

Aromatherapy Extraction through Distillation

SAY goodbye to boring Science lessons. Dra. Mukhlisotin., a DBE3 District Facilitator from Ngajuk district in East Java knows just how to do that. She showed students how to extract the essences of plants, to produce the essential oils commonly used in aromatherapy.

Through this lesson, students learned the process of making one of the most important ingredients in the basic chemical industry. Through the practical work that involved separation of compounds through distillation, it was hoped to aid students in understanding the separation of substances, the basic technical skills of chemistry, as well as to raise students' awareness of the potential of their environment, community and nation.

The materials used in this practical activity were parts of plants that contain essential oils, such as: flowers, seeds, wood or roots. In this practical activity, kaffir lime leaves and pandan leaves were used because of their strong aroma. Some flowers and nut-

meg were also used in this practicum. Through this practical activity students were introduced to the benefits of extraction and distillation in the utilization of natural resources to create industry oriented products.

In principle, distillation is a process of separating the elements of a compound based on their different boiling points. When those objects are boiled in a distiller, the volatile substances

(whose boiling points are lower) evaporate faster. The steam is then condensed in a cooler, which then comes out as an aromatic liquid.

This liquid is what would be used in aromatherapy. Students were then asked to put their products in an attractive packaging and to discuss problems related to this process.



Students in MTsN Nglawak, Nganjuk district learning about extraction and distillation during a practical lesson.

Learning “Aventures to Developed Countries”



The 'Aventures to the Developed Countries' board game created by students of MTsN 3 Surabaya

Drs. Ahmad Syaihu, District Facilitator DBE3 Surabaya, tells of his experience in teaching social studies.

IN the social studies lesson on developed countries, I helped the students to create a game that we called 'Aventures to the Developed Countries'. This is a board game that is played by 6 players. Each player get to answer a question related to the developed country in question. Each developed country has 10 question that must be answered by the players. In total, there are 60 questions related to 6 developed countries. For each correct answer player will get 10 points. At the end of the game each player scored points according to the number of question they got right.

The winner was the player who answered all 10 questions correctly and was the first to reach the finishing line. Those who could not answer their questions not only did not earn any points but were given a penalty that was agreed by the other players. Have a try for yourself!

Creating Healthy Competition through Work Displays



Creating and displaying students' work fosters students' creativity and motivation

Amrulloh, DBE3 District Facilitator from Bojonegoro reflects on the learning he has helped facilitate. He has found displaying students' work effective in encouraging students to become more active and creative in learning. The following is his account of his experience.

THROUGH the teaching and

learning processes that I implement in my class, I have found that displaying students' work, both individual and group work, motivates students to become more active and creative. Displaying here refers to something more than just sticking up their papers on the wall.

Students' work displays make for a great learning resource. And it is our

duty to motivate them to make use of these displays. I, as a teacher, try to make the process of creating and displaying students' work a competition for students both individually and as a group. The work that is displayed is selected from the best work. Other students are encouraged to observe the displayed work and compare it to their own work. Students appreciate this process; students whose work is displayed are proud because they feel appreciated, while those whose work is not displayed feel motivated to work even better to get their work displayed. This creates healthy competition amongst the students. This competition helps increase their confidence and their motivation for success.

The writer considers that this competition encourages creativity and active learning and increases student enthusiasm. These displays also demonstrate that we have fulfilled in reality what was written in the lesson plan.

Making Mathematics Relevant to Our Daily Life



Mathematics used to haunt students. But that is not the case now, in SMPN 2 Semanding, Tuban, Mathematics is now more enjoyable and contextual. Students here can be seen discussing and measuring the dimensions of a cylinder, cone and sphere (Photo 1 and 2). Students also visited a factory close to their school, and used it as a learning resource (Photo 3)

South Sulawesi



A meaningful lesson facilitated by Pak Mansur

1. Why is competency mapping important?

Competency mapping is the first step of a series in contextual learning. During competency mapping teachers look at all basic competencies that have to be attained in one semester, as a whole.

Teachers see the differences, similarities and links and how to teach and assess them. To create contextual learning the basic competencies should be linked up into one context/theme. The context/theme has to be something that has to do with students' daily life. This chosen context/theme is the umbrella for all the competencies that have to be taught to students.

2. How does the lesson plan aid contextual learning?

A contextual lesson plan is one that is derived from the context/theme that results from the curriculum mapping. In other words, context is used as a reference for the lesson plan. Therefore a contextual lesson plan will show a learning activity that is student-centered and which uses the environment or the community as learning resources. Contextual lesson plans

7 Steps to Being a Professional Teacher

A note by Mansur Eppe, Teacher at SMPN 2 Pangkep, on Implementing better teaching and learning

also include worksheets, media as well as the assessment tool to be used by teacher.

3. Why is it important to create a worksheet that promotes critical thinking?

A good worksheet is one that helps teacher to achieve learning objectives effectively and efficiently, as well as in promoting critical thinking. A bad worksheet is only made to keep students busy without promoting critical thinking.

A lesson that uses a good worksheet can help students to develop high level thinking skill, which is one of the important life skills. It is not easy to make a good worksheet, but teachers can find inspiration by discussing with their colleagues.

4. Why is it important to develop learning media?

Learning media helps teachers and students achieve the learning objectives. It helps teachers in delivering learning materials and it helps students in understanding them. However, not all the media needed for contextual learning are available at school. If it is available to buy, the price may be too high. It is therefore important for teachers to develop their own learning materials. Teachers can make learning media from things that are freely available in their environment, easy to use, and also interesting.

5. How do we do holistic assessment of students' performance?

Students have different levels of

intelligence and it affects their learning performance. It would be unfair to only assess students' performance against only one criterion, e.g. academic. It would be beneficial for those with high performance but detrimental to low performing students.

Academic performance, attitude, assessment of written work, projects, products, use of portfolio and self-assessment can all be used to assess students' performance holistically.

Authentic assessment must be done in evaluating learning results. Assessment rubrics used in authentic assessment give comprehensive information about student performance, based on their own capabilities.

6. Why is students' work important?

Students' work is the concrete result of contextual learning that is well-planned and implemented. Good students' work can be used as a model and learning resource for other students. Besides representing the learning results, students' works also reflects and fosters students' multiple intelligence.

7. Why is a reflective journal important?

A reflective journal is a record of teachers' successes, failures, satisfaction or feelings that are related to contextual the teaching and learning processes. It can be used to analyze whether learning is a success or otherwise. Reflective journals can be used as a base to improve lesson plans for the betterment of future learning.



Students designing equipment that simulates energy transformation in daily life during a science class

Analyzing Energy Transformation

Pak Sudirman, a science teacher for Class VIII, SMP Negeri 1 Ma'rang, Pangkep tells of his experiences in facilitating contextual science learning

THIS lesson is designed to motivate students to understand the relevance of energy transformation in their daily life. I developed **Basic Competency 5.3. Explaining the correlation between energy and its transformation, laws of force and energy and their application in our daily life.** This lesson aims to help students to be able to find different forms of energy and to apply the concept in their daily life. To support the effectiveness and productivity of our lesson, I facilitated the students by using cooperative learning to solve problems.

The lesson went as follow: First, I divided the students into six groups where they had to solve a problem by doing a simple experiment. I prepared 6 different worksheets and each group was given one worksheet.

Maxwell Group: Design a device that can be used in an archipelago-based tourism activity. This group created a **Boat.** The following materials were provided: batteries, dynamo, wires, switch, plastic glasses, styrofoam, straws, sticky tape and glue.

Joule Group: Design a device that cools you down in a room. This group created a **Fan** using a battery, dynamo, wires, switch, plastic glasses, styrofoam, straws, sticky tape and glue.

Newton Group: Design a device that lights up your

room when you study at night. This group **assembled an electrical installation that lights up a bulb.** Tools provided: Batteries, wires, light bulb, a piece of bamboo, switch, sticky tape and gift wrap.

Ampere Group: Design a device that you can use to decorate and light an area at the same time. This group made a set of decorative lamps. Tools provided: Batteries, wires, light bulb, plastic glasses, switch, sticky tape and gift wrap, ice cream sticks.

Lorenz Group: Make a device that you can use to go from one island to another in Pangkep. This group created a **Boat.** They used batteries, dynamo, wires, switch, plastic glasses, styrofoam, straws, sticky tape and glue.

Galileo Group: Design a tool that you can use to make fruit juice quickly. This group made a simple blender. They used: Battery, dynamo, wires, switch, water bottle, styrofoam, pieces of metal and sticky tape.

Following the experiment students presented their work. At this stage

they identified the forms of energy that they were associated with the devices that they made and they also described the energy transformations occurring. I facilitated their discussion on the energy transformation that they found through their experiments. Maxwell group identified three different types of energy and their transformation from chemical energy to electric energy to movement.

Lastly, the students wrote a report of their experiment and the steps to making their devices. At this stage, they not only showed their abilities to present their work, but they also expressed how much they enjoyed the learning processes.



After making their successful designs, the students present the result of their experiment

A Market in the Classroom



Ibu Darmian Samosir, S.Pd, A Social Studies Teacher at SMPN 1 Sidikalang, Dairi, showed a different way to teach her students about the market. She did not pick a theory out of the text to dictate her students. She and her students created a market in the classroom. The students took the roles of sellers and buyers.

Class VIII-6 looked messy. There were clothes hung on the wall, different knick knacks were laid on the table. The students tried to recreate a market in their classroom. But unlike traditional markets that are muddy and smelly, this

A market set up in the classroom helped make students' learning contextual

market sat on concrete floor and uses tables as the stalls. Haggling was also an interesting process in this market, where the seller not only sold their goods but also explained the price level of all the goods they put on display.

By having a market in the classroom students were better able to grasp the buying-selling process that happens in real life. Ibu Darmian also added that this learning model equips students with actual haggling skills.



Students learn directly from a resource person and the farm

PAK SUAIB, a corn farmer in Tamalatea, Jeneponto, spoke in front of class VIII SMPN 4 about his farm and how to grow corn correctly. Pak Orban, the Bahasa Indonesia teacher asked the farmer to get involved in teaching Basic Competency: 4.3. *Writing instruction using the correct steps and*

Learning to Write Instructions from a Farmer

an effective language. It was hoped that the students could get ideas from the resource person.

The lesson lasted for 2 x 40 minutes, which involved: *First*, students were given an **individual task** to note facts about corn that is planted and grown correctly, and those that were not planted and grown correctly; students were also asked to observe and take notes of how to grow corn correctly, based on the presentation by the farmer. *Secondly*, the students **worked in groups** with the following tasks: 1) discussing and analyzing the information on how to grow corn correctly, (2) browsing to find the right clues from the **Learning Resource Envelope**, (3) working together to compose sentences to create an instructional text on how to grow corn

correctly, and (4) to display their work. (5) comparing work from the different groups. I facilitated students to discuss their work and how it was different from other groups' works. (6) presenting their work. Students were given the opportunity to give feedback.

Thirdly, teacher gave the students some enrichment by showing them the correct steps for the instruction.

This activity was finished in 65 minutes. 10 minutes were used for the introduction, and 5 minutes were used for learning reflection. Following this active learning, students were able to gather the main ideas from the resource person and to develop their language ability both in writing and verbally.

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