

Popularization of astronomy in elementary school

Audiovisual production for the teaching of the phases of the Moon

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Abstract. The present paper aims to describe the process of audiovisual production on the theme "Earth and Universe" for the 5th grade of elementary school, contemplating the object of knowledge "periodicity of the Moon's phases" of the flexible school curriculum of São Caetano do Sul, under the Institutional Program of Scholarships for Initiation to Teaching (Pibid) of the Federal University of São Paulo (Unifesp), Diadema campus, in the year 2021. It is expected that the video activity will promote the investigation of the sky by the student and may serve as a subsidy to mitigate the impacts generated by social distancing in science teaching during pandemic times, using low-cost experimentation material as a pedagogical tool.

Resumo. O presente trabalho objetiva descrever o processo de produção audiovisual sobre a temática "Terra e Universo" para o 5º ano do ensino fundamental, contemplando o objeto de conhecimento "periodicidade das fases da Lua" do currículo escolar flexibilizado de São Caetano do Sul, no âmbito do Programa Institucional de Bolsas de Iniciação à Docência (Pibid) da Universidade Federal de São Paulo (Unifesp), campus Diadema, no ano de 2021. Espera-se que a atividade em vídeo promova a investigação do céu pelo estudante e possa servir de subsídio para atenuar os impactos gerados pelo distanciamento social no ensino de ciências em período pandêmico, com a utilização de material de experimentação de baixo custo como ferramenta pedagógica.

Keywords. Teaching of Astronomy – Moon

1. Introduction

We seek to meet part of the needs of basic science education in the period of social distancing, and for this, we chose the video resource as a way to cover the students in the period of health crisis and bring them closer to low-cost experimentation. To optimize the visual and technical quality of the work in the teaching process, we used some elements such as: the pedagogical proposal, attention to the target audience, language, and technical-aesthetic aspects (Gomes 2008). In this context, the video produced included a compilation of images extracted from the internet and a narrated presentation to the viewer about the Moon's formation hypothesis, its evolution through time, characteristics, and the monthly cycle of the natural satellite. The production also includes a tutorial for assembling a simulation of the moon's phases in a cardboard box, with presentation of the results to encourage investigation of the sky and a didactic resource to support the science teacher.

2. Methodology

The video was produced with the aid of an ordinary smartphone, and the application "YouCut - Video Editor" for video editing. Observing the literature for making teaching videos (Gomes 2008; Bahia & Silva 2017), the production goes through elements that aim for technical quality for the teaching process. In this sense, we established the methodology that combines the tutorial video format with the instructional video (Bahia & Silva 2017). In production, there is an exhibition of the assembly experimental artifact (Saraiva et al 2007) and conceptual epitome of the formation and lunar cycle, which follows accompanied by animations and texts that enable the exposure of the theme in a dynamic way for use as a teaching resource in science.

3. Results

The production initially addresses the large impact hypothesis for the discussion of the lunar origin, and later describes the main geological features of the Moon, as well as its formation time scale and lunation. Finally, we present an experiment that simulates the phases of the Moon in a cardboard box (Figure 1), aiming to facilitate the conceptual understanding of the different portions of the lunar surface illuminated by the Sun during the synodic month (Saraiva et al 2007).

4. Final considerations

The health crisis and social isolation have brought the need to explore new technologies for the development/improvement of new didactic activities. In this sense, the realization of low-cost video experimentation through smartphones is promising in science education and a very favorable alternative didactic resource, since it encourages and contributes to the dissemination of astronomy in the early years of elementary education. We consider, therefore, that knowing and discussing the quality of the educational product in video becomes essential for the improvement of new technologies and the diffusion of science in current times.

References

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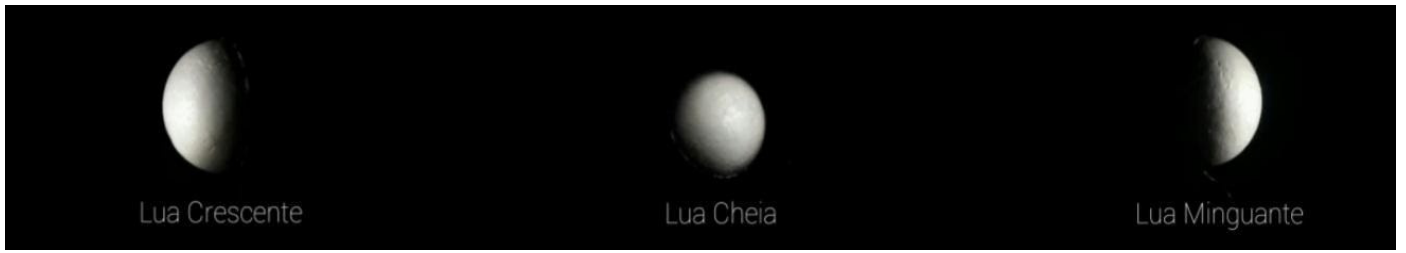


FIGURE 1. Lunar Phases Simulator.