

## Comparing a Hybrid Mathematics Course with a Conventional Mathematics Course: A Case Study at a University of Technology

K. Naidoo<sup>1</sup>, R.Naidoo<sup>2</sup> and K. Ramdass<sup>3</sup>

<sup>1</sup>*Natural Science Department, School of Education, Durban University of Technology,  
P.O. Box 1334, Durban, 4000, South Africa  
Phone: +27338458937, Fax: +27338458936,*

<sup>2</sup>*IODL, School of Transdisciplinary Research, CGS, Unisa, P.O. Box 392,  
0003 Pretoria, South Africa  
Phone: +27832030953*

<sup>3</sup>*Department of Mechanical and Industrial Engineering, College of Science, Engineering and  
Technology, Unisa Florida Campus, Private Bag X6, Florida, 1710 South Africa  
Telephone: +27114712117, Cell: +27824173545*

*E-mail: <sup>1</sup><kristieN@dut.ac.za>, <sup>2</sup><naidor@unisa.ac.za>, <sup>3</sup><ramdacr@unisa.ac.za>*

**KEYWORDS** Undergraduate Mathematics. University of Technology

**ABSTRACT** This study compares student performance in an undergraduate mathematics education course using a Traditional Learning Model and a Blended Learning Model at the University of Technology. The control and experimental groups consisted of 150 students in each group. Student examination scores from both groups were analyzed quantitatively. A random sample consisting of 40 students, from the Blended Learning Model group, was clinically interviewed and a qualitative analysis was performed. The Theory of Connectivism informed the method used to analyze the data. The quantitative analysis indicates that the students performed better using blended learning. The qualitative analysis indicated that the students preferred the blended learning in terms of resources, communication and collaboration. The study has implications for both curriculum development and pedagogical considerations for the training of pre-service secondary school mathematic teachers in a 21<sup>st</sup> century undergraduate course at a University of Technology.