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Luke Smith* (lsmith4@aum.edu), School of Education, PO Box 244023, Montgomery, AL 36124.

Using Reform mathematics pedagogy in developmental mathematics courses to improve student success with application problems.

Postsecondary remedial mathematics courses possess relatively low pass rates compared to other courses and have acquired the reputation as "gatekeepers" for college success. This quasi-experimental study examined the effect on student achievement that resulted from teaching postsecondary remedial mathematics students according to the pedagogical practices advocated by reform mathematics organizations (such as the National Council of Teachers of Mathematics) versus students who were taught through traditional didactic lecture. Student achievement was measured in terms of pass rates, procedural ability, application ability, and performance on the comprehensive departmental final exam. Statistical analysis controlled for variables in which the two groups significantly differed and found that students who received instruction according to reform pedagogy demonstrated significantly higher application ability than students who received traditional didactic lecture instruction ($p < 0.05$). Further, the gains in application ability did not come at the expense of pass rates or procedural ability. (Received August 04, 2014)