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Improving Radioactivity Learning Outcomes With Recreational Charta Media

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Abstrak

Tujuan penelitian ini adalah untuk meningkatkan hasil belajar Radioaktivitas pada siswa X TBO 3 dengan menggunakan media charta rekreasi Tahun Pelajaran 2021/2022 yang berjumlah 35 siswa.Penelitian yang digunakan adalah Penelitian Tindakan Kelas (PTK) yang dilaksanakan dalam dua siklus. Setiap siklus terdiri dari tahap perencanaan, pelaksanaan, observasi dan refleksi.Teknik pengumpulan data yang digunakan adalah dengan metode langsung, yaitu dari hasil tes pada tiap siklus. Berdasarkan hasil dan pembahasan diperoleh nilai rata – rata pada siklus I adalah 71 dan pada siklus II sebesar 74 , sehingga dapat dilihat adanya peningkatan nilai rata – rata dari siklus I ke siklus II. Sehuingga dapat disimpulkan bahwa dengan menggunakan media charta dapat meningkatkan hasil belajarRadioaktivitas siswa kelas X TBO 3.

Kata Kunci: *Hasil Belajar, Radioaktivitas, Charta Rekreasi*

Abstract

The purpose of this study was to improve the learning outcomes of radioactivity in X TBO 3 students using recreational chart media for the 2021/2022 school year, with a total of 35 students. The research used was Classroom Action Research (CAR), which was carried out in two cycles. Each cycle consists of the stages of planning, implementing, observing and reflecting. The data collection technique used is the direct method, namely from the test results in each cycle. Based on the results and discussion, it was obtained that the average value in cycle I was 71 and in cycle II it was 74, so that it can be seen that there was an increase in the average value from cycle I to cycle II. So it can be concluded that using chart media can improve the learning outcomes of class X TBO 3 radioactivity students.

Keywords: *Learning Outcomes, Radioactivity, Charta Recreational*

Introduction

Learning activities are an integral part of all their activities studying in formal educational institutions [1]. Learning is an action and complex behavior from the action part, so learning is only experienced by students themselves [2]. Students are the determinants of whether or not the learning process occurs. Learning referred to in this study is an activity carried out by a person with the intention that there is a change in behavior in him, so that there is a difference with the situation before learning.

Physics lessons have been regarded as a frightening specter or monster. Physics is a

science which studies objects and their movements and their benefits for human life [3]. From the results of interviews with several students, physics lessons are synonymous with confusing formulas and numbers. Some students said that solving physics problems was very difficult and confusing because students had to use various formulas. This resulted in their physics learning outcomes not being good or still below the KKM (minimum completeness criteria).

As can be seen from the daily test scores for one semester (odd semesters of the 2021/2022 school year) that the first and second test scores averaged 64, while for the third test the average was 65. The slowness of the learning process can be overcome in various ways, one of which is by applying the right learning method, namely a learning method that can increase student motivation so that learning will increase students' absorption of a subject matter.

Each learning process requires a method that fits the purpose of teaching itself. Education in this era of globalization is growing rapidly in accordance with the demands of the times and always abreast of technological advances. Human life is increasingly bringing complex problems. These problems occur in all aspects of life and one of them is the education sector. Education is a means to improve personality, civilization and culture [4]. In improving the quality of education it is necessary to have several methods in learning.

The use of learning methods and media has a major influence on achieving learning objectives [5]. The use of appropriate learning media can make it easier for students to understand the subject matter to be taught. Students become interested in the material being taught, so as to generate motivation to learn. Therefore, good learning methods and media must be used in every learning process, including learning in physics subjects.

The use of appropriate learning media can also increase student motivation and interest in the subject matter provided. Learning media can increase student learning motivation, because the use of learning media becomes more attractive and focuses students' attention [6]. In this case the teacher is required to be able to make fun learning plans, and determine learning media that are appropriate to the material being taught. The expected learning media is media that can build student creativity with the intention of providing opportunities for students to seek, build, shape and apply knowledge in their lives.

The recreational method is an effective method for increasing student motivation, because the learning environment is different. Learning Methods Recreation or field trips can help students in the process of understanding subject matter, because in this method students are taught to be directly involved in the environment [7]. According to Iskandar field trips are not just for recreation, but to learn or deepen their lessons by looking at the reality [8]. However, it is undeniable that the recreation method requires a lot of preparation and funds. Therefore, a simple recreation is made which is poured into chart media.

Recreation charts are pictures or writings that are arranged by students in a form according to their imagination. Then students attach their charta creations to the wall provided. Students from other groups will go on recreation to other groups, and students in the groups visited serve as guides. The process of finding, forming and applying knowledge by students is outlined in the media prepared by the teacher. To further inspire imagination and curiosity, students are involved in making media.

Based on this description, encouraging researchers to further improve student learning outcomes by implementing learning using recreational chart media, and in the learning process will motivate students to play an active and creative role in completing assignments and group discussions. By learning using recreational charta media, it is hoped that the difficulties faced by students in completing individual or group assignments can be overcome and students will be more motivated in learning.

Methods

This research is a classroom action research conducted for the purpose of improving the quality of learning [9].nThe design of this study uses the spiral loop design by Kemmis & Mc Taggart [10]. Broadly speaking, the design has several stages, namely: planning (plan), implementation and observation (act & observe), and reflection (reflect).

The subject of this study focused on class X TBO 3 students with a total of 35 students in the even semester of the 2021/2022 academic year. Data collection techniques used are tests, observations, and documentation.

This research was carried out with actions carried out with research steps that had been planned, namely by first compiling a lesson plan containing steps in implementing learning. The next step is to collect data which is carried out by observing and testing. After the data is obtained, reflection is then carried out and a report on the results of the research is carried out.

The benchmark for the success of this research is the achievement of research objectives in accordance with the planned time which is marked by increased student learning outcomes as indicated by the exceedance of the minimum completeness criteria (KKM), namely the class average score of 70, and at least 75% of students get grades 70 or so.

If the class has not achieved learning mastery, then the action research is continued in the next cycle. Learning in Cycle 2 is the result of cycle 1 reflection, the writer and collaborators revise the learning process, so that the quality of learning in cycle 2 is better, as expected. The process carried out starting from action planning, action implementation, observation, and reflection, is broadly the same as the previous cycles.

Results And Discussion

Cycle 1

After learning using the Recreation chart media, changes were obtained both in the classroom atmosphere, student enthusiasm and student learning outcomes. Students are more enthusiastic and enthusiastic in participating in learning in class. In cycle I, students made Recreation Charts by taking the topic of atomic theory and core physics. Students work on discussion sheets and student worksheets with the help of the teacher. The teacher gives pieces of words to be arranged into a Charta according to the shape you want.

From the observation of students' activeness, in cycle I, the percentage of students' activeness was 71%, meaning that learning was quite good. Some students are still passive, do not have much activity in groups when carrying out discussions and work on assignments. The ability of students to answer questions is quite good, but the courage of students to work on the questions given by the teacher on the blackboard is not much.

After analyzing students' ability to complete the final cycle test, the average score in cycle I was 71 with the number of students who scored 70 or more as many as 24 students or 69% of 35 students. The biggest mistakes students make are changing units and lacking math skills. The teacher reviewed the use of units in calculations and asked students to practice counting at home.

Cycle 2

In cycle II, the teacher included modeling and reflection components in the learning process. Teachers, using nuclear reactor displays and uncontrolled reactions, provide motivation for students to seek information. Students are very enthusiastic about participating in learning and actively ask questions if they encounter obstacles in working on worksheets or compiling Recreation Charts. In cycle II, students made a Recreation Chart with the topic of Radioactivity. Students work on discussion sheets and worksheets by searching for information on their own via the internet. The teacher does not provide assistance as in cycle I.

In forming groups, the game model is looking for friends and the teacher limits the search time to the count of ten, so that the class atmosphere is formed for competition. This adds

to the enthusiasm of students because there is a different atmosphere, students do not feel any stiffness in the class.

Students carry out inquiry activities in cycle II by carrying out information seeking activities and then making pieces of words arranged in the desired shape, such as parks, recreation areas. In the next activity students are given the opportunity to present their work to other groups. One group walks from one group to another. On their way they asked about the topics presented. With students find experiences in the learning process. Students also understand more and are challenged because they have to explain what they have made to other groups. In the end students more easily understand what they learn.

In cycle II, the percentage of student activity was 80.6%, learning went well and was conducive. Students progress a lot in working on worksheets and are always competitive in answering questions both orally and by working on the blackboard. Group cooperation is also more visible. In cycle II student learning outcomes increased, namely the average score obtained was 74 with the number of students who scored 70 or more as many as 28 students or 80% of 35 students. This happens because of changes in the atmosphere and student activity.

Overall from the discussion above it can be seen the following things.

1. Student learning outcomes have increased in terms of test scores in cycle I and cycle II, and indicators of success have been exceeded
2. The use of recreational chart media can improve student learning outcomes in class X TBO 3.
3. Student activity is more visible by involving students in making the Recreation Charta media.

In learning using the Recreation Charta media, students are very enthusiastic and the atmosphere of the class becomes lively not monotonous. However, in its implementation encountered several obstacles, including:

1. The class atmosphere tends to be rowdy
2. The internet signal is not smooth
3. The target time that had been planned was not met, because the students discussed too long about chart forms
4. It is difficult to restore student concentration to solve existing problems
5. Throwing occurs between students in one group when asked to present the results of the discussion.

In addressing the obstacles that arise, the author uses several ways, including:

1. Seating arrangements are made in a circle, so that the atmosphere of competition is more visible
2. Move students to a place with a better internet signal.
3. The group that finishes on time gets more points than the other groups
4. Groups or students who present the results of the discussion clearly get additional points that can add to the value of the report card
5. The group that gets the highest points in one meeting gets a reward in the form of a notebook.

The results of this study are in line with the results of research conducted by Zarwan and Herdiyansah with the title Effects of Media Video and Media Chart on the Accuracy of Smash Badminton Students of SD Negeri 52 Kuranji Padang. The results of the study show that the media chart has a significant effect on increasing the accuracy of the smash [11]. Another study conducted by Setia with the title Improving Learning Outcomes by Using Media Chart for Material on the Digestive System in Class VIIIA MTSN 2 Way Kanan Humans found that student learning outcomes had increased significantly. This can be seen from the students' completeness from the results of the competency test on 30 class VIIIA students, that is, 50% of students (15 students) completed their studies in the first cycle, then in the second cycle it became 75% (20 students) while in the third cycle it was 80% (24 students) [12].

Conclusion

From the results of the discussion, it can be concluded that this research shows that learning

using recreational chart media can improve radioactivity learning outcomes for class X TBO 3 SMK Negeri 2 Banyumas for the 2021/2022 academic year.

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