



THE DEVELOPMENT OF LEARNING ACTIVITIES TO ENHANCE THE 12th GRADE STUDENTS OF MANCHA SUKSA SCHOOL IN LEARNING FOSSIL FUEL THROUGH 7E LEARNING CYCLE AND HIGHLY EFFECTIVE LEARNING APPROACH

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INTRODUCTION

The content of fossil fuels was one of the contents in learning both basic and additional chemistry courses of the science lesson. According to the interview of the 12th Grade of Muncha Suksa School on 2017 academic year, the content of fossil fuel was basic knowledge that the students viewed too difficult. Therefore, the researcher implemented the 7E Learning Cycle and Highly Effective Learning Approach initiated by Eisenkraft together with Highly Effective Learning Approach in order to develop the teaching and to study the performance in learning the Fossil Fuels of the 12th Grade students of Muncha Suksa School, Khon Kaen Province.

OBJECTIVES

- 1 To develop the activities in learning the Fossil Fuels by applying the 7E Learning Cycle and Highly Effective Approaches.
- 2 To discover the efficiency index in learning the Fossil Fuels through activities applied the 7E Learning Cycle and High Effectively Learning Approach (70/30 approach). This aims at enhancing the students' overall performance.
- 3 To scale up the performance of the 12th Grade students in learning Fossil Fuels (80% of students could reach 75 scores.)

METHOD & DATA ANALYTICS

Simple Random Sampling Technique was used in this research. The data was collected from the 12th Grade students at the level of class 8 from Muncha Suksa School; administered under the Secondary Educational Service Area Office 25 in Khon Kaen Province during second semester in the 2017 academic year. The research methodology was based on the Pre-experimental Design and was narrowed down into a case study. To collect the data, 13 lesson plans highlighting the Fossil Fuel learning activities using the 7E Learning Cycle and Highly Effective Learning Approach were used as the research instrument measure. Furthermore, in order to evaluate the students' achievement and satisfaction, the paper-pencil test (40 items) and the questionnaires (30 items) were used to data; Analysis was used descriptive on Pre-test Post-test S.D. and Percentage to collect data.

STUDY OUTCOMES

- 1 The outcomes in developing the learning activities of the Fossil Fuels, under the additional chemistry course, Science Course no. 30225 based on the 7E Learning Cycle and the Highly Effective Learning Approach

| Efficiency | Full marks | S.D. | Percentage |
|---|------------|------|------------|
| Efficiency of Process [E1] | | 1.14 | 89.76 |
| Efficiency of Result [E2] | | 0.62 | 82.15 |
| The efficiency of learning activity plan [E1 / E2 equals 89.76 / 82.15] | | | |

- 2 The outcomes in studying the Efficiency Index of the 7E Learning Cycle and the technique of teaching the Fossil Fuels

| No. of Students | Full Marks | Pre-test Scores | Post-test Scores | Index of Efficiency |
|-----------------|------------|-----------------|------------------|---------------------|
| 43 | 40 | 516 | 1413 | 0.7450 |

- 3 The outcome in assessing the performance of the 12th Grade students in studying Additional Chemistry Course, Science No. 30225

| No. of Students | Full Marks | Passing Threshold | Passing Threshold in Percentage | No. of Passed Students | | Achievement | | Percentage |
|-----------------|------------|-------------------|---------------------------------|------------------------|-------|-------------|------|------------|
| | | | | % | SD | | | |
| 43 | 40 | 30 | 75 | 37 | 86.05 | 32.86 | 2.51 | 82.15 |

- 4 The outcomes of studying the students' satisfaction toward the learning activities based on the 7E Learning Cycle and the Highly Effective Learning Approach

| Topics to assess the students' satisfactio toward their study | | S.D. | Level of Satisfaction |
|--|-------------|-------------|-----------------------|
| 10. The teacher encouraged the students to express their opinions in each learning activity. | 4.56 | 0.55 | Very good |
| 17. The diverse teaching technique enabled the learning process and the better understanding in content. | 4.58 | 0.59 | Very good |
| 18. The students had chance in exchanging their ideas with their classmates. | 4.58 | 0.54 | Very good |
| 20. The students were proud of their achievements. | 4.53 | 0.63 | Very good |
| 23. The students enjoyed criticizing the achievements of their classmates. | 4.56 | 0.59 | Very good |
| 24. The evaluation outcomes were taken for future improvement. | 4.51 | 0.59 | Very good |
| 26. The team cooperation resulted in the group's success. | 4.74 | 0.44 | Very good |
| 27. The students were informed of the evaluation result; both of themselves and of their group. | 4.53 | 0.55 | Very good |
| 28. The students took part in setting up the criteria of evaluation. | 4.74 | 0.61 | Very good |
| 29. The students were satisfied with this chemistry lesson. | 4.53 | 0.54 | Very good |
| Total | 4.48 | 0.32 | Good |

CONCLUSION AND DISCUSSION

The conclusions were firstly, the learning activity about the Fossil Fuels applying the approaches of the 7E Learning Cycle and the Highly Effective Learning resulted in 80% higher than efficiency. Secondly, the index efficiency of lesson plans was increased to 74.50% which was 70% higher than the threshold. Thirdly, 86.05% of students scored higher than 75 from the full marks. Lastly, most students enjoyed learning the Fossil Fuels through activities based on the 7E Learning Cycle and Highly Effective Learning Approach. This was proven by their high level of satisfaction of 4.48 and S.D. of 0.32.

RECOMMENDATIONS

The study implementing the teaching technique based on the 7E Learning Cycle and the Highly Effective Learning Approach in class should be taken into account.

Apart from chemistry, this technique should also be applied to other academic subjects.