

THE EFFECTS OF COMPUTER-SUPPORTED INQUIRY-BASED LEARNING
METHODS AND PEER INTERACTION ON LEARNING STELLAR PARALLAX

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ABSTRACT

The presented study examined the effects of computer-supported inquiry-based learning and peer interaction methods on effectiveness of learning the stellar parallax concept and was conducted among 199 non-science major students enrolled in an introductory astronomy course at the University of Missouri. A computer-based tutorial *Stellar Parallax Interactive Restricted and Unrestricted Tutorial (SPIRUT)* was developed for this investigation.

Results of the study revealed that students who learned the concept with *SPIRUT* constructed greater conceptual knowledge and were able to better transfer it to another situation while their mathematical skills were equally improved as those students who worked with the paper-based tutorial. It was also evident that there was no difference between students' performances after their engagement with the learner-controlled or with the program-controlled version of *SPIRUT*. It was also found that students who worked independently constructed slightly greater knowledge than students who worked with peers. Nevertheless, there was no significant difference found of retention of knowledge after any type of treatment.