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A quantitative and qualitative comparison of homework structures in a multivariable calculus class.

Dewar, Jacqueline M. (ed.) et al., Doing the scholarship of teaching and learning in mathematics. Washington, DC: The Mathematical Association of America (MAA) (ISBN 978-0-88385-193-7/pbk; 978-1-61444-318-6/ebook). MAA Notes 83, 67-76 (2015).

Summary: This chapter describes the work of an interdisciplinary team to improve the effectiveness of homework in a multivariate calculus class by using an online homework system. Although at the beginning of the investigation, the majority of the team members were not very familiar with qualitative methods, they found the qualitative data particularly useful for providing context and depth to the mixed quantitative results they obtained. Their study highlights the merit of a mixed method approach, particularly when statistically significant results are not obtained from quantitative data. The authors also testify to the value they found in working collaboratively with colleagues from other disciplines.

Classification: D20 D45 I65 U75

Keywords: scholarship of teaching and learning; universities; educational research; research methods; interdisciplinary approach; experience reports; evaluation; mixed approach; teaching-learning processes; didactics of mathematics; institutional assessment; educational diagnosis; affective aspects; homework; multivariable calculus course; academic approach; professional development; peer review; experimental teaching