



Students' Critical Thinking Skills with The Implementation of Sustainability Learning to Energy Conservation and Transformation Material Based on The POE (Predict-Observe-Explain) Model

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ABSTRACT

Objective: The challenges of the 21st century with massive technological developments and the energy crisis that is currently plaguing various countries around the world, including Indonesia, are a big task for the world of education to make all elements, including students, aware and care about the energy crisis that has hit so it is necessary to integrate in the learning process the application of sustainable learning with the POE (Predict-Observe-Explain) learning model to train students' critical thinking skills. **Method:** The study employs descriptive quantitative methods. The data were processed quantitatively and then interpreted qualitatively. **Result:** The data analysis obtained a significant value on students' critical thinking skills with a pretty good category, with a percentage of the average value of students' critical thinking skills in the poor category. **Novelty:** This study is expected to be considered in further developing the application of sustainable learning with the POE model because this learning has novelty in developing other innovative learning. Another novelty found in the material taken in this study is very appropriate with the application of the continuous learning POE model to train students' critical thinking skills.

INTRODUCTION

Technological developments in recent years have occurred very quickly and massively; this development began during the Industrial Revolution 4.0 in 2011; this is also marked by the continued increase in digitalization technology in terms of more adaptive and responsive systems. One of the demands that the millennial generation needs to have in the industrial era 5.0 is critical thinking skills (Apdillah et al., 2022; Arifah et al., 2021; Gürdür Broo et al., 2022; Saphira et al., 2022). Not just critical, but positive critical thinking. This ability will be difficult to replace by technological developments. An article says that one of the skills that students need to have in the 21st century is critical thinking skills. The skills required today in the 21st century are creativity, critical thinking, communication, and collaboration (Jatmiko et al., 2021; Rahmadita et al., 2021; Rizki et al., 2022).

Among the most frequently discussed learning skills are critical thinking skills. Critical thinking skills are believed to have an essential role in interpreting, analyzing, evaluating, concluding, and explaining the argument (Alsaleh, 2020; Din, 2020; Shaw et al., 2020; Supena et al., 2021; Wale & Bishaw, 2020). Information today is straightforward to access from various technological media such as social media, television, YouTube, and Google. However, the concern is that information from these sources cannot be fully used but must be sorted out first because much information is a hoax and does not guarantee accuracy.

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