Incorporating Best Practices in Mathematics Methods Courses:  
A Comparison of Teletechnet and Traditional Classrooms

Abstract: Distance education courses are frequently being offered in 
institutions of higher learning. Current research is conflicted as to 
determining effectiveness of academic achievement in these non-traditional 
classrooms. Researchers from Old Dominion University are conducting a 
longitudinal study between Teletechnet and traditional elementary 
mathematics methods courses to compare instructional strategies, student 
perceptions of the courses, and academic performance. The foundation of 
method courses lies with the instructor offering strategies and examples, in 
this case to pre-service teachers. Even though the instructor can reach a 
potentially larger audience via distance courses it is far more important to 
ensure that quality instruction can and is still taking place. The very nature 
of the differing course delivery methods suggests that regular activities, 
strategies, and assignments will be modified. Implications of this study will 
lend support to maintaining or modifying instructional practices and 
pedagogy for elementary mathematics methods courses.

Technology is taking an ever more prominent role in educational institutions. In turn 
distance education courses are being offered from a vast majority of colleges and universities. 
Almost 90% of public educational institutions were offering some form of distance education 
during the 2000-2001 academic year. The instructor role and instructional strategies can often 
vary greatly between traditional and distance deliveries (Tallent-Runnels et al., 2006). Most 
distance learning research has focused on student achievement rates and whether distance or 
traditional instruction impacts student learning (Bernard et al., 2004). Currently, research is not 
readily available to examine the effectiveness of a distance learning environment at providing 
appropriate instruction for pre-service teachers in a mathematics methods course.

The purpose of this study is to present data to support the successful use of technology-
based distance learning instruction. Researchers will be comparing data from Teletechnet and 
traditional elementary mathematics methods courses taught by the same instructor across the 
2005, 2006, and 2007 academic years. The following research questions apply to this study: Do 
pedagogical and instructional practices vary in a traditional education environment when 
compared with a distance education environment? Is there a significant difference in student 
academic achievement between the two instructional formats? Do student perceptions of 
learning and instructor efficacy vary between traditional and distance course offerings?