



A CROSS SECTIONAL STUDY ON THE SUCCESS OF THE PRE-SERVICE SCIENCE TEACHERS REGARDING THE MOON AND ITS MOVEMENTS

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Abstract

The objective of this study was to examine the changes in pre-service Science teachers' achievements and alternative concepts about the moves, phases and eclipses of the Moon in terms of their year of study. The study was conducted with 306 pre-service Science teachers (in their first, second, third and fourth year of study) studying at a university in the Black Sea region of Turkey. Moon Achievement Test (MAT) was used as data collection tool. One factor variance analysis (One-Way Anova) technique was used for independent groups in data analysis in order to find out whether pre-service teachers' achievements in concepts about the "Moon" differed in terms of their year of study. In addition, question by question analysis was conducted in order to find out pre-service teachers' alternative concepts about the Moon. Data analysis showed that year of study did not have an influence on pre-service teachers' achievements in concepts about the Moon. In addition, it was found that pre-service teachers had some alternative concepts and as their year of study advanced, these concepts did not change much. Some of these alternative concepts are: "the Moon will be in the full moon phase during the Solar eclipse", "Solar eclipse will occur in Sun-Earth-Moon cycle", "phases of the Moon will be new moon-first quarter-last quarter-full moon", "a full rotation of the Moon around the Earth will last for 1 day or 1 year". In line with these results, it was recommended for institutions educating Science teachers to revise their Astronomy lesson.

Keywords: Astronomy, moon, alternative concept.