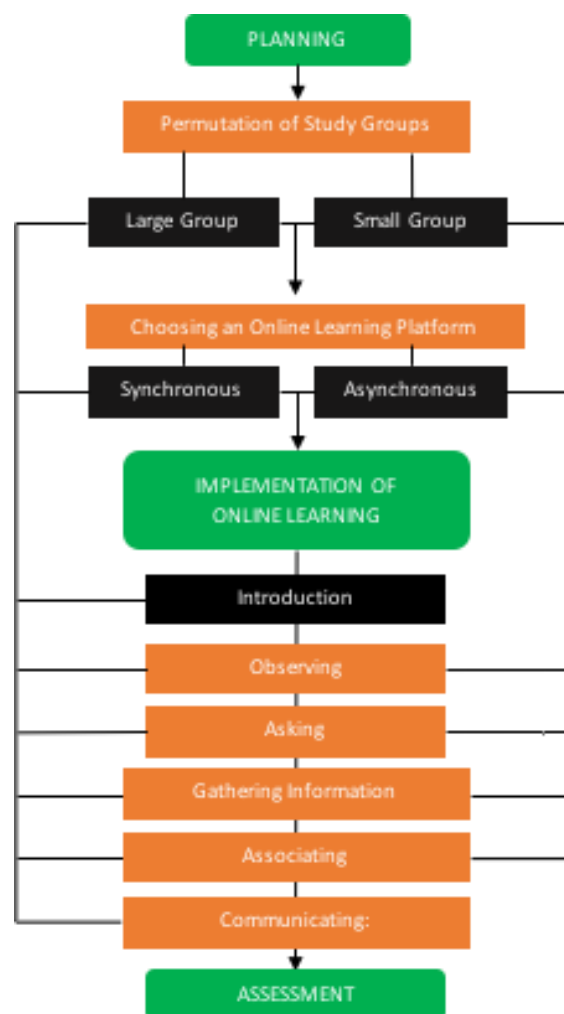


Figure 1. Online Geography Learning Strategy Framework with Scientific Approach
Source: Research Framework (2021)

Based on Figure 1, it can be interpreted in three stages including the planning stage, the implementation stage, and the assessment stage. The following part is a more detailed description of the three stages.

Planning Stage

At the planning stage, there are several strategies that teachers must do in planning geography lessons online. These strategies are:

1. Permutation of study groups; A permutation of study groups is a teaching strategy in grouping students into groups so that students can learn and work together effectively and efficiently. This strategy begins by creating a WhatsApp group and a Google Classroom consisting of all class members who will study geography. Then the teacher divides it into small groups consisting of 4-6 members per group. Furthermore, these groups also created WhatsApp groups independently to make it easier for them to coordinate and communicate when there was a group assignment from the teacher. The formation of small groups in this kind of online learning can make it easier for students to share tasks and points of view and can build collective knowledge (Kumi Yeboah, 2018).
2. Choosing an online learning platform; many online learning platforms are developing today. However, in general, these online learning platforms are synchronous and asynchronous. This follow for different synchronous and asynchronous is follow Table 2.

Table 2. Online Learning Platforms Are Synchronous And Asynchronous

An online learning	Asynchronous online learning
An online platform that is synchronous is an online platform that allows teachers and students to communicate in person or realtime and face each other virtually. Several online platforms are synchronous the most recommended at this time are Zoom and Google Meet. The advantages of the platform are synchronous enabling direct communication, being able to clarify ideas quickly, and easily providing feedback and answers (Xie, Liu, and Bhairma, 2018). While the weakness is that it requires a good internet speed and a large data quota. Learning activities that can be done with a platform that is synchronous including presentations, lectures, discussions, and questions and answers.	An asynchronous online platform facilitates the communication of teachers and students indirectly. Asynchronous online learning is also specially planned so that students can learn independently, where teachers and students are at different times and places (Doo Hun and Morris, 2009). Therefore, this learning requires good and clear teaching materials or instructions so that students can learn independently. As for online learning platforms asynchronous, the recommended ones to use are WhatsApp Group and Google Classroom. The advantages that are obtained if you choose an asynchronous platform are having a flexible time and place, not requiring high internet speeds, saving data packages, and students being able to learn independently. While the weakness of learning asynchronous is limited interaction, difficulty to provide feedback, and difficulty controlling the class. Learning activities that can be done with a platform that is asynchronous including giving material, giving assignments, and giving tests. In scientific learning, activities that can be done with this type of platform are observing, questioning, gathering information, and associating because of its nature which provides independence in learning.

The selection of these types of online platforms can be done by combining the platforms synchronous and asynchronous. The form of the combination will be explained in more detail at the implementation stage.

Implementation Stage

The strategy of implementing online learning with a scientific approach has six stages that must be carried out. The six stages are an introduction, observing, questioning, gathering information, associating, and communicating the results.

1. Introduction Stage

The things that must be done by the teacher include conveying learning objectives, motivating students, and reflecting on previous learning. Preliminary activities are better carried out using an online platform

synchronous namely Zoom or Google Meet. So that the teacher in conveying goals, providing motivation, and reflecting can run well and interactively.

2. Observing Stage

Students are directed to see, observe, and find problems that exist in various sources of data and information presented by the teacher in various forms such as books, videos, secondary data, and so on (Yani and Ruhimat, 2018). In online learning, this activity can be done in large groups using an online platform synchronous like Zoom and Google Meet. The teacher first presents data or information in various forms such as videos, e-book, picture, sound, table, graph, slide show, and articles or a combination of two or more into a large group or class WhatsApp group. Then the teacher explains clearly what students should do with this data and information. Activities that can be done such as summarizing and answering questions on the information presented. Furthermore, students independently carry out the observation process using an online platform asynchronous like WhatsApp Group according to each group.

Students must be sure to be fully involved in the observation process. This is done so that students observe the information presented by the teacher. For example, if the teacher presents information in a video, then students must be sure to watch the video until it's finished and record what the teacher has assigned. In online learning, this supervision is difficult because teachers and students are in different places. However, several efforts can be made to attract the attention of students so that they make observations, namely:

- a) Presenting information or data that involves the emotions or feelings of students. For example, students are directed to observe natural disaster events in disaster mitigation material. So, present information on natural disasters in the form of pictures and videos that show the process when a disaster occurs and the impact or damage caused by the disaster. Also present graphs of data on casualties and the number of losses incurred as a result of the disaster. Through such a presentation, students' emotions will be carried away and motivated to continue observing the disaster information until it is finished. This opinion is supported by the results of research by Mega, Ronconi, and De Beni (2014) which state that the emotional condition of students is very influential on learning motivation, independent learning, and academic achievement.
- b) Packaging information or data attractively in terms of selecting titles, colors, images, animations, and sentences that are attractive and easy to understand. For example, students are directed to observe the process of rain on hydrosphere material using video media. So present the video with attractive, colorful animation, and provide a narrative that is easy to understand so that students will be interested and focus on watching the video until the selection. This opinion is supported by research conducted by Al-Ayash, Kane, and Green (2016) which shows that the influence of color variations on the emotions, feelings, and reading performance of students.
- c) Observation activities are kept short but fun. One of the principles of online learning is reducing redundant information so that students are not burdened with heavy tasks that make learning ineffective. For example, students are directed to observe the distribution of flora and fauna in Indonesia. So it is better if the information presented to be observed by students in each group only focuses on the flora or fauna from the three areas of the distribution of Asiatic, transitional, and Australian. The more information that is observed, it will burden the short-term memory of students (Jhonson and Aragon, 2003). More clearly Clements (1985) has provided "Role of Seven" which suggests not presenting more than seven pieces of information at a time.
- d) Presenting information or data in various media such as e-book, images, sound, video, animation, slideshows, articles, and others. For example, students are directed to observe the characteristics of developed and developing countries. So the information presented can be in the form of a map of the distribution of developed and developing countries, pictures of examples of developed and developing countries, a comparison table of the characteristics of developed and developing countries, and so on.

3. Asking Stage

Students are directed to explore problems from previously observed information. Students' questioning skills can be trained by making 5W + 1H questions (what, when, where, who, why, and how) (Yani and Ruhimat, 2018). The questioning activity begins with teacher explanations and briefings to students via an online platform synchronous namely Zoom or Google Meet. Furthermore, students use the platform asynchronous like WhatsApp Groups respective groups. They independently coordinate with their groups to formulate questions from the information they have observed. Each student or group member formulates

at least one question so that all students can be involved in questioning activities. For students to easily make questions about the problems found, the teacher can explain Creswell and Poth's (2007) opinion about grouping questions into three types:

- a) *Descriptive, which is a question used to explain a phenomenon. Descriptive questions mostly use the question word "what". For example, "what caused the tsunami in Palu"?*
- b) *Explorative, which is a question that is used to understand a phenomenon in depth. The form of exploratory questions uses the question word "how". For example, "what was the process of the tsunami in Palu?"*
- c) *Explanatory, which is a question that is used to explore the relationship or influence of a symptom or phenomenon. For example, "is there a relationship between the seabed earthquake and the tsunami in Palu?"*

4. Gathering information Stage

The stage of gathering information or experiments normatively can be done through (1) experimental activities in the laboratory, (2) digging up information in newspapers, magazines, and textbooks, (3) searching for information via the internet, (4) observing objects or phenomena in the open, (5) interviews, (6) distributing questionnaires (Yani and Ruhimat, 2018). However, in online learning, the most recommended information gathering activity is via the internet only. Learners collect information based on questions or problem formulations that have been made at the questioning stage. Information gathering activities can be carried out by combining online platforms synchronous and asynchronous. First, the teacher explains the procedure in the stage of gathering information using Zoom or Google Meet to all students. Then students independently use the platform asynchronous namely WhatsApp Groups to coordinate and discuss with their respective groups. For all students to be involved in this activity, make sure each group member gets a minimum quota of 1 question formula for them to find information on the internet.

Learners can take advantage of search engines such as Google, Yahoo, and Bing to find the desired information. The information that students get can be in the form of tables, pictures, graphs, and articles. However, they have to sort out the information so that it is easy to understand. Students are also required to record and include the source of the information they get, such as the website address and the author. For example, students want to find information about "What causes flooding in South Kalimantan?". They can use Google to search for this information by creating keywords "causes of flooding" or "causes of flooding in South Kalimantan". Then they entered a website that contained articles about the causes of flooding in South Kalimantan. Then they collected points that caused flooding in South Kalimantan, such as high rainfall, land conversion, illegal logging, and river narrowing. They can also look for additional images that can support this information.

5. Associate Stage

In scientific learning, the stage of associating is a process of processing information so that it can link information with other information, find patterns of information linkages and conclude it (Yani and Ruhimat, 2018). Essentially, the information they have obtained is analyzed in-depth and conclusions are drawn. In online learning, this activity begins with teacher directions to students in carrying out the association process using Zoom and Google Meet. Then each group independently discussed in small groups using the WhatsApp Group of their respective groups to associate the information they got.

For example, students have received information about the causes of floods in South Kalimantan, namely high rainfall, forest conversion, illegal logging, and narrowing of river boundaries. So then they analyze and link the four causes into a narrative that is easy to understand, for example:

"The conversion of forest land to oil palm plantations has caused South Kalimantan to lose its water catchment areas. As a result, when the rainfall is high, rainwater cannot be absorbed optimally and spill over to residential areas. Not only that, the large rivers that began to narrow also hampered the flow of water downstream. As a result, parts of the lowlands in South Kalimantan were flooded".

These narratives can be supported by displaying pictures of forest conditions in South Kalimantan, pictures of river flow conditions that are starting to narrow, data on casualties due to flooding, pictures of flood conditions, and so on. Furthermore, the narrative and supporting data are compiled in a paper or slide to be presented at the stage of communicating information.

6. Communicating Information

The last stage of scientific learning is to disseminate or present the results of the process of associating information (Yani and Ruhimat, 2018). Students can communicate the information they have previously obtained individually or in groups to their classmates in turn. Types of activities that can be carried out at the information communicating stage can be in the form of presentations or other activities so that the learning process and information mastered becomes more meaningful (Meliawati, Suarjana, and Mahadewi, 2015).

In online learning, this stage is very suitable if it is done using an online platform synchronous like Zoom or Google Meet. The teacher in turn appoints each group to present the results of their work starting from the stage of observing, asking, gathering information, to associating using PowerPoint slides in front of teachers and classmates online. Powerpoint slides can contain descriptive data, pictures, tables, or illustrations about the information they get. Other groups are allowed to submit criticisms, suggestions, and questions to the group currently presenting. Besides, teachers are also expected to be able to straighten out the ideas and ideas of students who are deemed inappropriate. Therefore, online platforms synchronous is very suitable to use because it allows direct interaction, is easy to provide feedback, and easy to clarify ideas (Xie, Liu, and Bhairma, 2018).

By communicating information related to activities, teachers can see and optimize the potential of students according to their respective interests and talents (Yani and Ruhimat, 2018). For example, students who are gifted in design or drawing can play a role in making illustrations of the material to be presented. If there are students who are proficient in ICT, then they can help the group in making interesting PowerPoint slides. However, most importantly, teachers can see and optimize students' communication skills or public speaking.

Assessment Stage

After the teacher concludes the learning activity, the next step is to carry out an assessment. Basically, the assessment itself is a term defined as the process of gathering information to make decisions about students, curriculum programs, educational policies (Nitko, 1996; Munandar, A., et al., 2020). In the assessment, especially in the 2013 curriculum, it is recommended to use authentic assessment. Authentic assessment is an assessment that is carried out during the learning process (Yani and Ruhimat, 2018). So the teacher during the online learning process must bring an observation sheet to observe students, especially for attitude assessment. In the 2013 Curriculum learning, the aspects assessed consist of aspects of attitude, knowledge, and skills (Sani, 2016). The follow for different attitude, knowledge and skills in Table 3.

Table 3. Attitude, knowledge and skills in Assessment

Attitude (Affective)	Knowledge (Cognitive)	Skills (Psychomotor)
The attitude assessment in the 2013 curriculum consists of honesty, courtesy, confidence, cooperation, tolerance, responsibility, and discipline. Assessing all aspects of attitudes in online learning is quite difficult because teachers and students do not meet directly so that the process of observing attitudes is limited. However, the teacher can still assess the attitudes of students by observing and recording the attitudes of students who are observed according to the observation sheet that is held. For example, when students often suddenly turn off the camera when using zoom without the permission of the teacher, these students get poor ratings on disciplinary aspects. So the attitude assessment on online learning can still be done even though it is limited.	The process of assessing knowledge can be done by conducting tests. The type of test that is recommended for online learning is a written test because it does not require a lot of time, money, and energy resources. Teachers only need to prepare written test kits both essays and multiple-choice created using google form. The link to the test questions that have been created is then distributed to students to be worked on according to the time limit set by the teacher. Make sure that the questions made do not open up opportunities for students to cheat, so the type of test that is recommended is an essay.	The assessment of skills has characteristics, namely (1) students are asked to demonstrate or present their ability to make products and (2) assess the results of products that have been done by students (sani, 2016).

Conclusion

The 21st century geography learning paradigm cannot be separated from students' ability to think critically, creatively, communicatively, and collaboratively. As for skill which must be mastered in the 21st century after studying geography for high school level are (1) asking geographic questions, (2) collecting geographic information, (3) managing geographic information, (4) analyzing geographic information, (5) answering questions and design solutions, and (5) communicating geographic information. Meanwhile, the most common obstacles to implementing online geography learning are (1) limited internet quota, (2) unstable networks, and (3) piling up tasks. In general, the framework for online geography learning strategies with a scientific approach contains planning, implementation, and assessment activities.

At the planning stage, things that must be done by the teacher are doing group permutations and choosing good online learning platform which are synchronous (Zoom and Google Meet) or asynchronous (WhatsApp and Google Classroom). At the implementation stage, the teacher implements geography learning online with a scientific approach that starts from observing, asking questions, gathering information, associating, and communicating results. The stages of online scientific learning can be carried out by combining online platforms synchronous and asynchronous. Finally, the teacher conducts an assessment that includes aspects of attitude, knowledge, and skills. Teachers can assess students' attitudes when online learning is taking place with the help of observation sheets. Meanwhile, the knowledge assessment was carried out through a written test which was carried out online. While the skills assessment is carried out by looking at the results of student work in the form of PowerPoint slides as well as papers.

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