

**The implementation of SQ3R (Survey, Question, Read, Recite, Review) research method
as the effort to improve student learning outcomes of Biology subject**

**A implementação do método de pesquisa SQ3R (Pesquisa, Pergunta, Leitura, Recitação,
Revisão) como o esforço para melhorar os resultados de aprendizagem do aluno na
disciplina de Biologia**

**La implementación del método de investigación SQ3R (Encuesta, Pregunta, Lectura,
Recitación, Revisión) como el esfuerzo para mejorar los resultados de aprendizaje de los
estudiantes de la asignatura de Biología**

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Abstract

This study aims to determine the use of SQ3R learning method on biology learning outcomes of students at State High School 1 Bandar the subject matter of food digestion system and determine the barriers of SQ3R learning method on biology subject of State High school 1 Bandar. This research is quantitative research. This research subject is 33 students in State High School 1 Bandar with the composition of 11 male students and 22 female students in second semester of 2018/2019 academic year. The result is implementation on learning methodology of SQ3R (Survey, Question, Read, Recite, and Review) as an effort to improve student learning outcomes on the subject material of human digestive system, consider as an effective learning method. It can be concluded that the learning outcomes of students within the application of the SQ3R learning method (Survey, Question, Read, Recite, and Review) especially on the subject matter of the human digestive system have been increased.

Keywords: Biology learning; Learning method; SQ3R; Learning outcomes improvement; Student.

Resumo

Este estudo tem como objetivo determinar a utilização do método de aprendizagem SQ3R nos resultados de aprendizagem de biologia de alunos do Ensino Médio Estadual 1 Bandar a matéria de sistema de digestão de alimentos e determinar as barreiras do método de aprendizagem SQ3R na disciplina de biologia da Escola Estadual 1 Bandar. Esta pesquisa é uma pesquisa quantitativa. Este sujeito da pesquisa é 33 alunos do Ensino Médio Estadual 1 Bandar com a composição de 11 alunos do sexo masculino e 22 do feminino no segundo semestre do ano letivo 2018/2019. O resultado é a implementação na metodologia de aprendizagem de SQ3R (Pesquisa, Pergunta, Leitura, Recite e Revisão) como um esforço para melhorar os resultados de aprendizagem dos alunos sobre a matéria do sistema digestivo humano, considerada como um método de aprendizagem eficaz. Pode-se concluir que os resultados de aprendizagem dos alunos dentro da aplicação do método de aprendizagem SQ3R (Pesquisa, Pergunta, Ler, Recitar e Rever), especialmente no assunto do sistema digestivo humano, foram aumentados.

Palavras-chave: Aprendizagem de biologia; Método de aprendizagem; SQ3R; Melhoria dos resultados de aprendizagem; Estudante.

Resumen

Este estudio tiene como objetivo determinar el uso del método de aprendizaje SQ3R en los resultados de aprendizaje de biología de los estudiantes de State High School 1 Bandar en la materia del sistema de digestión de alimentos y determinar las barreras del método de aprendizaje SQ3R en la materia de biología de State Highschool 1 Bandar. Esta investigación es una investigación cuantitativa. Este sujeto de investigación son 33 estudiantes de la Escuela Secundaria Estatal 1 Bandar con la composición de 11 estudiantes varones y 22 estudiantes mujeres en el segundo semestre del año académico 2018/2019. El resultado es la implementación de la metodología de aprendizaje de SQ3R (Encuesta, Pregunta, Lectura, Recitación y Revisión) como un esfuerzo por mejorar los resultados de aprendizaje de los estudiantes en la materia del sistema digestivo humano, considerado como un método de aprendizaje eficaz. Se puede concluir que se han incrementado los resultados de aprendizaje de los estudiantes dentro de la aplicación del método de aprendizaje SQ3R (Encuesta, Pregunta, Leer, Recitar y Revisar) especialmente en la temática del sistema digestivo humano.

Palabras clave: Aprendizaje de biología; Método de aprendizaje; SQ3R; Mejora de los resultados del aprendizaje; Estudiante.

1. Introduction

Learning is an action and behavior of student that consider as complex. As an action, learning is only experienced by students themselves (Sagala, 2003). Students determined whether learning process occurs or not. Learning process occurs because students obtain something around their environment, such as nature, objects, animals, plants, humans and any other aspect that can be used as learning materials (Yamin, 2009). Besides, it needs more interaction between teacher and students. While the proper interaction happen in classroom. According to Dimyanti and Mudjiono, Cognitive learning theory indicated that there is an active subject, the subject processes the received information, not only storing without transforming. This is related to a principle of learning which is student activeness (Dimyanti & Mudjiono, 2013). Thus, learning can only happen if student actively participated. In realizing active students, it is necessary to have learning activeness. This activeness can only happen if student directly faced the problem.

A good learning process is a learning that provides and gives possibility for student to develop their left brain (recorded brain) and right brain (thinking brain). Students not only know about "something" but can also ask questions regarding that "something", able to convey something, and able to demonstrate something. One of learning processes using right brain/ thinking brain is to criticize what they read and able to explain what they read to others by his own words.

In his book of teaching and learning process, Oemar Hamalik defined learning is a process of changes in individual behavior through interaction with their environment. Oemar Hamalik defines learning as a process of changing individual behavior through the interaction with environment. This explanation focuses on the interaction of students with the environment until they obtain what it called by learning process (Hamalik, 2014).

Learning is a communication process of two people which was done by teacher and student. Learning can be defined as any relatively permanent change in an organism's behavioral repertoire that occurs as a result of experience. Learning can also be defined as a change that occurs relatively permanent in behavior that appears as a result of experience (Wittig, 1981).

Method is one of supported tool to achieve the goal. By utilizing the appropriate methods, teacher will be able to achieve their learning objectives. In using a learning method, there is no learning method that is better than another. Each learning method has advantages

and disadvantages, therefore teacher have to choose the right learning method according based on the presented material.

In order to obtain a good quality of learning result, it needs a good learning process by paying attention on the level of thinking that will be studied. A good learning process design is a learning design that uses learning indicators as signs on achieving the results. Well-formulated indicators can be used to detect to which extent learning outcomes can be achieved.

SQ3R (Survey, Question, Read, Recite, Review) Method is a textbook reading method which begin from survey for the related book material, continue to Question which directed to read by critical reading that means not only reading but also finding the answer of researcher question and possible question of others, while recite and review is an affirmation and repeat the material, thus what is obtained will not easily forgotten (Mushobikhatun, 2008).

Effective ways to carry out recite session and reviews by presenting or explaining to others in their own words and in their own way. SQ3R method was developed by Francis P. Robinson in Ohio State University of USA. These methods are practical and can be applied in variety of learning approaches for all material (Robinson, 1946).

Moreover, in this research the learning method of SQ3R are applied. This research method is a way to learn any reading text especially book scientific article and research report. Student will be easier to remember their material, because they learn in group and having the chance to be more active to understand the material from text or book and there are higher opportunities to improve their biology subject learning result especially on the material of digestive system.

Based on the explanation above, therefore this research tried to examine the use of SQ3R research method toward student learning result of Biology subject in State High School 1 Bandar by the main material of human digestive system.

2. Methodology

This research is a quantitative research. Quantitative data is needed to measure student learning outcomes. Quantitative method is the process of finding the knowledge by the data of number as a tool to analyze the information needed (Sugiyono, 2016).

The subject of this analysis is student of State High School I Bandar (33 students by 11 male and 22 female). This research was done on second semester of 2018/2019. This

research was done for two months, on the first week of January until the first week of March 2019. The time of this research started from the time of observations and asked permission from the school until the classroom action research process was completed continue to the application for research approval letter was completed.

The research method used in this research is Classroom Action Research. According to Zainal Aqib, Classroom Action Research is a study conducted by teachers in their own class through self-reflection with the aim of improving their performance. Therefore, student learning outcomes will improve. This research was carried out in two cycles, cycle I and cycle II.

Data Collection Technique

In order to obtain the high validity, several methods were applied such as:

Documentation Method, looking for the data regarding the things or variables in form of notes, value transcripts, books, newspapers, minutes, meetings, agendas and so on. This method used to obtain information regarding student learning result on the material of human digestive system and arrange the data related to certain notes, such as school vision and mission, organizational structure, biology learning schedule, student attendance list that can be used as research subject and the picture of student on the process of SQ3R learning method.

Interview is collecting information by asking a number of oral questions to be answered orally. This method is used to obtain and complete data that has not been obtained from documentation.

Observation according to S. Margono, observation is systematic examination and recording the symptoms that appear as the object of research (Margono, 2007). This technique helps to understand more about the learning process of Biology by SQ3R (Survey, Question, Read, Recite, and Review), student and teacher situation, etc.

Test is a set of stimulants given to someone by the intention of getting answers that can be used as basis for scoring. This method is used to obtain learning outcomes of students both individual and groups.

3. Result and Discussion

3.1 Result

A. SQ3R Method Stages

SQ3R method provides a strategy that begins with building a general description of studied material, improve questions based on the title/subtitle of a chapter and continue with reading to find the answer of questions. There are five steps on applying SQ3R method. This explained as below:

1) Survey

By conducting the survey, based on the obtained information, it needs to focus student attention when reading. Surveying a chapter takes 5-10 minutes.

2) Question

Students are expected to be able to make questions related to the material. In this stage, to facilitate the use of the question learning method provided by the researcher. This stage helps to facilitate the use of question learning method provided by researcher.

3) Read

By Reading, student begins to obtain the information of the framework from survey process. Read a chapter and finish it before move to another chapter. By reading, student started to find the answer of question. Answer the question by their own word.

4) Recite

Generally, student quickly forget the material they has been read. By doing this recite process student can train their mind to concentrate and remember the material. This process is carried out after student has completed to read a chapter. The best way to do a recite is to look at the questions before reading the section and try to answer on a sheet of paper without looking at the book.

5) Review

Review help student to refine the framework on a chapter and build a memory of chapter material. This process can be done by reviewing all the chapter, complete their note or discuss with partner. The effective review is by explaining to other people or present in front of class.

B. The Role of SQ3R method to Improve Students Learning Outcomes

Based on the research results of mushobikatun (2008) regarding the excretion system material, SQ3R method can improve learning outcomes. It can be seen from the following aspects below:

1) Learning Readiness

Basically, readiness is a physical and mental capacity (potential ability) to learn, accompanied by the expectation of skills and background of learning to do something. If the individual wants to learn something, he must have a background to do and obtain the expectation of certain skills that will be taken afterwards.

2) Retention

Retention is permanent learning outcome ability. If the individual has the ability to stick "permanently" it can be said that the results are capable of retention. If the individual has permanent ability it can be said that the results of retention. The longer they obtain the ability, the higher their retention.

3) Internalization

Student really absorb their ability on learning outcomes, therefore it is the part of their own ability. It is reflected on the appearance that is influenced by learning outcomes therefore individuals have a concern on what they have learned.

4) Transfer

Transfer is an ability to move the topic they have learned into new situation. If the individual has understood a principle, they can transfer it into a life situation, thus means that the individual is able to transfer what has been learned.

C. The Result of Action Research

Cycle I

Learning by SQ3R method characterized with the accuracy of students in understanding a reading text and able to take the referred meaning. In order to facilitate students' understanding due to the large amount of material, study groups were formed to have small group discussions and answer questions that provided by researcher. Cycle I was done by twice meeting by four learning times.

The data on the improvement of students in learning biology using SQ3R learning method is observed directly during the action implementation. Researchers observe the implementation of learning presented by teacher and during students work on group discussion. Teacher and researcher observe the activities, communication and cooperation among students in completing SQ3R. Learning result of this cycle can be seen from discussion score and evaluation score. During the implementation of learning by SQ3R method, teacher conducting the discussion assessments, there were three students who were not present, thus they got no score.

Discussion assessment for each group was done based on the material presented, time management of presentation, and the summary of presentation material and questions raised by other groups. While individual assessment done based on their activeness of learning process and group discussion progress. Based on the score of discussion in cycle I, there were 7 students who did not complete the standard. The average of student learning result is 62,2 by the complete percentages of 76,67%. The evaluation was done on 11 February at 11.00 AM to 11.45 AM. They need 45 minutes to finish 15 multiple choice questions and 5 essay questions. Students with the score under the standard were 8 children, the highest score was 85 and the lowest score was 30. By the acquisition of an average learning outcome of 66.25 and learning completeness only reach 75.75%.

Cycle II

In cycle II, many questions arise from other groups. Students have begun to show the enthusiasm of learning by SQ3R method.

Cooperation and responsibility of students have begun by dividing the tasks of each student in small group discussions and presentations in front of class therefore there is no students domination of each students in groups. Students enthusiastically complete discussion and prepare summaries of answers which will be presented; therefore there will be no commotion except in their own small group. The teacher's way to find out that there is no domination of students material, the teacher occasionally asks questions that obtained from one of group members during group discussions.

The learning result of cycle II can be seen from discussion score and evaluation score. During the implementation of learning by SQ3R method and discussion assessments was done based on group scores and individual scores. Discussion assessment for groups was

based on the presented material, time management in presentations, material summaries as presentation material and questions raise by other groups, collaboration in a group.

Meanwhile, individual assessment was based on activeness in learning process, both asking questions and help to answer questions if the presenter is unable to answer questions from other groups, cooperation in a group. Based on the value of discussion in cycle II, there were 3 students who did not complete the standard. The average acquisition of learning outcomes is 75.73 by learning completeness of 90.9 %.

Evaluation was done during 20 February 2019 11.00 AM to 11.45 AM, on the evaluation process, all the students are present. The duration needed is 45 minutes to solve 15 multiple choice and 5 essays. There are two students which obtain the score under the standard. By the acquisition of average learning outcome 76.30 and learning completeness reach 93.93%.

3.2 Reflection

Based on the results, therefore a reflection is needed carried out over the steps that have been implemented. The result showed that after cycle I, it needs another cycle. in the implementation of cycle II which seemed as sufficient on improving the enthusiasm of students, learning activities and learning outcomes on the application of "SQ3R learning methods in human digestive system material to improve learning outcomes of students at State High School 1 Bandar have reached the specified success indicators".

3.3 Discussion

Based on the examination of cycle I, it is found that teacher on implementing "SQ3R learning method" begin by the stage of giving apperception to the class material by conventional methods.

Then divide the groups to carry out the learning process by SQ3R method, however, in cycle I the time management of learning activities is not good. It can be seen by the time for small group discussions is delayed, therefore the presentation time is short. Beside, on providing the motivation and consultation to students, it still not distributed evenly thus several student find it difficult to solve the given discussion problem.

Based on the reflection of cycle I, the implementation of actions in cycle II by teacher was good, seen by a good time management consistent with the scheduled learning plan and

encouragement by the teacher to students was evenly distributed. Moreover, students have also been able to carry out the stages of "SQ3R learning method" properly. It was proven by the search for references carried out by students, small group discussions that went well, quite satisfying presentations and student able to solve the questions of evaluation.

The learning method of SQ3R consider more on the activeness and creativities of student, both from obtaining sources/reference material, answering questions from researchers that faced with the ability to combine several thoughts or arguments from students in group, reading accuracy and creativity on delivering or presenting in front of the class.

It will create some obstacles when students are not able to cooperate and more active on learning process than just waiting to be explained by teacher. The use of this method will be an obstacle without any motivation from students and teachers to create a cooperative classroom atmosphere.

The obstacles that occurred in cycle I have been able to be minimized. However there are still the obstacles that felt in cycle II such as lack of reading sources in schools.

Student motivation to learn is still low, especially when the teacher is not able to be assertive in learning and providing grades, it will gradually change if it starts to be supported from various parties, such as family and school.

4. Conclusion and Suggestion

Based on the research result of SQ3R method (Survey, Question, Read, Recite, Review) as one of the effort to improve student learning result on the main material of human digestive system, can be concluded that:

Student learning outcomes by the application of SQ3R learning method (Survey, Question, Read, Recite, Review) especially on the main material of human digestive system has been improved from cycle I by the average of 62,2 and the completeness percentage of 76.67%, in cycle II it improved to 75,73 by the percentages of 90,9%. While the evaluation value with an average of 62.25 with classical learning completeness (all students) 75.75% increased to 76.30 with classical learning completeness (all students) 93.93%.

While the evaluation value with an average of 62.25 and the completeness of 75.75% increased to 76.30 with completeness (all students) 93.93%. It means that on cycle I, there are 8 students that still obtain the score under the standard (62). While in second cycle, there were only 3 students whose did not complete the discussion and 2 students whose evaluation scores were below the KKM.

Suggestion

Based on the results of research that has been carried out as an effort to improve learning outcomes, the researcher feels the need to provide suggestions, including:

1. The suggestion for school, it is expected that school are able to complete the learning resources (books/teaching aids). Therefore students will more motivate to improve achievement on learning by existing facilities. Teacher should contain more variation on providing the material for students. Able to choose a learning method that suits the needs of students, and related to the discussed material.

2. The suggestion for teacher, teacher should try to guide the activities of students in group work. Thus each student does not depend on other students and can really work with members of the group. Therefore by doing assignments in group in discussion, each student is actively involved and expressed their opinions in group.

References

Dimiyanti & Mudjiono. (2013). Belajar&Pembelajaran. In *belajar&pembelajaran*.(Authors, please. Check information. Verify what is lacking according to APA standard).

Hamalik, O. (2014). *Proses Belajar Mengajar*. Jakarta: Bumi Aksara.

Margono, S. (2007). *Metodologi penelitian pendidikan: komponen MKDK*. Jakarta: Rineka Cipta.

Mushobikhatun. (2008). *Keefektifan Metode SQ3R Pada Pembelajaran Konsep Sistem Ekskresi Di Madrasah Aliyah Al Asror Gunungpati Semarang*. Universitas Negeri Semarang.

Robinson, F. P. (1946). *Effective Study*. New York: Harper & Brothers Publishers.

Sagala, S. (2003). *Konsep dan makna Pembelajaran*. Bandung: Alfabeta.

Sugiyono. (2016). Metode Penelitian dan Pengembangan (Research and Development/R&D). In *Bandung: Alfabeta*. <https://doi.org/10.1016/j.drudis.2010.11.005>

Wittig, A. F. (1981). *Theory And Problems of Psychology of Learning*. New York.

Yamin, M. (2009). *Manajemen Pembelajaran Kelas*. Jakarta: Gaung Persada Press.

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