**Affordance Analysis of Astronomical Illustrations Providing Both Earth-based persepective and Space-based perspective**

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**Abstract**

*The purpose of this study was to analyze the affordance of illustration in learning about the “cause of seasonal change” presented in Korean elementary schools to derive the form of astronomical illustration for effective science learning. For the study, 80 sixth-grade students from elementary schools (40 in the experimental group and 40 in the control group) were randomly sampled and conducted. In the study, an eye-tracker was used to analyze the affordance of illustration. The collected data was analyzed for re-reading of illustration and visual transition using the Lag Sequential Analysis method. The results showed that, First, the experimental group, which learned tasks that considered learner’s affordance by simultaneously providing earth-based perspective and space-based perspective, showed a greater integrated understanding. Second, in the experimental group, the number of re-readings of illustration and the transition-frequency increased. The result was significant compared to the control group. This study suggests directions for effective astronomical learning for elementary school students by analyzing the relationship between the affordance of illustration and learning effects.*

**Keywords**

Elementary school, Astronomical education, Illustration, Affordance, Earth-based perspective, Space-based perspective.