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The importance of science literacy and how to improve science literacy ability of elementary school students

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ABSTRACT

Scientific literacy is a scientific ability possessed by someone that is used and applied in life. Scientific literacy is useful for understanding and dealing with problems in everyday life. This study uses the study literature research method or literature study by reviewing various journals that have a relationship or relationship with scientific literacy. Based on the research results, efforts that can be made to improve scientific literacy skills in students can be done through the application of learning with a scientific approach, by applying the discovery learning model using audio-visual media, using computer-based learning media in science learning, using creative problem solving methods, applying the Project model based learning, development of science modules, and can also be done by applying the community science technology model.

Key word: learning models, scientific literacy

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Introduction

One of the important skills to master in the 21st century is scientific literacy. Scientific literacy is a life skill in which scientific knowledge is used as the basis for everyday life. Science literacy ability is the ability to think critically, scientifically and use it in developing skills and making decisions. In improving scientific literacy skills in elementary school students, this science degree is an important aspect to be developed. Along with advances in information technology, the development of education is increasingly experiencing change and encourage businesses change for the better. The educational process has shows rapid development in the field of curriculum, learning methods, and facilities support is more advanced. Overall it can be said that the changes that occur is a

reform in the education system to balance the progress of science and technology global. Stated that education can also be a power to do changes to make a situation better.

Increasing the nation's competitiveness in keeping up with the developments of the era of globalization is important strived. Conditions experienced by the nation Indonesia at this time is not many sources human resources (HR) who are able to follow optimal advancement of science and technology. HR that needed to be able to compete in the era of globalization are qualified human resources, capable of compete globally both in terms of thought, expertise, and skills. For creating quality human resources is certainly close relation to education which plays a role in give birth to the next generation of people who are able to compete in the international world because education contributes greatly to prepare national cadres. Education that quality directs the formation of values what students need in taking life.

Method

This study uses the study literature research method or literature study by reviewing various journals that have a relationship or relationship with how to improve the scientific literacy skills of elementary school students. The literature study method according to Sugiyono (2018) is a method which collects theoretical studies and references sourced from scientific literature. So, in this literature study method, researchers do not need to go out into the field to find information, but rather simply examine and conclude based on sources obtained from various literatures. This study aims to find out various ways that can be done to improve the scientific literacy skills of elementary school students.

Results and Discussions

The results of this article are obtained by searching, reviewing and reviewing journals and references related to how to improve the scientific literacy skills of elementary school students. Education is directed to prepare students to be successful in the 21st century. Science literacy skills are important skills to be developed in the 21st century. Science literacy is a science based skill in today's life. This scientific literacy ability demands that we think critically, scientifically and utilize that ability to develop skills and make decisions. (Pratiwi et al., 2019). Scientific literacy is a person's scientific ability that is used and applied in life. Scientific literacy is useful for understanding and dealing with problems in everyday life (Fitria, 2017). Scientific literacy is supported by several things, including the education system, curriculum, selection of learning methods and models, learning resources, learning facilities and others. One of the factors related to the learning process of students and influencing scientific literacy skills is the choice of models and methods used by teachers in teaching.

Science literacy is important because scientific literacy is the ability about science that students can use to solve life problems for a better daily life. Science literacy is important for students to understand the environment, economy, health, and other problems that occur and depend on the development of science and technology. Science literacy is centered on science. Science is a field of science that studies nature systematically, where studying science is not only limited to knowing concepts, but also how the process of discovering a scientific science is (Nofiana & Julianto, 2018).

Scientific literacy includes several things, namely: scientific knowledge and the ability to use knowledge to gain new knowledge, identify problems that occur, explain scientific phenomena, and draw conclusions according to existing evidence relating to science, understand the main characteristics of knowledge that humans build through the

process of inquiry, are sensitive in observing science and technology, have a willingness to involve users in self-taught if it's a related idea. Scientific literacy skills need to be improved through various efforts. One of them can be through scientific learning. If applied scientific learning, it can stimulate the attractiveness of students to scientific issues through inquiry methods and spur students to be responsible for their environment (Asyhari, 2015). The application of this discovery learning model has been proven to improve students' scientific literacy skills. This can be seen in the results of research which shows the average score percentage of the measurement of scientific literacy skills of students can reach a percentage of 81.5% in the high category (Niswatuzzahro et al., 2018).

Science literacy is an ability that must be possessed by students, because it is related to the surrounding environment. Scientific literacy is assessed by taking into account aspects of the process, knowledge, application, and attitudes of students to science. One of them is through learning modules. This is what triggers the development of learning modules in science using a scientific approach (Usmeldi, 2016) The scientific literacy ability of students can also be increased by using computer-based learning media in science learning, namely in the form of interactive e-books, multimedia learning, animated videos, e-modules, and android-based media. The impact of using computer-based science learning media is in the form of students' scientific literacy skills. (Latip & Faisal, 2021).

Experimental activities carried out in science are an effort to increase scientific literacy which was previously not optimal. Science learning should make students experience direct learning such as making observations, making decisions and drawing conclusions related to science, the environment and society. The elements of science learning to develop scientific literacy include formulating indicators, inserting parts of scientific literacy and including scientific literacy in the syllabus and lesson plans. To evaluate the achievement of efforts to improve scientific literacy skills, we can do by paying attention to the criteria of questions that are broad, have links between concepts, analyze problems and provide statements, the questions given vary based on matters related to the environment, technology and society, and this is presented in the form of data containing information. For teachers of science subjects, the process of integrating science has the benefit that the content of the science subjects provided can raise aspects of scientific literacy which include content, processes and applications of the scientific literacy skills (Situmorang, 2016)

Scientific literacy is knowledge and scientific ability to be able to examine questions to gain new knowledge, provide explanations for scientific events, and make conclusions in the form of facts, understand the characteristics of science, and provide confirmation that science and technology can shape the intellectual, natural and cultural environment. In the 2013 curriculum, empowering scientific literacy skills can be done with a scientific approach. The scientific approach makes students the center of learning, and emphasizes students to apply the inquiry process in the scientific learning stage. In the scientific approach, students are required to actively find concepts in learning (Narut & Supardi, 2019).

Science literacy learning can be said to be successful if students can understand what is learned and students are able to apply it in various aspects of life, science literacy learning requires students to be able to understand a lesson (Pertiwi et al., 2018). The development of scientific literacy is carried out by educators to increase knowledge, vocabulary, and the relationship between science, technology and society to learn about natural sciences. The hope to be achieved in learning scientific literacy is that students have the ability and scientific understanding, the ability to obtain information and answer questions related to everyday experiences. (Kusuma, 2016).

Science literacy learning focuses on learning that does not require students to memorize scientific theories but is also required to be able to carry out the process of learning to achieve scientific skills. Learning iteration of science should be carried out scientifically and inquiry that is useful for developing the ability to think, act and behave scientifically, and be able to re-communicate that knowledge which is important in life skills. In science literacy learning, students are required to be active in learning so that the learning obtained by students can last a long time. .Science literacy learning will be very meaningful when the learning is associated with everyday life (Yuliati, 2017)

In responding to social issues circulating, scientific thinking skills are needed. To understand the environment, economy, health, technology and modern social science literacy skills are needed. So, so that the quality of Indonesian education can improve and compete with other countries, good scientific literacy skills are needed (Pratiwi et al., 2019). Involving active students in learning and creating fun learning is an important factor in developing scientific literacy for students. Which factor will make it easier for students to understand science. In learning science the teacher has many choices of methods to be used, including Creative Problem Solving (Cahyana et al., 2017)

The project-based learning model is a model that makes students the center of learning and makes students experience direct and more meaningful learning. A model like this can improve students' scientific literacy (Afriana et al., 2016). Improving students' critical scientific literacy skills can also be done by applying the community science technology (STM) model (Rahayuni, 2016). In addition, problem-based learning will also increase students' scientific literacy skills. This is indicated by the results of research in each cycle the average value increases (Betari, 2020).

Conclusions

So based on the results of the research, it can be concluded that the guardianship of the rest of science is a scientific ability possessed by a person that is utilized and applied in life. Scientific literacy is useful for understanding and dealing with problems in everyday life. Application of discovery learning models, using computer-based learning media in science learning, using creative problem solving methods, applying project based learning models, developing science modules, and can also be done by applying community science technology models.

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