

1086-C1-647

Jennifer S. Hegeman* (hegeman@missouriwestern.edu), 4525 Downs Drive, St. Joseph, MO 64507. *Student Learning Outcomes in General Studies Mathematics: A Comparison of Online and Face-to-Face.*

Online general studies math courses are becoming more common, in part due to the development of text-based, interactive multimedia tools that provide comprehensive online course materials. This study compared student learning outcomes in online offerings of college algebra with student learning outcomes in face-to-face offerings at an open-enrollment university over a two-year period. Students enrolled in face-to-face sections consistently performed statistically significantly better than students enrolled in online sections on handwritten exams. A closer examination of handwritten student responses to a typical college algebra problem indicated that significantly more online students were unable to demonstrate a minimal level of algebraic understanding and frequently included a multitude of serious mathematics errors in their attempted solutions. Furthermore, solution methods attempted by online students varied greatly in comparison to solution methods attempted by face-to-face students. Although it is tempting to believe that comprehensive, text-based course management systems are the answer to the administrative push for more online courses, educators using one of these systems in online freshman-level math courses should not assume that students will be successful. (Received September 10, 2012)