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Virtual laboratory for experiencing science at molecular level

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Abstract:

Understanding the knowledge at molecular level is one of the most difficult issues in teaching and learning of scientific classes because there might not be feasible for the students to practice realistically in laboratory. Therefore, an interactive virtual system is proposed to give the students' experience in learning scientific knowledge at molecular level and training their critical thinking by visualizing the simulating experiments and designing the appropriate solution for various assignments. The interests of the students stimulated by the hand-on experiences in solving the problems using the interactive virtual system will be compared before and after the practical training. The regular survey will be conducted and the system will be further optimized. The virtual system could also be integrated into the existing courses in order to improve the quality of the lectures by giving the students a more comprehensive knowledge and experiences of science at molecular levels.