The Use of Photo Story in Supporting Petroleum Oil Learning, Processing, and the Impact of Combustion and How to Overcome this as an Efforts to Increase Interest and Learning Results of Students SMA/SMK/MA

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Abstract

The learning of Petroleum, Processing, and Combustion Impact and its mitigation should be pursued in an ideal direction by perfecting the learning methods of the monotonic to be interesting, enjoyable, easy to understand, and understood by the students. One alternative that can be done that is with Photo Story application. This application put forward the aspects of hearing, visualization and compilation of images in a more interesting and lively. The various advantages of Photo Story include: 1) Provide a more interesting and lively visualization; 2) Provides additional features of narration, transition effects, and music (Ken Burn Effect). Based on this, this application is suitable as an alternative in learning that is memorizing and reasoning, so that students have a high interest and interest to remain passionate and actively participate in every learning activity. The growing interest and interest of students in learning activities will give a positive impact that is expected to improve student learning outcomes.

Keywords: photo story, petroleum oil, learning interest, learning result

Introduction

In chemistry learning in senior high school, there are some materials that are memorized with reasoning such as the material of Petroleum, Processing, and the Impact of Combustion and its Handling. In general, chemical materials that are memorizing and reasoning are less favored by students. Various techniques are presented, from the method of discussion, presentation by teachers and students using PowerPoint with the hope that students can more deeply study the material. In this fact, it has not provided significant and encouraging changes. This is indicated by the less focused classroom situation and some visible saturation through the facial expression of the students during the presentation.

The selected method in presentation with power point application is expected to be more activate students, more interested and easy to understand the material but sometimes not according to plan. Less interesting content of PowerPoint, level of students understanding of the material, and less depth description of material could be the cause of the memorizing and reasoning material not be optimally in class.

Based on the weakness of the transfer of material such memorizing and reasoning, it needs various improvements and innovations to help solve this problem. So it will increase interest and learning outcomes of student. The learning of Petroleum, Processing and Impact of Combustion and its Prevention should be pursued in an ideal direction by perfecting the learning methods of the monotonic to be interesting, agreeable, easy to understand, and understood by the students. One alternative is done with the application Photo Story. This application puts the hearing aspect, visual/ visualization and image compilation more interesting and live. Based on this, it is expected to support the learning process to make it more interesting, so to grow interest and able to improve student learning outcomes.

The thought of delivering innovative and fun learning, according to Mulyasa (2003: 188) students have curiosity and potential to fulfill the curiosity. Therefore the role of the teacher is to conditioned a fun learning environment in order to bring out the curiosity of student, so the interest and motivation to learn will increase. By using Photo Story application is expected to create a conducive learning atmosphere, interesting, and fun, so it will increase student interest and learning outcomes.

The purpose of this paper discussion is to provide an overview of the application of Photo Story, how to use it, and its various advantages in order to serve as one of alternative application in learning of Petroleum, Processing, and Combustion Impact and its handling so as to increase student's interest and learning outcomes.

Discussion

Microsoft Photo Story is an application that allows users to make photo presentations more lively. By using Ken Burn Effect, this software provides features adding narration, transition effects, and music to create windows video media. At first, Photo Story is based on Microsoft Research which focuses on photo sharing projects. Various photo stories created can be played on PC using Windows Media Player. Microsoft Photo Story was developed by Microsoft with a stable release of 3.1 in 2006 with Microsoft Widows operating system type licensed photo sharing software. In Photo Story version 3.1 has the maximum number of images that can be imported in one batch of 200. Maximum image size of 72.300 (width) x 7200 (height) pixels with the maximum resolution offered by Microsoft is 1024 x 768.

To create a great Photo Story series, you need ideas / topics, planning, good photo selection, and storytelling skills through a series of photos to be arranged in Photo Story. Although the implementation of this application consists of several photos, but the series of Photo Story has a red thread that hooks one photo with another photo. According to Enche Tjin, the 5 steps that must be taken in making Photo Story are: 1. Define topic / theme, 2. Gathering information on selected topics / themes, 3. Plan the photos that will be taken / used, 4. Capture photos that have been planned, 5. Editing / selection of photos, 6. The layout / layout of the selected photo.

Meanwhile, according to Rizqa Lahuddin, variations in making Photo Story has at least 7 types of photos in order to create an interesting story and not boring, including:

1. Scene Setter: Photos able to describe the contents of the article as a whole as a prelude to the series of Photo Story, 2) Action: Photos are able to describe the activity being told, 3) Interaction: The photo shows the interaction of the selected object, 4) Potrait: Show photos Close up objects that have strong characters,5. Details: Shows the details of something that usually escapes the eye, 6) Medium Shot: Photos that are standard, not too zoom or too detailed, 7) Signature Image: In closing, usually the best photo of all photos displayed (www.kompasiana.com)

Petroleum Oil Learning, Processing, and the Impact of Combustion and How to Overcome the Combustion waste

Petroleum Materials include the scope of: Formation of Petroleum, Petroleum Processing (including petroleum fractions and their usefulness), Impact of Burning of Petroleum and its Handling. The most common learning activities undertaken in this material are lectures, discussions, and presentations.

These various methods have some disadvantages, such as:

1. Lecture: This method is less interesting (especially for teachers who are less able to communicate well), have a low level of visualization, and tend to be boring.
2. Discussion: The weakness of this method, the less material can be clearly conveyed if the participants of the discussion less master the discussion material.
3. Presentation: The limited understanding of students in reading the articles presented presents less in-depth knowledge to be conveyed and uncertainty in answering fellow student questions as the presentation progresses. Based on the limitations of learning methods commonly done in conveying this material, it needs to be innovative learning, one with the applicationPhoto Story. This application is expected to present learning materials in a more lively and interesting, so it can foster interest / interest in students and ultimately able to improve student learning outcomes

In the implementation of learning using the application Stoto Photography, students are required to find materials, especially photographs related to Petroleum materials, including:

Formation of Petroleum

Petroleum and natural gas are thought to originate from the remains of sea, plants and animals that died about 150 million years ago. The presumption is based on the similarity of the elements contained in the material with elements present in living things. The remains of the organism settle on the seafloor, then covered by a mud that gradually hardened by the pressure of the above layer so that it turns into a rock. Meanwhile anaerobic bacteria describe the remnants of the organism so that it becomes oil and gas trapped between the earth's crust. This

process of oil and gas formation takes a very long time. Here's an illustration of petroleum formation:

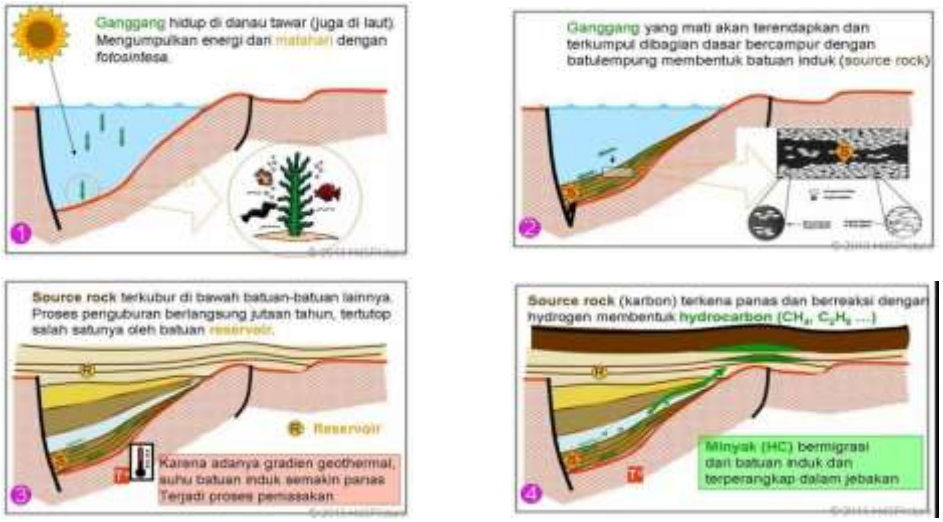

Fig 1. Petroleum oil in the earth

Processing of petroleum oil

Processing of petroleum is done by way of distillation of stratified based on difference of boiling point of petroleum fraction. Here are the various fractions generated on petroleum processing:

Fraction	Number of atom C	Boiling point (˚C)	Use
Gas	$C_1 - C_5$	< 30	LPG, bahan bakar
Petroleum eter	$C_5 - C_7$	30 – 90	Solvent
Fuel	$C_5 - C_{12}$	40 – 180	Fuel for motorcycle
Kerosin	$C_{11} - C_{14}$	180 – 250	Fuel and Avtur materials/aircraft fuel
Solar	$C_{14} - C_{18}$	250 – 300	vehicle fuel
Lubricant oil	$C_{18} - C_{20}$	300 – 350	Motor engine lubricant
Wax/parafin	> 20	> 350	Wax / waxed material, wrapping paper
Fuel oil	> 20	> 350	Ship fuel
Bitumen	> 25	> 350	Asphalt and roofing materials

The Impact of Burning Petroleum

Here's the impact of petroleum burning:

CO (carbon monoxide)

CO gas is colorless, odorless, resulting from incomplete combustion of fuel. If inhaled, CO is able to bind Hb blood with binding strength 250 - 300 times stronger than oxygen, causing headaches, respiratory problems, and in high levels can cause death.

CO_2 (carbon dioxide)

CO_2 gas is colorless, odorless, generated from perfect combustion of fuel. This gas in normal levels is not dangerous, but if the condition is excessive it will cause an increase in surface temperature of the earth and cause global warming (greenhouse effect). Global warming greatly influences climate change and melting snow at the poles.

SOx (sulfur oxides: SO_2 and SO_3)

SOx gas is produced from burning fossil fuels. When SO_2 and SO_3 are inhaled it reacts with water in the respiratory tract, forming acids that damage tissues, cause pain, and are harmful to health. SOx in the air dissolves in rain water causing acid rain.

NOx (nitrogen oxide: NO and NO_2)

NOx gas is produced from burning fossil fuels. This gas in the air is not directly toxic to humans, but reacts with other pollutants and particulates to form smog, causing reduced visibility, eye irritation, causing ARD / Acute Respiratory Infections. NOx in the air dissolves in rain water causing acid rain

Pb (lead)

The Pb particles in the air are generated from the burning of petrol containing lead (using anticnocking TEL: Tetra Ethyl Lead). Light lead poisoning causes headaches, fatigue, irritability, and depression. Higher toxicity levels cause damage to the brain, kidneys, and liver

Overcoming the Impact of Burning Oil

Overcoming the impact of petroleum combustion can be done by:

a. Reduce the use of fossil fuels / petroleum.

b. Install a catalytic converter in a non-lead gasoline motor vehicle exhaust, since lead can poison the catalyst in a catalytic converter.

c. Performing afforestation / reforestation continuously.

d. Using gasoline that adds more eco-friendly / non-lead gasoline additives.

e. Finding renewable non renewable energy sources, such as the use of solar cells, wind power, and hydropower more optimal

Interest and Student Learning Outcomes

Interest in Student Learning

Based on Kamus Besar Bahasa Indonesia (2008: 957), interest is a high tendency towards something; passion; desire. According to Nana Sudjana (1989: 39) the learning achievement of students is influenced by two main factors namely the factor of within students and outside students / environmental factors. One factor that comes from within the student / internal factor is interest. Interests can be a powerful source of motivation to learn well and become the cause of participation and student activeness in learning activities. According to H. Djaali (2008: 121) interest is a sense of love and interest in a thing or activity without anyone who ordered. Interest is essentially an acceptance of a relationship between one self and something outside of himself. Meanwhile, according to Muhibbin Syah (2003: 151) interest is a tendency, a high passion, or a great desire for something, so the interest will encourage someone to be fully involved in doing something he wants. Based on some understanding, interest in learning can be interpreted as a strong interest in the learning process, so students tend to be actively involved continuously and earnestly in every learning activities to achieve the desired goals.

Student Learning Results

Student learning outcomes are one of the products of a learning evaluation. According to Winkel (1996: 51) learning outcomes are changes that result in human change in attitude and behavior. The aspect of change refers to the taxonomy of learning objectives developed by Bloom, Simpson, and Harrow concerning the cognitive, affective, and psychomotor aspects (Winkel, 1996: 244). Meanwhile, according Purwanto (2013: 54) learning outcomes are the results achieved from the learning process or behavioral changes that occur after following the learning process in accordance with educational. Learning outcomes are measured to determine the achievement of educational goals so that they must be in line with educational objectives. According to Irham and Wiyani (2013: 210) students as educational products with various characteristics and abilities are the main subjects to assess the success of the learning process.

This is lead the need for measurement and assessment of student learning outcomes as a form of evaluation to see the level of achievement of the learning process undertaken. According Sugihartono et al (2007: 131) to determine the level of student ability can be done by: 1). Scores earned by a classmate; 2). The pass limit is the limit of the lowest competency that students must meet; 3). Student learning outcomes in the past; 4). The basic ability of students. The learning outcomes obtained in the learning process are useful for improving processes that have not run optimally, filling out and supplementing emerging deficiencies, and developing processes that are considered to be well under way. This is in line with the opinion of Irham and Wiyani (2013: 215) that the results of learning have benefits and usefulness for decision making in the next learning process includes learning planning, classroom management, learning process management and follow-up activities for individual students, groups, institution.

Meanwhile, according to Thorndike and Hagen in Sugiharto et al (2007: 134) the purpose and usefulness of the learning evaluation results can be utilized in decision-making that involves: 1). Learning process; 2). Monitor student learning outcomes; 3). Diagnosis and effort to improve learning difficulties; 4).

Data for student placement; 5). Basic selection or process selection; 6). Guidance and counseling services; 7). Curriculum improvement and development; 8). Institutional assessment process.

Based on these various opinions, learning outcomes can be expressed as the results achieved after learning process takes place, measured according to the learning objectives to be achieved include cognitive, affective, and psychomotor aspects as a form of evaluation to see the achievement of the learning process yangn and useful in decision making process further learning.

Based on the discussion of various theoretical studies, the learning of Petroleum, Processing, and Impact of Combustion and its Tackling should be taught using innovative, creative, and interesting method of learning, so it is not boring, one of them using Photo Story application. Use of this application has many advantages among them. 1. Provide a more interesting and lively visualization.

2. Provides additional features of narration, transition effects, and music (Ken Burn Effect).

With its many advantages, Photo Story is a worthy application to be an alternative in learning that is memorizing and reasoning, thereby fostering the interest and interest of high students to remain passionate and actively participate in every learning activity. The growing interest and interest of students in learning activities will give a positive impact that is expected to improve student learning outcomes

Conclusion

The delivery of chemistry lesson in the class in materials such as such as Petroleum, Processing, and Combustion Impact and its handling should be taught using innovative, creative, and interesting learning methods, so it is not boring, one of them using the Photo Story app. This application is expected to increase interest and interest of students in the learning process, so foster the spirit and positive effects that will encourage the active participation of students and ultimately able to improve student learning outcomes.

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