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CONTEXTUAL TEACHING AND LEARNING USING REACT STRATEGY COMPONENTS (RELATING, EXPERIENCING, APPLYING, COOPERATING, AND TRANSFFERING) ON LEARNING OUTCOMES AND STUDENT MOTIVATION

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ABSTRAK

Berdasarkan rumusan masalah di atas, maka tujuan penelitian ini adalah sebagai berikut untuk mengetahui perbedaan metode pembelajaran yang lebih efektif dalam pembelajaran materi kimia di SMA Negeri 1 Sekerak. Metode yang digunakan dalam penelitian adalah eksperimen dengan menggunakan eksperimen semu. Desain yang digunakan dalam penelitian adalah desain kelompok kontrol nonequialent (Pretest-Posttest Control Group Design). Desain ini terdiri dari dua kelompok, masing-masing desain akan dipilih secara acak. Penelitian ini dilakukan di kelas XI IPA SMA Negeri 1 Sekerak yang terletak di Jln. Desa Tani, Desa Sulum, Kecamatan. Sekerak, Kab. Aceh Tamiang Provinsi Aceh. Berdasarkan hasil penelitian pengaruh model pembelajaran REACT berbantuan media animasi terhadap hasil belajar siswa pada materi larutan buffer di SMA Negeri 1 Sekerak. Hasil belajar siswa dengan menggunakan model pembelajaran REACT meningkat dari rata-rata skor 77 menjadi 81. Respon siswa terhadap model pembelajaran REACT berbantuan media animasi di SMA Negeri 1 Sekerak memperoleh persentase siswa yang menjawab Sangat Setuju (SS) sebesar 71,14% , sehingga 70% < 71,14 < 85% hal ini menunjukkan bahwa siswa memberikan respon positif terhadap model pembelajaran REACT berbantuan media animasi Terdapat perbedaan hasil belajar siswa yang menggunakan model pembelajaran REACT berbantuan media animasi dan tanpa menggunakan pembelajaran REACT model pada materi larutan buffer di SMA Negeri 1 Sekerak.

Kata Kunci : Hasil Belajar; Motivasi; Pembelajaran REACT;

ABSTRACT

Based on the formulation of the problem above, the objectives of this study are as follows knowing the difference of learning methods that are more effective in learning chemistry material at SMA Negeri 1 Sekerak. The method used in the research is experimentation using quasi-experiments. The design used in the research was nonequialent control group design (Pretest-Posttest Control Group Design). This design consists of two groups, each design will be selected randomly. This research was conducted in class XI Science at SMA Negeri 1 Sekerak which is located on Jln. Tani Village, Sulum Village, District. Sekerak, Kab. Aceh Tamiang Aceh Province. Based on the results of research on the effect of the REACT learning model assisted by animated media on student learning outcomes on buffer solution material at SMA Negeri 1 Sekerak. student learning outcomes using the REACT learning model increased from an average score of 77 to 81. Students' responses to the REACT learning model assisted by animated media at SMA Negeri 1 Sekerak obtained a percentage of students who answered Strongly Agree (SS) of 71.14%, so that 70% < 71.14 < 85% this indicates that students gave a positive response to the REACT learning model assisted by animated media There is a difference in student learning outcomes using the REACT learning model assisted by animated media and without using the REACT learning model on buffer solution material at SMA Negeri 1 Sekerak.

Keyword : Learning Outcomes; Motivation; REACT Learning;

INTRODUCTION

Education is an effort to prepare students through guidance, teaching or learning activities, and or training for their roles in the future, (Sudjana, 2004). In our Law No. 20 of 2003 article 1 paragraph 2 explains that "National education is education based on Pancasila which is rooted in the value of the greatness of religion, Indonesian national culture that adapts to the development of science and technology. Nurdyansyah explained "The education world must innovate in a whole. It means that all the devices in education system have its role and be the factors which take the important effect in successful of education system", (Nurdyansyah et.all, 2017).

According to Dharsana (2017) Education is a self-centered guidance effort for students who in their development are always related and influenced by their environment. "Education is teaching held in schools as a place to educate (teaching)", (Soyomukti, 2016). So it can be concluded that education is very important because without human education it will be difficult to develop and even be retarded, so education must really be directed to produce quality human beings who are able to compete and have noble character and good morals, and even determine success or failure. development of a nation, (Arsani, et, all, 2018).

Education in Indonesia according to Law no. 2 of 1989 and PP No. 73 of 1991, education was carried out through two channels, namely the formal school route and the out-of-school route. Contextual teaching and learning (CTL) is a learning strategy that emphasizes the full involvement of students to be able to find the material being studied and relate it to real-life situations so as to encourage students to be able to apply it in their lives. Through the experience process, it is expected that student development will occur as a whole, which will not only develop in the cognitive aspect, but also in the affective and psychomotor aspects. Learning through CTL is expected that students can find the material they are learning on their own, (Sanjaya, 2017).

In this strategy, the class serves as a place to discuss findings in the field. Students are encouraged to be active in studying the subject matter according to the topic to be studied.Learning activities can encourage students to make connections between the knowledge they have and its application in everyday life as members of the family and community. One of the contributions of the project-based CTL learning approach to scientific literacy can be done by applying it in solving everyday problems related to the material being studied, (Haristy et al., 2013). Previous research has shown that using CTL with the REACT strategy component can improve learning outcomes and student motivation. However, these studies are still limited to lower levels of education. Therefore, this study aims to investigate the effect of using CTL with REACT strategy components on learning outcomes and learning motivation of grade XI students on buffer solution material.

In this context, research conducted by Smith (2018) showed that the use of CTL can improve students' understanding of the subject matter and increase their learning motivation. In addition, research conducted by Johnson (2017) also found that the use of REACT strategies in learning can increase student engagement in the learning process. One example of a contextual learning model is REACT. The REACT strategy is described by Crawford (2001), that there are five strategies that must be seen, namely: Relating, Experiencing, Applying, Cooperating, Transferring. that there are five strategies that must be seen, namely: Relating, Experiencing, Applying, Cooperating, Transferring.

Relating is learning by associating the material being studied with the context of real life experience or previous knowledge. Experiencing is learning that makes students learn by doing activities (learning by doing) through exploration, discovery, search, problem solving activities, and laboratories. Applying is learning by applying the concepts that have been learned to use, by providing realistic and relevant exercises. Cooperating is learning by conditioning students to work together, share, respond and communicate with other learners. Then Transferring is learning that encourages students to learn to use the knowledge they have learned into new contexts or situations that have not been studied in class based on understanding, (Karima, 2015).

This REACT strategy includes relationships, experiences, implementation, cooperation and transferring processes. Learning activities based on the REACT strategy encourage students to analyze information and comment on knowledge in their respective understanding abilities, (Ozbay, 2015).

RESEARCH METHODS

The method used in the research is experimentation using quasi-experiments. In this method, the control class only has one dominant variable (Sukmadinata, 2012). The design used in the research was nonequialent control group design (Pretest-Posttest Control Group Design). This design consists of two groups, each design will be selected randomly (Suharsaputra, 2012). This research was conducted in class XI Science at SMA Negeri 1 Sekerak which is located on Jln. Tani Village, Sulum Village, District. Sekerak, Kab. Aceh Tamiang Aceh Province. Time This research was conducted in the Odd semester of T.A. 2023/2024 August to September 2023.

The samples in this research were class XI-IPA 2 as the control class and class X-IPA 1 as the experimental class. These two classes were chosen because they were based on learning results in previous lessons which had the same average and were supported by observations when the teacher was teaching.

RESULTS AND DISCUSSION

This research conducted inSekerak 1 Public High School, located inon the roadTani Village, Sulum Village, District. Sekerak, Kab. Aceh Tamiang, Aceh Province,. The total number of students inSekerak 1 Public High Schoolare 238 students divided into 3 class groups, namely class X with 5 classes, class XI with 6 classes, and class XII with 5 classes. This research was carried out in 3 meetings from 8 August to 3 September 2023 in class XI Science 1 and in class XI Science 3, totaling 30 students. This research aims to see the effect of the REACT learning model assisted by animation media on student learning outcomes in buffer solution material.

1. Student learning outcomes

Learning outcomes are the process of giving value to the learning outcomes achieved by students according to certain criteria. To see student learning outcomes in this research, a test technique was used, the test carried out was by giving questions in the form of multiple choice questions (multiple choice) totaling 25 questions. The test given consists of 2 stages, namely an initial stage test (pretest) and a final stage test (posttest), each of which is given 25 questions related to the indicators specified in the RPP.

Based on result, it can be seen that the average pretest score for the experimental class is 34.8, while the average score for the control class is 30.53. This shows that the learning outcomes at the initial stage (Pretest) mean the experimental class was higher than the control class.

The subsequent learning process using the REACT learning model is a contextual learning that is related to experience and application of understanding in various contexts, both inside and outside the classroom to solve problems, and can help teachers link the material studied with students' real world. REACT learning can instill concepts in students so that students do not just memorize formulas, but can discover for themselves, work together, can transfer in new contexts, and at the same time learn to relate to context. The REACT learning model consists of five elements or stages, namely: R for Relating, E for Experiencing, A for Applying, C for Cooperating, and T for Transferring. According to Aisjah, the REACT model emphasizes providing information related to previous information that students already know, so that it will be easier to understand the concepts presented by the teacher because they are often encountered in everyday life.

The learning process using the REACT learning model took place over 6 meetings, where before the learning process took place the researcher divided the students into 5 heterogeneous groups consisting of 6 students and the students were given LKPD containing teaching materials and question sheets. So, at the Relating stage, the researcher started the learning process to direct students to connect the concepts being studied with the knowledge that students have in everyday life, as what the researcher asked at that time was, do students know about promaag medicine? Why is promaag medication able to relieve stomach ulcers? So the researcher will relate the buffer solution material to the questions given.

Furthermore, at the Experiencing stage in meetings 1, 2 and 3 the researcher used animation media as a tool in the learning process, while at the 4th, 5th meeting the researcher carried out a practicum to deepen students' knowledge in buffer solution material, where the practicum carried out was differentiating between buffer solutions. and not a buffer. This makes learning interesting for students where with the media they don't feel bored quickly with learning and the practicum also makes them interested in taking part in learning because they will be able to think more actively and prove for themselves the truth of a theory.

Next, at the Applying stage, the researcher provides several practice questions so that students can apply the concepts they have learned by solving these questions. The questions given are in the media and LKPD that has been given.

Meanwhile, in the Cooperating stage, students who have sat in groups are asked to be able to solve the problems contained in the LKPD in collaboration or discussion and students are asked to search from various sources regarding the material being studied, so that students are required to have the responsibility to understand and relate the information. obtained, at this stage the researcher also guides students who do not understand enough in solving the problems contained in the LKPD. With the collaboration stage, students are given the opportunity to think about solving a problem together and collaborate with peers or can transfer the knowledge they have in the form of small groups, there is social interaction communication, so that all students can be active in learning.

Next, in the last stage of transferring, the researcher asked representatives of each group to present the results of their discussion in solving the problem, and opened a question session. According to Hamid, students learn 10% from what they read, 20% from what they hear, 30% from what they see, 50% from what they see and hear, 70% from what they say, and 90% from what they say and done. If the teacher asks him to do something and reports it, the student will remember and master the lesson 90% of the time.

This indicates that at the transferring stage students will be able to remember and master 90% of what has been done and presented. After each group appeared for a presentation, at the end of the lesson the researcher gave the students the opportunity to provide conclusions on the material studied, and then the researcher also reinforced the conclusions presented by the students. The learning process at the end of the meeting was given a posttest to the experimental class and control class which aimed to see the students' final abilities after learning using the REACT learning model assisted by animation media in class XI IPA 1 (experimental class) and without any treatment in class XI IPA 2 (control class).

Based on the result, it can be seen that the average posttest score for the experimental class is 80.53, while the average score for the control class is 77.07. Based on this research, to answer this hypothesis, a two-party test was carried out using the t-test formula which was carried out manually. Where the data used is posttest score data for the experimental class and control class. After testing, it can be seen that the value t_{hitung} is 4.1083 and $ttabel$ is 2.00172. With the testing rule $t_{hitung} > t_{tabel}$ then $H0$ is rejected and Ha accepted, and conversely $t_{hitung} < t_{tabe}$, then $H0$ is accepted and Ha rejected.

Based on these calculations, it turns out that $t_{hitung} > t_{tabel}$ (4.1083 > 2.00172) so $H0$ is rejected and Ha accepted, where it can be concluded that there is a difference in student learning outcomes using the REACT learning model assisted by animation media compared to without using the REACT learning model on buffer solution material in SMA Negeri 1 Sekerak.

In accordance with the research results presented by Aswar Anas and Fitriani which stated that from the data it can be seen that t_{hitung} (8.182) > t_{tabe} (2.07961) so that there is an increase in students' understanding of mathematical concepts by implementing the REACT learning model. It can be concluded that the application of the REACT learning model through its five important components, namely Relating, Experiencing, Applying, Cooperating, and Transferring in learning has proven to have a good influence in improving students' ability to understand mathematical concepts.

Other research results presented by Firdha Choirun Nisa, et al stated that the research results showed that the average value of critical thinking ability for the experimental class was 81.15 and the control class was 69.91. The activity score for the experimental class was 86.943 and the control class was 79.934. This research can be concluded that the REACT learning model with virtual simulation has a significant effect on students' critical thinking skills and activities in physics learning in high school

2. Student Response Results

Student responses were obtained from questionnaires filled out by class XI IPA 1 students (experimental class) at the last meeting after the learning process or after completing the posttest using the REACT learning model. The questionnaire given was made in the form of a statement of 15 items with characteristic answer choices, namely Strongly Agree (SS), Agree (S), Disagree (TS),

and Strongly Disagree (STS) with a total of 30 students who were respondents from the experimental class. Filling out the student response questionnaire aims to find out students' personal opinions regarding the use of the REACT learning model assisted by animation media in buffer solution material.

Based on the results of data processing of student responses to the REACT learning model assisted by animation media which can be seen in Table 4.14, it can be seen that in statements 2 and 14 all students responded strongly agree with a percentage of 100%. This can be seen when students take part in the learning, they are very interested in participating. learning because there is media that makes them not feel bored following the buffer solution material.

Meanwhile, the percentage of students who answered in the affirmative was higher for statement number 7 with a percentage of 46.67%. This can be seen when learning enters the cooperative stage. Students are very easy to interact with their friends to work on the questions contained in the LKPD. Of the total 15 student response questionnaire statements, no students answered strongly disagree. From the calculations obtained, it can be seen that more students strongly agree with the use of the REACT learning model assisted by animation media compared to those who agree and disagree. This indicates that many students responded well to learning buffer solution material using the REACT learning model assisted by animation media.

Based on the results, it is known that the percentage of students who answered Strongly Disagree (STS) reached 0%, the percentage of students who Disagree (TS) was 3.78%, the percentage of students who Agree (S) was 25.13% and the percentage of students who Strongly Agree (SS) 71.14%. The percentage who answered Strongly Agree (SS) is included in the positive criteria, this is in accordance with the criteria for the percentage of student responses which can be seen in Chapter III, sub-chapter on data analysis techniques, namely the range 70% < 71.14 < 85% is included in the positive category. So it can be concluded that students gave a positive response to the REACT learning model assisted by animation media on buffer solution material.

In accordance with the research results presented by Anna Fauziah who stated that based on the results of the questionnaire, information was obtained that learning through REACT received a positive response from students. Good learning activities and the emergence of positive responses and interest in REACT learning strengthen students' motivation to improve their abilities. This condition also makes a positive contribution to increasing the understanding and problem solving abilities of students who study with REACT learning.

Another research result presented by Rofiah Al Adaqiyah, et al stated that based on the data obtained, the average overall student response result was 84.41%, so that it could be categorized as REACT-based physics teaching material (Relating, Experiencing, Applying, Cooperating, and Transferring) in physics learning in high school received a very positive response from student

This research is supported by other research conducted by Dwi Sulistyaningsih and Martyana Prihaswati which states that the results of the student response questionnaire regarding the application of the REACT learning tool show that 82.4% of students gave a positive response, in other words the student's positive response was more than 75%, so it can It is said that students gave positive responses. Therefore, device products using the REACT model can be used as a reference in implementing learning in schools.

CONCLUSION

Based on the results of research on the effect of the REACT learning model assisted by animated media on student learning outcomes on buffer solution material at SMA Negeri 1 Sekerak. student learning outcomes using the REACT learning model increased from an average score of 77 to 81. Students' responses to the REACT learning model assisted by animated media at SMA Negeri 1 Sekerak obtained a percentage of students who answered Strongly Agree (SS) of 71.14%, so that 70% < 71.14 < 85% this indicates that students gave a positive response to the REACT learning model assisted by animated media There is a difference in student learning outcomes using the REACT learning model assisted by animated media and without using the REACT learning model on buffer solution material at SMA Negeri 1 Sekerak. This can be seen from the student learning outcomes obtained from the value of rule $t_{hitung} > t_{tabel}$ then $H0$ is rejected and Ha is accepted.

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