

Learning Innovation: A Multisensory Learning

Udomratana Vattanasit

Department of Environmental Health and Technology, School of Public Health
Walailak University, Nakhon Si Thammarat, Thailand

Overview

Multisensory learning is the theory that individuals learn better if they are taught using more than one sense. Reports suggest the human brain has evolved to process multisensory signals, making it is more natural than unisensory processing. This means it is more easily accessible to students as there are more ways the information can be triggered and retrieved from their cognitive learning centre. Therefore, multisensory experience could help students remember and retain information more effectively. Accordingly, application of multisensory learning in “Air Pollution and Control” course in the topic of “Vehicle Emissions Control” was investigated.

Aims and objectives

To improve students’ learning outcomes by

- Triggering curiosity through self-assessment of what they know about the lesson at the beginning and at the end of the class
- Encouraging multisensory learning (watching, listening, writing, and thinking) by using video clips related to different topics in the lesson in combination with Padlet.

Activities

The activities were conducted according to the following steps.

1. The teacher introduced learning objectives (LOs) to describe what students will be expected to learn.
2. Students made a self-assessment by questioning about the topic according to the given LOs.
3. The teacher conducted a 45 minute lecture about basic concepts of the lesson.
4. Students were divided into 6 groups and each group was assigned to **watch** a different video clip which is related to different aspects of the overall content on the Padlet wall.
5. Each student **made a note** as a comment below the assigned video clip on the Padlet wall
6. Students **discussed** with their group members and **summarized main ideas** they got from brainstorming on a worksheet in order to submit at the end of the class.
7. Students made a self-assessment by answering their own questions from step 2.
8. Each group put the main ideas summarized from the video to share with other groups on the Padlet wall.
9. Students gave feedback to the teacher in a Google form.



Outcomes

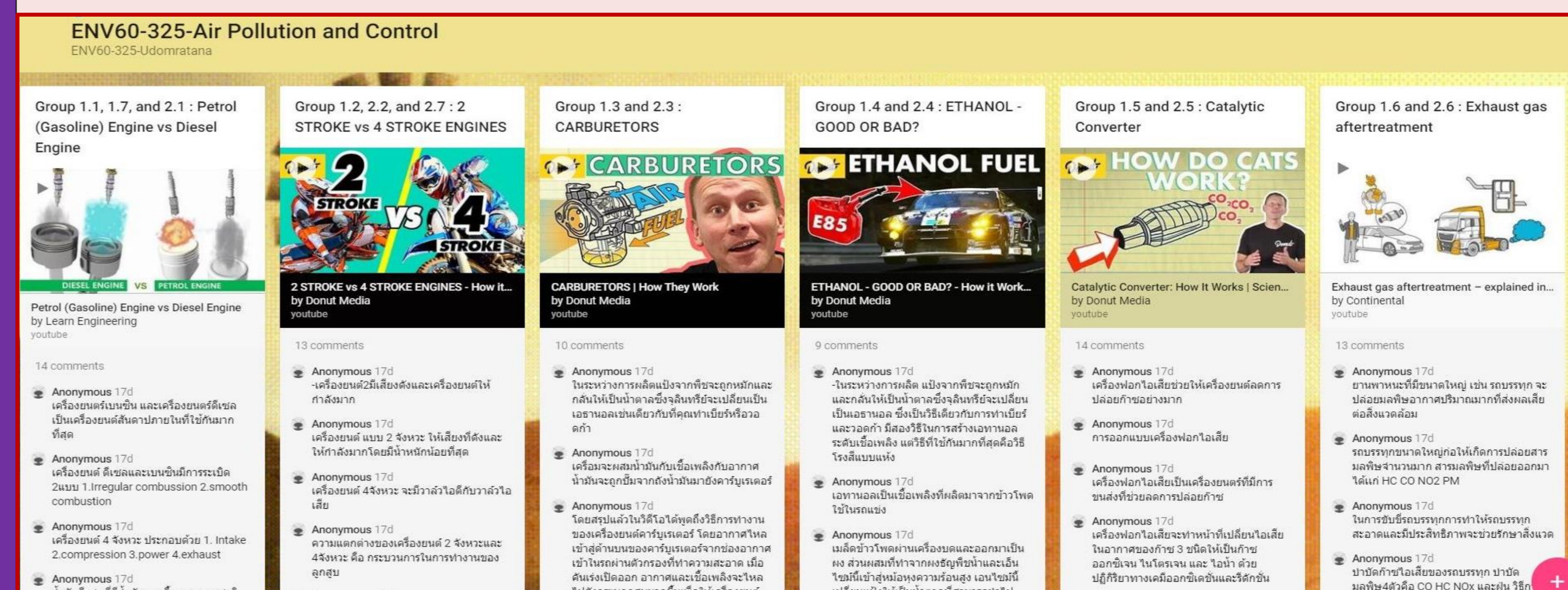


Table: Satisfaction score (rating scale 1-4) in term of improving learning outcomes as compared to traditional lecture

Activities	Processes	Mean Score	SUM
Q&A	1. Questioning	3.06	3.18
	2. Answering	3.03	
	3. Feedback by the teacher in group	3.45	
Video clip	1. Watching/ listening	2.85	2.99
	2. Making a note	3.03	
	3. Thinking/ Brainstorming	2.91	
	4. Multisensory learning (1+2+3)	3.15	

Rating scale: 1 = less satisfied, 2 = neutral, 3 = satisfied, 4 = very satisfied

- The mean satisfaction scores of Q&A and video clip activities were not so different. The data shows that students satisfied to the two activities as compared to traditional lecture.
- Combined processes of learning (multisensory) in the video clip activity promoted learning satisfaction better than just only watching/ listening.

Impacts

- Students felt more enthusiastic to learn
- Students memorized and understand the subject better through visualization together with listening, writing, and thinking.
- Group working and sharing the obtained information to other groups help the students can achieve much more than individuals working on their own.

Future Development of Project

- Short-term: Let the students find video clips or other types of media that fit to the provided learning objectives by themselves
- Medium-term: Apply JIGSAW method.
- Long-term: Seeking effective feedback tools to improve teaching and learning methods.

Reference

Ladan Shams and Aaron R. Seitz. (2008). Benefits of multisensory learning. Trends in Cognitive Sciences is a peer-reviewed reviews journal published by Cell Press.