

Abstract Submitted
for the TSF09 Meeting of
The American Physical Society

Effect of Interactive Computer Simulations on Elementary Education Teachers' Understanding of Light Matter Interactions SIMEON MBEWE, FRACKSON MUMBA, MARY WRIGHT, HARVEY HENSON, VIVIEN CHABALENGULA, Southern Illinois University Carbondale, SCIENCE, MATHEMATICS AND ACTION RESEARCH FOR TEACHERS (SMART) PROGRAM TEAM¹ — This study assessed the effect of interactive computer simulations on elementary education in-service teachers' understanding of light matter interactions. A sample comprised 27 elementary education in-service teachers who were in a Master of Science in Mathematics and Science Education degree program at a mid-sized university in Midwest of the USA. Data was collected through pre and posttests. A t-test showed a significant difference between pre and post-tests. The analysis of pretest responses showed that teachers were not able to define or explain photons and electromagnetic spectrum. However, posttest responses showed that most teachers provided correct descriptions of these concepts and provided examples to explicate their responses. Based on our results, the interactive computer simulations had positive and significant impact on teachers' understanding of light matter interactions. Detailed results, implications for teacher education and science teaching and learning will be stated and discussed

¹This program was funded by Illinois State Board of Education

Simeon Mbewe
Southern Illinois University Carbondale

Date submitted: 26 Sep 2009

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