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Ted R Hodgson* (hodgsont1@nku.edu), Department of Mathematics, Northern Kentucky University, Nunn Drive, ST 305, Highland Heights, KY 41099, and **Gaye W Fearn** (gwfearn@msn.com), Department of Mathematical Sciences, Montana State University, Wilson Hall, Bozeman, MT 59717. *Conceptual Understanding and Procedural Performance in Undergraduate Survey of Calculus.*

It is widely believed that procedural success is related to conceptual understanding. Rather than developing in isolation, students' procedural and conceptual knowledge presumably develops iteratively, in a hand-over-hand manner. To assess the relationship between procedural and conceptual knowledge, the authors examined students' performance on procedural and conceptual tasks over the course of a semester in undergraduate Survey of Calculus. Is there a significant correlation between students' knowledge in these areas, and does the relationship depend upon students' level of success in the course? The study found that students who attain procedural proficiency do tend to perform better on conceptual tasks, yet the correlation is not significant. Moreover, the relationship between procedural performance and conceptual understanding is notably imperfect. In particular, some A-students exhibit little conceptual understanding, while some C-students perform consistently well on conceptual tasks. The results, therefore, challenge beliefs about the iterative nature of procedural and conceptual knowledge. The session concludes with implications for instruction and reflections on the assessment of conceptual understanding. (Received August 11, 2007)