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Scientific Assistant Virtual Laboratory (SAVL) GITA ALAGHBAND, HAMID FARDI, DAVID GNABASIK, Univ. of Colorado at Denver & Health Sciences Center — The Scientific Assistant Virtual Laboratory (SAVL) is a scientific discovery environment, an interactive simulated virtual laboratory, for learning physics and mathematics. The purpose of this computer-assisted intervention is to improve middle and high school student interest, insight and scores in physics and mathematics. SAVL develops scientific and mathematical imagination in a visual, symbolic, and experimental simulation environment. It directly addresses the issues of scientific and technological competency by providing critical thinking training through integrated modules. This on-going research provides a virtual laboratory environment in which the student directs the building of the experiment rather than observing a packaged simulation. SAVL: * Engages the persistent interest of young minds in physics and math by visually linking simulation objects and events with mathematical relations. * Teaches integrated concepts by the hands-on exploration and focused visualization of classic physics experiments within software. * Systematically and uniformly assesses and scores students by their ability to answer their own questions within the context of a Master Question Network. We will demonstrate how the Master Question Network uses polymorphic interfaces and C# lambda expressions to manage simulation objects.

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