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William H Rybolt* (rybolt@babson.edu), Babson College, Math/Science Division, 231 Forest Street, Babson Park, MA 02457-0310, and **John D McKenzie** (mckenzie@babson.edu), Babson College, Math/Science Division, 231 Forest Street, Babson Park, MA 02457-0310. *Assessing the Impact on Student Learning and Behavior in a First Applied Statistics Course by Innovative Use of Three Delivery Types Including Online Homework: Experimental Design and Implementation.*

We conducted an experiment during the spring of 2009 to assess the merits of different methods of administering homework in an introduction to applied statistics course. The experiment employed a cross-over design involving two different instructors each teaching two sections of the course. Each student was given three different types of homework: paper, MyMathLab online with immediate feedback, and MyMathLab online with delayed feedback. At any given time half of the students were doing paper homework; the others one of the two online types. On the three exams, all students were given several common questions. By the end of the semester for each student we had demographical background data and performance results on the homework and common exam questions as well as other aspects of the course. Survey responses concerning their experience with and attitude towards different types of homework were also collected. After describing implementation of the design, we conclude with the practical difficulties encountered, our coping mechanisms, and how we benefited from previous experiments. In the next paper we give initial results and explain its impact on future homework choices. (Received September 19, 2009)