

An Analysis of 'The Phase Changes of the Moon', the Contents in Science Textbook of the 9th Grade

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Abstract

The purpose of this study is to analyze illustrations, contents, and experiment in 6 kinds of science textbook from the 9th grade covering the phase change of the Moon (on the phase change of the Moon in six 9th grade science textbook) and to suggest coherent and effective contents and frame of the science textbook. Hence, the researcher decided the study problem. The study problems are as follows: 'Are the illustrations in the science textbook presented to help understand the phase change of the Moon depending on the position of the observer?', 'Does the contents of the book clearly mention the phase change of the Moon?', 'Can students understand the phase change of the Moon through the experiments in the science textbook?', 'Do illustrations, contents, and experiment of the science textbook consistently explain phase change of the Moon?'. 10 persons (9graduate students including the researcher) took part in this study. All things unanimously agreed upon by all participants were reflected in the results. The results are as follows. First, the universe observer's view point is mixed with the earth observer's view in illustration of these science textbook regarding the phase change of the Moon. Moreover, illustrations of some textbooks are presented with such words as 'sunrise', 'midnight' and consequently contain too much contents. Second, the contents of the science textbook concerning the phase change of the Moon is not described clearly. In addition, they don't give clear and detailed explanations for the reason of the phase change of the Moon. Third, all of the textbooks, except one textbook, describe the experiment regarding the phase change of the Moon with the earth observer's view point but don't specifically mention that the view point is that of the earth observer's view point. Fourth, illustrations, contents, and experiments in the science textbook don't coherently explain the phase change of the Moon. In addition, it is confirmed through the process of the result analysis that the described contents in the science curriculum is not well constructed or logical.