

A key obstacle to offering college-level chemistry courses online is implementing the laboratory component. One approach employs "virtual labs," in which experiments are simulated on a computer. Recently, vendors have begun marketing laboratory kits intended to provide a more authentic laboratory experience for distance-learning students. In the first phase of the project, laboratory kits and supplementary materials from three vendors were examined for possible use in the CHEM 120 (Chemistry for the Allied Health Sciences) course at MSSU. Three experiments from each vendor were evaluated on six criteria: availability of sufficient experiments, quality of the materials and experimental data that could be obtained, understandability and ease of use for students, accuracy of the pedagogical content, adaptability for use with Blackboard, and cost to students and the university. Based on preliminary conclusions from the first phase, the original vendor (Hands-On Labs) was replaced with Carolina Distance Learning (CDL). In the second phase of the project, the CDL materials were subjected to a more thorough analysis. Thirteen experiments were evaluated on six criteria: quality of the stated learning objectives (LOs); alignment of the stated LOs with the departmental and course-level LOs for CHEM 120; quality of the written materials, including the clarity of the instructions, discussion questions, and report forms; and to what extent each experiment would help students meet the targeted LOs. The chemicals and equipment were found to be of good quality, but the provided background reading and experimental instructions tended to be confusing, and, in some cases, simply incorrect.