Student Performance on Courseware Assignments in Statistics: A Comparative Analysis of Long-Term
Student Progress and Contributions of Self-Efficacy, Gender, and Assignment Style

ABSTRACT

Student performance on courseware assignments was investigated in two different implementations of a
statistics course, both of which required students to use courseware. Students' performance on courseware
assignments was compared to their performance on non-courseware assignments. Performance on both
types of assignments and the gap between the two types of performance were compared between the
beginning of the course and the end of the course. Students' performance on courseware assignments
relative to their performance on non-courseware assignments showed significant gain by the end of the
course for both groups. Performance on both types of assignments and in the course overall was
investigated as a possible function of computer self-efficacy, self-efficacy for self-regulated learning, and
mathematics self-efficacy. In one group, computer self-efficacy predicted student performance on
courseware assignments at the beginning of the course, but not by the end of the course. In the other
group, self-efficacy for self-regulated learning predicted student performance on courseware assignments
at both the beginning and at the end of the course. However, at the beginning of the course, when
mathematics self-efficacy was taken into account, self-efficacy for self-regulated learning did not make an
independent contribution to student performance on courseware assignments. Nevertheless, in that group,
self-efficacy for self-regulated learning was the only predictor of student performance on courseware
assignments at the end of the course. In both settings, of all three types of self-efficacy examined,
mathematics self-efficacy was the only independent predictor of overall course performance. In one
group, gender differences favoring males appeared in computer self-efficacy and in performance on
courseware assignments relative to other assignments. However, gender differences in relative
performance did not persist to the end of the course. Further, no gender differences were detected in
overall course performance in either group.