How Course Review Horay (CRH) Assisted by The Media Prezi Can Improve Cognitive Abilities of Students

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Abstract: This study aims to know the effect of a cooperative learning of Course Review Horay (CRH) assisted by media Prezi can improve cognitive abilities. The method used is Quasi-Experimental Design with Non-equivalent control group design. The population in this study are class VII which consisted of 200 students, with study sample consisting of 2 classes namely experiment class using cooperative learning of Course Review Horay (CRH) assisted by media Prezi and control class using cooperative learning (CRH). Data collection instrument used were test instrument (pre-test and post-test). The results of the t-test show that there is an influence of cooperative learning of Course Review Horay (CRH) assisted by media Prezi can improve cognitive abilities. The results this study indicate that CRH model assisted by media Prezi gives influence because with this model the students are more active in learning, and motivated when the learning process has media support. So, it can be concluded that the CRH assisted media Prezi can have an influence on increasing cognitive abilities. The cognitive learning outcomes can be improved well especially in the domain of “remembering” and “understanding”. This is obtained from two steps CRH that plays a role well enough to improve student cognitive abilities in both of these areas. As well media Prezi that is used make students enthusiastic to learn because of the diverse and interesting visual forms and templates.

1. Introduction

The lesson in physics (science) in addition to using model, can also in combination with the use of media learning appropriately in order to raise the motivation to learn, the learning process, and the students are more active in the lesson as well to improve the students[1-3]. In the selection of models and medium of learning the right to take note and adaptable with the material will be delivered because can affect the learning process. So that the material submitted by the teacher being delivered properly and optimally [4-6]. Based on the pre-planning of the survey, there are some problems found, namely in the process of learning that still use conventional methods, the lack of media during the process of learning, and condition of learning that is still dominated by teachers where the students just listen and do work, don’t participate in learning that make the students bored, and saturated in learning, there are only a few students in one class to respond and absorb the lesson resulted in the students’ achievement are quite low [7-9]. This can be seen from the results of the semester test. Students who get a score of over Criteria of Minimum Mastery that has been set at 70 only about 20-30% in each class.

Models and learning media are models and media that can develop activities, understanding, communication, motivation, and involve students as a whole in the learning process [10,11]. Bruce
Joyce and Marsha Weil said that the learning model is a scenario that designs learning in the classroom to create interaction so that it can see the differences in students' self-development. One of the learning models that is fun and can increase motivation and learning outcomes of students in the cooperative learning model of Course Review Horay (CRH) type and Prezi media [12-13].

The model (CRH) is a fun learning model and can test the understanding of concepts with a box filled with numbers to write answers. If the answer forms horizontally, vertically, or diagonally students shout "hurray" or love chants, and this model can attract students to be more enthusiastic and active in the learning process [14-15].

Prezi is one of the software used to create and display information[16]. When a user opens a Prezi presentation, first, the user can see small pieces of text or images related to each other as a whole. The Prezi zoom feature provides more detailed information about elements when a user enlarges an element[17].

In this study the focus on the cognitive dimension category that is most often found is remembering, understanding, applying, analyzing, evaluating, and creating, each individual or group has a higher level of cognitive ability then is able to store, retrieve, and produce information[18-19].

Based on previous research, has proved there is a difference the students use of the cooperative CRH with conventional learning [20]. The ability to solve the problem of students with learning CRH aided a power point can reach the criteria for completeness at least classical in the set [21]. That and the students' matter of the market with methods CRH aided the media image [22] and the effectiveness of the problem-posing aided the media Prezi to improve the students of the journal of adjustment. The difference of this research with research that already exists. Namely the model CRH and media Prezi [23].

Characteristic of the CRH learning is testing the students about where the answer about to be written in the box equipped with a number. A student or group who get an answer in once upon a time and got to shout "hurray" or song slogans in the group. This model combined with the media Prezi that have the characteristics of visual. It is using the technology of the Zooming that is able to display text, pictures, and video. This is believed to be able to provide motivation of students to be the spirit of learning so that there is an increase in the study.

2. Research Methods
The type of research used is the Quasi-Experiment Design method with non-equivalent control group design [24]. This research was conducted at Bandar Lampung Junior High School 34 in the 2018-2019 academic year in two classes, class VII C and VII D.

The steps taken in this study are (1) pre-survey, (2) make research instruments, (3) conducting an instrument trial, (4) giving a pre-test to the control class and experimental class students, (5) provide treatment by using CRH media assisted Prezi for experimental class students, while for the control class only using the CRH model, (6) giving a post-test to the experimental class and control class students, (7) analyzing the data.

The instruments used in this study were tests, questionnaires, observation sheets, and documentation. Tests given for pre-test and post-test are in the form of multiple choices which are adjusted to the cognitive outcome learning indicators of the questions made as many as 20 items that have been tested. Questionnaire in this study was a Likert scale with a checklist form used as data to measure the interest in the Prezi media. Observations in this study to see the activities of students during the learning process, while the teacher as an observer to see the implementation of the CRH type of cooperative learning model and the media Prezi applied by researchers. The documentation method is used to retrieve written data, such as the names of students, school profiles, lists of student learning outcomes, and other things needed in the study.

Analysis of the validity test, the level of difficulty, the power of difference, the reliability test, and the effect of deception on items about learning outcomes.
Table 1 Results of Validity Analysis, Difficulty Level, Difference Power and Deception Effect after Trial

| Instrument Test     | Number of question categories |
|---------------------|------------------------------|
| Validity            | 20 Valid                     |
| Difficulty          | Easy 14                      |
| Difference Power    | Bad 17                        |
| Deceptive Effect    | Good 40                      |

In this study, the questions used as a test of physics learning outcomes are questions that meet the criteria. Based on the table above, it is known that out of 40 multiple choice questions there are 20 questions that are declared valid and 20 more are declared invalid. The questions used in that have a medium difficulty level of 12 questions, easy 14 questions, difficult 2 questions and with different power in the medium category as many as 10 questions, good 12 questions, bad as many as 17 questions and very good 1 problem, as well as deceptive effects in the category all right.

The difference between the pretest and posttest value is n-gain. To know the cognitive ability of students with formulas normalized gain [25]:

$$\text{Normalized gain (g) = } \frac{\text{posttest score} - \text{pretest score}}{\text{ideal score} - \text{pretest score}}$$

Table 2 Modified normalized gain interpretation

| Normalized gain value | Interpretation |
|-----------------------|----------------|
| N-gain < 0,30         | Low            |
| 0,30 ≤ N-gain < 0,70 | Medium         |
| N-gain < 0,70         | High           |

3. Results and Discussion

Based on the results of the study showed that the average value of pretest and posttest in the experimental class was higher in the posttest value after being given treatment than the pretest value compared to the control class.

Table 3 Mean Pretest-Posttest Results Data, N-Gain Experiment and Control Classes

| Class     | Pretest     | Posttest    | Ngain |
|-----------|-------------|-------------|-------|
| Experimental | 34,83333   | 84,33333   | 0,75  |
| Control   | 32,32143    | 76,07143    | 0,64  |

The experimental class got a pre-test score of 34, 83333 has an increase of 84, 3333. In contrast to the results of the average pre-test and post-test of the control class of 32.32142 experienced an increase in the post-test of 76.07143. The highest post-test result is in the experimental class by 84.33333. This is because in the experimental class, besides using the model, use media too.

Based on the results of the N-Gain calculation calculated from the pre-test and post-test stated the same thing is that there is a significant difference between the N-Gain value in the experimental and control classes. The average value of the N-Gain experimental class obtained a value of 0.75 with a high criterion and the average value of the control class N-Gain was 0.64 with medium criteria. It can be seen that the average N-Gain experimental class is higher than the control class. This can be an indicator that the learning outcomes of the experimental class students using CRH type of cooperative learning model and media Prezi can be increased using the control class using only models, not using media.
In this study, there are four aspects of learning outcomes of students’ cognitive domain (C1, C2, C3, and C4) to be objects in observation. Following this, the average cognitive learning outcomes of the experimental class and control class can be seen in the following graph:

![Graph 1](image)

**Graph 1** Graph of comparison between the average learning outcomes of each cognitive level

Based on the graph above, it is known that the average learning outcomes of students in the cognitive domain in the experimental class is C1 (remember) with 182 numbers with an average of 26, C2 (understand) with 159 numbers with an average of 26.5, C3 (apply) with 96 numbers with an average of 24, and for C4 with a total of 69 with an average of 23. While in the control class is C1 (remember) with 162 numbers with an average of 23, C2 (understand) with 140 numbers with an average of 23.33333, C3 (applying) with a total of 75 numbers with an average of 18.75, and for C4 with a total of 49 with an average of 16.33333.

In each domain C1, C2, C3, and C4 in each class, the experimental class, and the control class are different. In the experimental class C1 (remembering), and C2 (understanding) experience the highest achievement. This is because in accordance with the steps contained in the Prezi media-assisted CRH model, namely in step 1) the teacher conveys the competencies to be achieved, 2) the teacher presents or demonstrates the material according to the topic by asking questions using media Prezi, 3) the teacher divides the students into groups, 4) test understanding, students make box 9 as needed. Each box is filled with numbers according to the taste of each student, 5) the teacher reads the questions randomly and the students write the answers in a box whose number is mentioned by the teacher and immediately discuss it, if it is true (✓) and if it is filled with a cross (X), 6) students who have received an ✓ vertical, or horizontal, or diagonal mark immediately shout "hurray" or love the yells, 7) the value of students is calculated from the correct answer and many shouts "hurray" obtained, 8) the teacher gives rewards for groups that get the highest score or who get the most "hurray". From this step, it plays a good role to improve students' cognitive abilities in both domains. Students are trained to remember more strongly and understand the material presented by getting grades and shouting hurray which can make students learn fun. While the CRH model is for the C3 domain (applying), and C4 (analyzing) is still not appropriate. This is because the CRH model is more dominant at the level of student understanding.

In general, the results of this study prove that using the CRH model and the media prize in accordance with the material presented will provide students with different cognitive abilities with other learning models.

Then test how much influence the model and the media on students’ cognitive abilities, in this study prior to the prerequisite test data analysis. Prerequisite test data analysis using normality test with lilliefors test and homogeneity test with Fisher test. The results of the pretest-posttest normality test of the experimental class and the control class can be seen in table 2 below:
Table 4 Pretest, Posttest, and Normality Test Results for Experimental Classes and Control Classes

| statistics | Experiment Pretest | | | Control Pretest | Posttest |
|------------|-------------------|---|---|-----------------|---------|
| N          | 30                | 30| 28| 28              |
| $\bar{x}$  | 35                | 84| 32| 76              |
| SD         | 9.781             | 9.166| 10.58| 9.165 |
| $L_{count}$| 0.156             | 0.138| 0.092| 0.118 |
| $L_{table}$| 0.162             | 0.162| 0.167| 0.167 |
| Conclusion | Normal            | Normal| Normal| Normal |

Based on table 3 above, it can be concluded that the data from the experimental class pre-test is 0.156 and the post-test is 0.13, the large $L_{count}$ indicates that the experimental class data is normally distributed. In the large control class, the results of pretest 0.092 and posttest were 0.118, large $L_{count}$ showed that the control class data was also normally distributed. Both of these classes meet the criteria of Calculate $L_{table}$ so it can be concluded that the experimental class data and this control class are normally distributed at the pretest and posttest.

The results of the pretest-posttest homogeneity test calculation of the experimental and control classes can be seen in table 3 below:

Table 5 Pretest and Homogeneity Test Results, Experimental Class Post and Control Classes

| Statistics | Pretest Experiment | Control | Posttest Experiment | Control |
|------------|--------------------|---------|--------------------|---------|
| SD²        | 95.661             | 84,023  | 83,995             | 112     |
| $F_{count}$| 0.8541             | 1.0003  |                    |         |
| $F_{table}$| 1.8687             | 1.8687  |                    |         |
| Conclusion | Homogeneous        | Homogeneous |                |         |

Based on table 4 above, for the data from the pre-test of the experimental class and the control class obtained $F_{count}$ of 0.8541 and the posttest data obtained is $F_{count}$ of 1.0003, while $F_{table}$ is 1.8687. From both data obtained $F_{count}$< $F_{table}$, it can be concluded that both samples have the same or homogeneous variance.

Referring to the results of the relevant research data analysis, it can be concluded that there is a significant comparison of learning outcomes between the cooperative learning model type hooray course review and the time token model[26]. Significant differences in mathematics learning outcomes between students who were taught using the CRH model assisted by Student Worksheets students and the student who is taught using conventional learning models[27]. There were differences in learning outcomes indicating the assisted Course Review Horay (CRH) learning model affect the learning outcomes [28]. Problem-based learning with a method of reviewing hooray courses can be used as an alternative to improve the ability to connect mathematics [29]. The way to improve students' active learning is to design questions with integer answers, divide students into heterogeneous groups of 4-5 students, explain the rules of using Macromedia flash media, ask students to pay attention to lectures that randomly display questions, and ask each group to discuss in the time specified, and if they are late, their group will get a penalty. The way to improve student responses is to ask students to shout without instruction and stimulate other students with questions to respond to the work presented. Ways to improve student learning outcomes: remind students that they have worked together and discussed answers, remind students that if they work together, questions can be solved more easily, asking students to write their answers on paper, asking students to draw their answers. on paper and choose students as group representatives to present group answers [30].
The results of this study indicate that there is an improvement in the cognitive abilities of students by using the CRH assisted by media Prezi model.

4. Conclusions and Recommendations

4.1 Conclusion

This study shows that the CRH model assisted by the media Prezi gives influence. With this model, the students are more active in learning and motivated when the learning process uses a media as a support. So it can be concluded that the CRH assisted media Prezi model can have an influence on the increase in cognitive abilities. The cognitive learning outcomes can be improved well especially in the realm of "remembering" and "understanding". This is obtained from the two steps CRH plays a role well enough to improve students' cognitive abilities in both of these areas. Students are trained to remember more strongly and understand the material presented. As well as the media Prezi used to make students enthusiastic about learning because of the diverse and interesting visual forms and templates.

4.2 Recommendations

Research on the CRH model and media Prezi are suggested to use material which contains a higher level of student understanding. Other learning models can also use media Prezi so as to make the learning process more effective and efficient.

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