Application of Strategy SQ3R (Survey, Question, Read, Recite, and Review) in Learning Science on Energy Materials in Living Systems

Riswel Asrita[1*], Asmendri[2]

[1] *Department of Islamic Education Management, IAIN Batusangkar, Indonesia*
[2] *Department of Islamic Education Management, IAIN Batusangkar, Indonesia*

Abstract

This paper is motivated by students' lack of motivation and enthusiasm in learning science, which results in a decrease in science scores. Science learning should ideally activate and encourage students to work scientifically. So far, science teaching at SMP Negeri 11 Sijunjung has used chiefly the lecture and question and answer method. For this reason, how to apply the SQ3R Strategy (Survey, Question, Read, Recite And Review) in science learning on Energy in Living Systems can be formulated. This paper aims to increase students' activeness and critical thinking by applying the SQ3R (Survey, Question, Read, Recite And Review) strategy in science learning on Energy in Living Systems.SQ3R strategy is a reading strategy that can help and encourage students to understand better what they read. The SQ3R strategy allows students to learn systematically, effectively, and efficiently in dealing with various teaching materials. Applying the SQ3R strategy in science learning in class VII.1 of SMPN 11 Sijunjung can increase students' interest, motivation and learning outcomes. This is proven by students being active and focused readers so that they can understand the implied and explicit reading content effectively, an increase in students' communication skills, and differences in the average value of learning outcomes that have increased.

Keywords*: Strategy, SQ3R, Science*

1. Introduction

Science is a systematic effort to create, build, and organize knowledge about natural phenomena. This effort begins with human nature, which is full of curiosity. This curiosity was then followed up with an investigation in order to find the simplest but most consistent explanation for explaining and predicting natural phenomena.

Science learning cannot be taught solely with lectures. Science learning means that the learning process occurs in a student-centred manner where students are actively involved in scientific experiments. In science learning, students are encouraged to find themselves and transform complex information, check new information with old rules in mind, and revise it if the rules no longer fit. The basic concept of learning is the knowledge that cannot be transferred from teacher to student. Students should be encouraged to construct knowledge in their minds. To truly understand and be able to apply knowledge, students need to be encouraged to work on solving problems, finding things for themselves, and struggling with their ideas.

Teachers can facilitate this process by providing opportunities for students to discover or apply their ideas and teach students to become aware of and consciously use their strategies for learning. Teachers can give students a ladder that leads them to a higher understanding. With a note that students themselves must climb the stairs. For students, learning must shift from being "told" to "actively finding out." Learners must be encouraged as "inventors and owners" of knowledge, not just users or as memorizers of knowledge (Kemdikbud, 2017).

Science learning should ideally activate and encourage students to work scientifically. So far, science learning at SMP Negeri 11 Sijunjung has used chiefly the lecture and question and answer method. The reality shows that 52% of the science scores in class VII.1 from the daily test results are less than the KKM determined by the school, which is 75. This shows that so far, the learning achievement of students in class VII.1 in science is still low. This is due to students' lack of motivation and

---

) Corresponding Author
E-mail: riswelasrita05@gmail.com

enthusiasm for learning science. So it is necessary to apply an innovative learning strategy that can increase the motivation and confidence of students in learning science.

The learning strategy used by the teacher must be able to make students active during the teaching and learning process so that student activities become optimal. Some examples of learning activities, according to (Novianti, 2015), are taking notes, reading, making an overview or summary, remembering, thinking, and practising. Reading is one of the efficient learning activities to add information. Of course, science lesson materials for various groups cannot be separated from theory. To find out the idea, the way students learn must begin with reading.

One of the reading strategies that can involve students being active in constructing knowledge is the SQ3R (Survey, Question, Read, Recite And Review) strategy. SQ3R strategy is a reading strategy that can help and encourage students to understand better what they read. The SQ3R strategy allows students to learn systematically, effectively, and efficiently in dealing with various teaching materials (Sumertha, 2019). The SQ3R strategy is by the characteristics of the subject in the form of a descriptive description. The SQ3R strategy has five steps: survey, question, read, recite, and review. The SQ3R strategy involves students to be active in learning and understanding the material directly in the hope of increasing students' activeness and critical thinking by applying the SQ3R strategy (Survey, Question, Read, Recite And Review) in science learning on Energy in Living Systems (Masykur) et al., 2006).

SQ3R Often, we have difficulty understanding a book or other reading material. It is not uncommon to understand a passage; we read it more than once. Many people read a book or additional reading by reading the whole reading simultaneously. In that way, the person assumes that he will be able to understand the reading well. It turns out that this assumption is not entirely correct. Understanding a reading is not just reading but requires the right strategy, fast, and getting good results. Reading a book can start with skimming or then continue with intensive reading. Skimming aims to get a general impression of a book. However, the reader must also be studied intensively. We not only read the book widely, but we need to read it in-depth as well. Intensive reading is required to obtain information that is of higher quality, more weighty, thicker, and more complete. For such reading activities, we are required to have relational thinking (Widyamartaya, 1992). Reading comprehension is the ability to understand the main ideas, important details, and a comprehensive understanding of the reading. Therefore, we need to master vocabulary and writing structure well. Many ways or methods have been developed for reading skills in the last fifty years (Sulistyaningsih, 2014).

The SQ3R strategy allows students to learn systematically, effectively, and efficiently in dealing with various teaching materials. This strategy is more efficiently used for learning because students can repeatedly study teaching materials from the stages of researching, reading or teaching materials (Survey), asking (Question), reading or studying (Read), telling or rewriting (Recite), and reviewing. (Review) (Riyadi, Annisa Azhar., Nuryani Pupun., 2019).

The model in reading that has been introduced by Hartlep, K. L., & Forsyth, G. A (Muhiddin et al., 2020) that how to read first is to conduct a reading survey to get a general idea of what we will read then by asking various questions to ourselves. The answer is expected to be found in the reading so that the reading is easier to understand. This method is also used to improve understanding of the content of reading.

2. Method

This section contains the course of research that is specifically used in research. Simple workflows do not need schematics. The general way of working does not need to be explained in detail. Long research steps can be made in sub-sections of research stages using Arabic numeral numbering. The new data analysis method must be explained in detail and its formulas (equations) (Karuru, 2013). If the manuscript contains more than three equations, it must be given the equation number. This type of research is descriptive-analytical. Data collection techniques in this study use library techniques. It is called library research because the data or materials needed to complete this research come from libraries in books, journals, dictionaries, encyclopedias, magazines and others (Huda, 2017). In this study, researchers also use library work procedures to access and obtain materials and other research relevant to this research.

Sources of data in this study are books, scientific journals, documents, magazines, laws and regulations and relevant research results, accessed through libraries and open journal search systems via the internet. The data collection process is carried out by grouping the data according to the problems, which are then organized systematically. Data analysis was carried out using content analysis techniques to obtain theories or concepts and research results to answer the problems in this study (Nurkamto, 2020).

3. Result and Discussion

SQ3R stands for Survey, Question, Read, Recite and Review. This technique is one of the reading skills

developed by Francis P. Robinson (1946). SQ3R is often used to read textbooks, non-fiction texts and fiction texts. SQ3R is one type of intensive reading strategy that is very important for teachers to master in a lesson because this strategy can help students improve their understanding of a text. After all, students read through stages and clear reading goals (Sulistyaningsih, 2014).

In the SQ3R stage, students quickly see the text as a whole, make questions about the text, read and find answers, and review the answers. That way, SQ3R helps students to think critically and increase student engagement with texts in the pre-reading, reading, and post-reading processes.

Furthermore, Fahmawati, F., Rusdi, R., & Komala, R in (Muhiddin et al., 2020) stated that in this SQ3R system, we first survey the readings before reading to get a general idea of what we will read. Then by asking ourselves various questions whose answers we hope to find in the reading, we will more easily understand the reading. Furthermore, by trying to express in our own words the essential points, we will master and remember them.

Teaching with the SQ3R model is student-centred learning because students are required to actively explore and enrich their understanding of the concepts being studied. This model also allows students to learn systematically, effectively, and efficiently in dealing with various teaching materials. However, Anderson T & Huang, S. (in Muhiddin Muhyiddin, Ibrahim, Nurul Akmal, Said Hasan: 2020) state that the SQ3R type cooperative learning model is more efficiently used for learning because students can repeatedly learn by teaching materials based on steps. -steps: (1) reviewing readings or teaching materials (survey), (2) making questions about reading (question), (3) reading/studying readings to find answers to questions that have been made (read), (4) read/rewrite the answers to the questions they made (recite) and (5) review all the answers to the questions that have been made (Emilda & Aminah, 2020).

The SQ3R type of cooperative learning model has several advantages, namely the existence of a survey stage at the beginning of learning; this arouses students' curiosity about the material to be studied. The existence of 5 stages carried out also makes the material learned by students stick for a more extended period (Istiyati & Mahfud, 2014)

At the beginning of the introduction of SQ3R, the teacher can accompany students to carry out each stage. After getting used to this, students can do this stage independently. SQ3R activities can also be carried out in groups so that at each stage, students can share ideas and opinions and understand the text. If the teacher focuses on particular aspects or things that need to be studied, SQ3R can be directed to discuss specific topics (Zailani et al., 2012).

Learning to reading comprehension is a process of learning to read that focuses on mastering the text or understanding the text that is read and the ability of students to answer some of the questions given by the teacher. Today, many techniques are used to read well, namely reading by truly understanding the contents of the reading. Of the existing reading techniques, SQ3R is a reading comprehension technique that is widely known and commonly used in reading studies (Riyadi, Annisa Azhar., Nuryani Pupun., 2019). Although the SQ3R technique is a technique or strategy for reading books that are primarily intended for study purposes, it can also be applied for the benefit of strategies or techniques for teaching readers in schools, especially students who are already advanced readers. This is important considering that students' academic activities about learning achievement will be significantly supported by their reading skills, especially reading reference books for each field of study (Subaedah, 2018).

Stage of SQ3R

a. Survey

This stage begins with the teacher (author) asking students to remember the title of the video that has been watched and also pay attention to the title, subtitle, chapter and sub-chapter in the reading. This activity intends to find the chapter's problem before students start reading. When the author asks students to pay attention to the title of the text, students are very enthusiastic about knowing the information contained in the text.

This initial step is very helpful and encourages students to examine or briefly examine the entire structure of the text so that students know the length of the text, headings and sub-headings, terms and keywords, and so on. At this stage, students mark certain parts with pencils, paper, and feature-making tools such as highlighters because the critical parts that will be used as questions need to be marked to facilitate the process of compiling a list of questions in the next step. At this stage, students already know the general idea of reading.

b. Question

At this stage, the writer provides instructions or examples to students to formulate clear, concise, and relevant questions to the text's parts marked in the first step. Then, the writer asks students to write 10 questions that are relevant to the reading text given because the author is guided that the number of questions depends on the length of the text and the ability of students to understand the text being studied. In addition, the readings that students are studying contain things they

3

do not know because if students' background knowledge is not related to the content of the text, it is necessary to arrange as many questions as possible. At this stage, each group can make ten questions as suggested by the author.

c. Read

At this stage, the teacher asks students to read actively in order to find answers to the questions that have been arranged. The expression used by the author at this stage is "Now read the text part by part, then find answers to your questions while reading". "Remember what you asked?" Based on the author's observations, all students read actively.

They also read by focusing on paragraphs that contain answers that are thought to be relevant to the question. They read very actively to find answers to the questions asked. After finishing, the writer checks whether the students can find the correct answer? It turned out that some students could not find the answer. Therefore, the author helps to find the answer.

d. Recite

After completing all the readings that are the students' tasks, the writer tests the students' memory for the answers to the questions by asking students to reiterate the questions and present the answers. Students are not allowed to open the answer notes. If a question is not answered, students are still asked to answer the following question. And so on, until all questions, including those that have not been answered, can be adequately resolved. Based on the author's observations, all students can express answers to questions even though they occasionally open answer notes. For every student who can express the answers to the questions correctly without opening the notes, the author gives a thumbs up with the words "very clever" or "excellent.".

e. Review

At this stage, the author asks students to listen briefly to notes about essential things and conclude their relationship with one another. Make sure students understand the meaning of keywords. Then for each question and answer in the student notes, close the keywords, read the questions, and give answers. This repetition helps students not quickly forget what they have just learned. After that, repeat the material periodically to avoid gradually forgetting. Based on the author's observations, this review is constructive for students to perfect the framework of thinking in building a text and building their memory for the reading material. This process can be done by rereading the entire reading (text), completing notes or discussing it with friends. This method will be more effective by explained to a friend.

Based on this, it can be concluded that the SQ3R method can improve students' reading comprehension. This is proven by students being active and focused readers so that they can understand the implied and explicit reading content effectively, an increase in students' communication skills, and differences in the average value of learning outcomes that have increased. The increase in student learning outcomes can be seen from the value of the Daily Assessment of students on Energy in Living Systems, which is 78% (18 students from a total of 23 people) who have obtained scores above the KKM standard of 75.

4. Conclusiom

Based on the description of the discussion, it can be concluded that the application of SQ3R in science learning on Energy in Living Systems can increase students' interest, motivation and learning outcomes. The SQ3R method can improve students' reading comprehension. This is proven by students being active and focused readers so that they can understand the implied and explicit reading content effectively, an increase in students' communication skills, and differences in the average value of learning outcomes that have increased.

References

Emilda, E., & Aminah, S. (2020). Penggunaan SQ3R dalam Meningkatkan Kemampuan Membaca Siswa. Alinea: Jurnal Bahasa, Sastra, Dan Pengajaran. https://doi.org/10.35194/alinea.v9i1.892

Huda, F. A. (2017). Pengertian dan Definisi Kajian Pustaka. Http://Fatkhan.Web.Id/.

Istiyati, S., & Mahfud, H. (2014). Pengaruh Strategi Pembelajaran Survey,Question, Read, Recite, And Review (Sq3r) Terhadap Kemampuan Membaca Pemahaman Ditinjau Dari Minat Baca. Didaktika Dwija Indria.

Karuru, P. (2013). Pentingya Kajian Pustaka Dalam Penelitian. Jurnal Keguruan Dan Ilmu Pendidikan.

Kemdikbud. (2017). Kementerian Pendidikan dan Kebudayaan. Http://Kemdikbud.Go.Id/.

Masykur, Khanafiyah, S., & Handayani, L. (2006). Penerapan Metode Sq3R Dalam Pembelajaran Kooperatif Untuk Meningkatkan Hasil Belajar Fisika Pokok Bahasan Tata Surya Pada Siswa Kelas Vii Smp. Jurnal Pendidikan Fisika Indonesia.

Muhiddin, M., Ibrahim, I., Akmal, N., & Hasan, S. (2020). Penerapan Model Survey Question Read Recite Review SQ3R Dalam Pembelajaran IPA

4

Di SMP. Jurnal Biology Education. https://doi.org/10.32672/jbe.v8i1.2016

Novianti. (2015). Peranan Psikologi Pendidikan Dalam Proses Belajar Mengajar. Jurnal Pendidikan.

Nurkamto, J. (2020). Kajian Pustaka Dalam Penelitian Kualitatif 1. In Bahan ajar bahasa dan sastra di era milenial.

Riyadi, Annisa Azhar., Nuryani Pupun., H. T. (2019). Penerapan Strategi SQ3R Untuk Meningkatkan Keterampilan Membaca Pemahaman Siswa Kelas IV SD. Jurnal Pendidikan Guru Sekolah Dasar.

Subaedah, S. (2018). Peningkatan Hasil Belajar Kemampuan Membaca Pemahaman Melalui Penerapan Strategi Survey Question Reading Recite Review (SQ3R) Pada Siswa. DIKDAS MATAPPA: Jurnal Ilmu Pendidikan Dasar. https://doi.org/10.31100/dikdas.v1i1.199

Sulistyaningsih, L. S. (2014). Metode Sq3R. In Pbin4329/Modul 1.

Sumertha, I. G. (2019). Penerapan Model Pembelajaran Kooperatif Tipe Group Investigation (GI) untuk Meningkatkan Hasil Belajar IPA Siswa. Jurnal Pedagogi Dan Pembelajaran. https://doi.org/10.23887/jp2.v2i2.17908

Zailani, S., Syazwina Mustapa, N., Ab Ghani, S., Hani Hashim, U., & Shaadon, Z. (2012). Teknik Membaca SQ3R dan Penerapannya dalam Pengajaran Kemahiran Membaca Bahasa Arab. Hasbi Mat Harun & Mohd Faizal Khatab.

5