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THE IMPLEMENTATION OF CORE LEARNING MODEL IN WORK AND ENERGY TOPIC FOR SENIOR HIGH SCHOOL'S STUDENT

Palupi Indriati, Titin Sunarti
Physics Department, Mathematics and Natural Sciences Faculty, State University of Surabaya
Email: palupiindriati@mhs.unesa.ac.id

Abstract

This research aims to describe the result of implementation CORE model in work and energy topic for senior high school's student. The type of this research is pre-experimental with one group pretest-posttest design. This research use one experiment class and two replication classes. Instrument used in this research is observation sheet of learning implementation. The implementation of the CORE model is observed by the observer through the scoring on the observation sheet of learning implementation. The implementation of learning with CORE model is very good at the first and second meeting in all classes. The implementation of syntax is shown by the average high score with category very good at the first meeting which is 3.51 and the second meeting is 3.61.

Keywords: CORE Model, Implementation, Learning Activities

Abstrak

Penelitian ini bertujuan mendeskripsikan hasil keterlaksanaan model pembelajaran CORE untuk meningkatkan keterampilan berpikir kritis peserta didik SMA. Jenis penelitian ini adalah *pre-experimental* dengan desain *one-grup pretest-posttest*. Penelitian ini menggunakan satu kelas eksperimen dan dua kelas replikasi. Instrumen penelitian yang digunakan adalah lembar pengamatan keterlaksanaan pembelajaran. Implementasi model CORE diamati oleh pengamat melalui penilaian pada lembar keterlaksanaan pembelajaran. Hasil penelitian menunjukkan bahwa implementasi pembelajaran dengan model CORE sangat baik pada pertemuan pertama dan pertemuan kedua di semua kelas. Implementasi sintak juga menunjukkan nilai skor rata-rata yang tinggi dengan kategori sangat baik pada pertemuan pertama, yaitu 3.51 dan pertemuan kedua dengan 3.61.

Kata kunci: Model CORE, Implementasi, Kegiatan Pembelajaran

INTRODUCTION

21st century competence or skills are hot topic that is often disscussed recently. One of the research by Tony Wagner (2010) and Change Leadership Group from Harvard University provided seven competencies and skills needed by students in 21st century. The seven competencies are critical thinking, problem solving, collaboration, leadership instincts, adaptation, entrepreneur, and communication skills. From the statement above, the new standard need to be implemented to make students have that competencies. School as a place of learning is required to find ways and help students have 21st century's skills (Yuliati, 2007).

Based on Minister of Education and Culture Number 67 of 2013 explained the purpose of the 2013 Curriculum of primary and secondary education applied in Indonesia is to develop the intelligence of students through education in scientific disciplines. Intellectual intelligence can be developed in students by improving thinking skills, work ethic, scientific attitude, and communication skills. Thinking skills developed must already exist in higher order thinking skills or HOTS (Rizki and Supardi, 2017).

In the 2013 Curriculum framework, it was explained that the purpose of learning physics is to emphasize mastery of concepts, have skills in developing science and technology, as well as an attitude of confidence to continue education at a higher level (Kemendikbud, 2014). Therefore, organizing physics subjects at the SMA/MA level must be a bridge for students to train the knowledge, concepts, and principles of physics.

Physics learning which only emphasizes mathematical aspects or formulas makes students difficult to solve problems (Sappak, 2013). According to Wulaningsih in (Yuli and Asmawati, 2007) the selection of learning models has an influence on success for learning process. Each student learns in their own way, so that the

teacher has its own challenges to innovate and help students learn effectively (Siti Zubaidah, 2016; Yuliati, 2007). Therefore, as a teacher is not only required to be capable in the material, but also can choose the appropriate learning model so that the learning process in the classroom runs effectively and the desired goals can be achieved (Yuliati, 2007).

One learning model that is believed to be applicable in the teaching and learning process with the aim of improving the critical thinking skills of high school students in physics is the CORE Model (connecting, organizing, reflecting, and extending). There are four phases in the CORE learning model namely Connecting (linking old knowledge with new knowledge), Organizing (organizing material through laboratory activities or discussions to facilitate understanding of material), Reflecting (reflecting what is obtained in the organizing stage), and Extending (deepening or expand knowledge) (Calfee et al, 2010). All phases in the CORE learning model help students learn physics through problem solving with critical thinking skills.

The advantages of the CORE learning model are: 1) students become active in learning activities, 2) provide innovative and meaningful learning experiences to students, 3) train students 'memory in learning, and 4) train students' thinking power on a problem (Artasari, 2013). The application of CORE learning model can run well and in accordance if there is preparation from teachers before use this model (Artasari, 2013).

Previous research on the CORE learning model by (Retnowati, et.al., 2017) concluded that learning with the CORE model can improve reasoning abilities, mathematics learning achievement, and self-efficacy of students. A similar study conducted by Tiara Obrilian Cahyani (2016) showed that there was a change in the improvement of students' critical thinking skills before and after the implementation of the CORE model. The results of Suaida Wahdha's study (2015) also stated that the application of the CORE learning model can develop students' critical thinking skills and improve learning outcomes. The phases of CORE learning model as a space for students to express opinions, look for problem solving and build their own knowledge (Syukron and Nadi Suprapto, 2018; Memes, 2000).

Based on the description of the background above, the author took the initiative to carry out the research "The Implementation of CORE Learning Model in Work and Energy Topic for Senior High School's Student.

METHODA

The type of research is quantitative descriptive that is describing the coercion of CORE learning model. The form of research used one-group pretest posttest design. This research use one experiment class and two replication classes. The research sample was taken randomly. The research design is presented in Table 1

Table 1. Research Design

Class	Pretest	Treatment	Posttest
Experimental	O_1	O	O_2
Replication 1	O_1	O	O_2
Replication 2	O_1	O	O_2

(Sugiyono, 2011)

Notes:
O_1 = Pretest
X = Treatment uses the CORE learning model
O_2 = Posttest

The implementation of syntax's CORE learning model in work and energy topic was obtained from the implementation observation sheet filled in by the observer. The evaluation criteria for the observation sheet are the average score obtained from the total number of learning implementation scores as shown in Table 2 below.

Tabel 2 Score of Learning Implementation Evaluation

Score	Category
4	Very Good
3	Good
2	Enough
1	Less

(Riduwan, 2012)

After that the scores obtained by each stage are averaged using the formula:

$$Skor = \frac{the\ number\ of\ scores\ obtained}{number\ of\ aspects\ observed}$$

(Riduwan, 2012)

Then the scores obtained are interpreted according to the criteria in Table 3 below

Tabel 3 Kriteria Keterlaksanaan Pembelajaran

Average of Interval	Category
0.00-1.49	Poor
1.50-2.49	Not Good
2.50-3.49	Good
3.50-4.00	Very Good

(Riduwan, 2012)

Management of learning can be said to be effective if the implementation of learning has reached a good category.

RESULT AND DISCUSSION

In this study the results of the implementation of CORE learning were obtained. Implementation of learning is used to measure teacher success to complete each phase in the learning syntax. The results of the implementation r in the three classes can be seen in Tables 3 and 4

Table 3 Result of CORE Implementation at First Meeting

Learning Activities	Average Percentage		
	Eksperimen	Replication 1	Replication 2
Connecting	3.63	3.13	3.13
Organizing	3.57	3.57	3.52
Reflecting	3.58	3.20	3.33
Extending	3.63	3.50	3.60
Closing	3.75	3.25	3.50
Situation	3.67	4.00	3.67
Average	3.64	3.44	3.46

Table 4 Result of CORE Implementation at Second Meeting

Learning Activities	Average Percentage		
	Experiment	Replication 1	Replication 2
Connecting	3.38	3.38	3.25
Organizing	3.57	3.57	3.71
Reflecting	3,50	3.50	3.83
Extending	3.63	3.38	3.63
Closing	3.83	4.00	3.67
Situation	3.71	3.66	3.70
Average	3.62	3.58	3.63

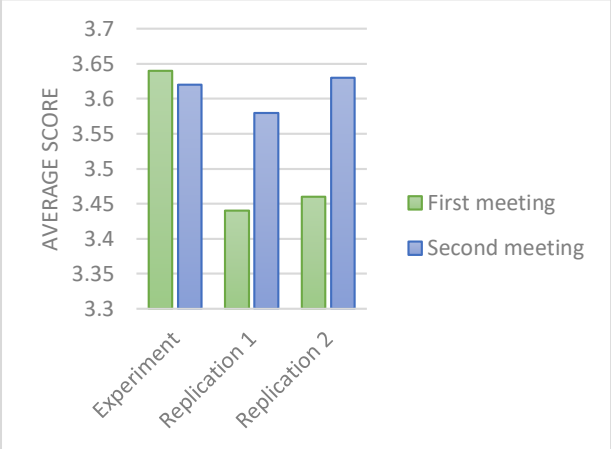

Figure 1 Graph of CORE Implementation

Based on Graph 4.1 shows that the implementation of the CORE learning model in the three classes has an average score of ≥ 3 with very good criteria. From the graph it can be concluded that the CORE learning model was implemented well in the three classes with the highest recapitulation in the experimental class.

The implementation of the CORE learning model is measured through the results of the recapitulation of the implementation observation sheet. Assessment of the observation sheet was carried out in the three experimental classes with each of the two meetings. The topic taught in the three classes is the same namely work and energy. Observations were made by two observers. The results of the calculation of the learning implementation observation sheet for each class showed results that were not much different. There are four phases of implementation that are assessed, namely the introduction, at this stage there is one phase of CORE model, namely connecting. At the core stage, there are three CORE phases namely organizing, reflecting, and extending then the closing stage where the teacher ends the learning process. While the class atmosphere consists of three things assessed, namely the active teacher when teaching, enthusiasm of students, and the accuracy of time allocation.

It can be concluded that the results of observing the implementation of the CORE learning model on the physics material that has been applied in the three classes show very good results. Of course the results are inseparable from the role of students who participated actively during the learning process making it easier for teachers to apply the CORE model in work and energy topic. In line with previous research conducted by Retnowati et al. (2017) that the application of the CORE model effectively increases students' reasoning, learning achievement, and self-efficacy. In addition to being able to train critical thinking skills, the CORE model as a cooperative type learning model also aims to develop social skills through the formation of heterogeneous practicum groups.

CONCLUSION

Based on the results of data analysis and discussion, it can be concluded that the implementation of CORE learning model in work and energy topic at senior high was done very well in all three classes.

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