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Heads, Hearts, and Hands in Computational Physics

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A computer-based approach to teaching must be flexible because students and teachers have different skills, computational confidence, and varying technical backgrounds. Learning how to run the software du jour is not the objective of integrating computation into the curriculum. Learning computational thinking, how to use computation and computer-based visualization to communicate ideas, how to design and build models, and how to use ready-to-run models to foster critical thinking is the objective. This talk describes how Open Source Physics (OSP) material in the AAPT-ComPADRE National Science Digital Library can be used to engage students through cognitive (head), affective (heart), and psychomotor (hands) activities. Examples from the OSP Collection will be presented.