

LANGITSELATAN AS AN ASTRONOMY LEARNING BASE FOR CITIZEN PROJECTS IN INDONESIA

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ABSTRACT

These days, advanced technologies provide an easy way for the public to obtain information about anything, including astronomy. Most people know astronomy for its sky events and scientific results. In Indonesia, the public has a high interest not only in astronomy information but also in participating in astronomy events, but it is limited to those who has access to a club nearby. Otherwise, for those who live in remote areas or simply don't have any access, they depend on information from newspapers, magazines, books or word of mouth. They usually think that astronomy is a difficult subject to learn, while in fact it is something doable and fun.

Key words: journals: citizen projects, Indonesia

1. INTRODUCTION

Astronomy, as the oldest science, is becoming more popular now. Many people know what Astronomy is and all of the information about planet or sky events. Why are people becoming more aware of astronomy? Because it is an interesting science. Some astronomy events look amazing and amusing so a lot of people want to see and become a part of those events. Besides this interest, astronomy is close to us. When you look at the sky, Moon, stars or Sun, these are the astronomical objects that you can look at every day. From these things come folklore or star lore in many different cultures.

All of this makes people curious about astronomy. Astronomy is not a special study for students from elementary to senior high school. It is included in natural science study. Astronomy is a study which is interesting, fun, rich in art and culture, close to us, and simple. Therefore, we should improve methods for teaching and learning astronomy with fun and simple methods. Starting off with a story about the ancient myths of sky and stars in Indonesia, we make something simple and easier for citizens, especially teachers, to teach about astronomy. An example is the puppet show method.

An increasing interest in participating in the Olympiad of astronomy at the high school level in Indonesia also helps to attract more students to astronomy. However, because the Olympiad is a competition based activity, this kind of activity is not sufficient enough to accommodate their interest, and therefore there is a need for broader activities that can cater to the interests of the public. Therefore we build and pro-

vide simple methods for the public, and especially for schools, to engage their students with astronomy content in a fun and easy way. The method we propose in this project is the Shadow Puppet Show, something close to the Indonesian public, especially the Javanese who use shadow-puppet show or *wayang* to deliver stories to the public. We will also use another method to improve this project. As a result, we expect an active participation from the public not only to use and improve the method but also provide more stories from their local culture.

2. THE PROBLEMS OF ASTRONOMY METHODS IN INDONESIA

The advance of technology make it easy for people to obtain information about anything, including astronomy. Many people know about astronomy events. In Indonesia, much of the information and events for astronomy are interesting, and for citizens who have access or connections, they can explore and easily participate in astronomy events. Otherwise, for people with restricted access, they still use information from books or mouth to mouth. They think astronomy is a difficult study without fun or a simple method. Therefore, we want to make a simple method so people can get the material locally. With this method, we want people to get the same information and advantages for astronomy, even though they have use different way to access it.

3. THE CITIZEN PROJECT'S METHODS

- The Shadow Puppet Show
The shadow puppet show is one of methods which

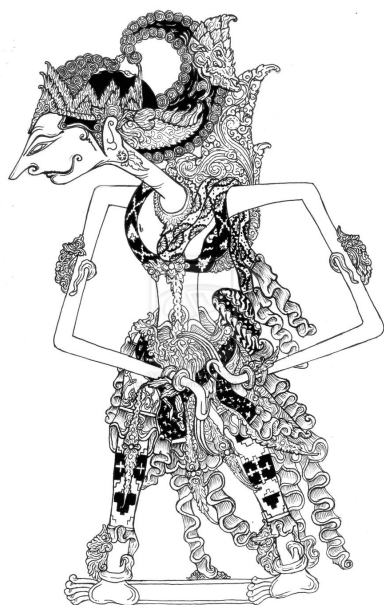


Figure 1. shadow puppet



Figure 2. constellation sky map

is simple and fun. Students or teacher can make puppets with anything around them; cardboard, straw boards, or paper. The characters of the puppets come from the characters of folklore or myths of their village or region. We want a result where teachers or students can use this method, and improve and share their knowledge with other people. We also hope that this method produces a positive response, and many that people get access to astronomy wherever they are.

- Constellation Sky Map
A constellation sky map is the simplest method to learn about constellations. The materials to make the sky map are Styrofoam or multi board for the base, ice cream sticks for the line of the constellations, and round wood or iron for the coupling point. The sky map works with the lines to change the constellations. Using this sky map, students or children will easily understand about the shape of constellations.
- Water Rocket



Figure 3. water rocket show

The water rocket is a fun astronomy education activity for students, especially for space exploration. Kids' imaginations can grow with the activities, from designing to planning the destination of the rocket launching. An additional "challenge" can be added by giving another mission to land a rover. They will be asked to make the rover's cap design from eggs, which will be launched with the water rocket. The students also watch MER and other Curiosity videos in the middle of this activity. The mission is accomplished if the egg rover can land without any cracks.

4. IMPLEMENTATION AND EVALUATION

We target teachers or other educators who can use these methods to teach astronomy with simple and fun activities. We hope students can understand and learn astronomy without the worry that astronomy is a hard subject.

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