

Abstract Submitted
for the APR18 Meeting of
The American Physical Society

Learning physics by experiment: II. Optical paths SAAMI SHAIBANI, Instruction Methods, Academics Advanced Scholarship (IMAAS) — There are multiple benefits for students when they learn by doing; more so when there is greater freedom of discovery, such as when they are not constrained at the outset to make their data agree with particular formulae or principles. The aesthetic qualities of light are of special attraction to many students, and this property is put to good use in laboratory exercises that involve both reflection and refraction. These circumstances create considerable student enthusiasm, which promotes the opportunity to identify a number of important real-world applications of the investigations performed. The design of the experimental procedure enables students to capture measurements that lead directly to values for physical characteristics of various materials, which are involved in the safety of natural resources. The underlying philosophy and methodology for this teaching approach, which are described in earlier work[1] and in other similar research[2,3], produce here the same high level of favorable outcomes for student learning. [1] <http://meetings.aps.org/link/BAPS.2014.APR.D1.50>; [2] *Announcer*, 34 (2), 164 (2004); [3] *Bull Am Phys Soc*, Vol 63 (in press)

Saami Shaibani
Instruction Methods, Academics
Advanced Scholarship (IMAAS)

Date submitted: 02 Nov 2017

Electronic form version 1.4