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EXECUTIVE  
SUMMARY

In fall of 2010, Espresso Education commissioned MIDA Learning Technologies, LLC to conduct an independent study in several Northeastern Pennsylvania schools to determine the efficacy of Espresso Education’s web-based multimedia resources for primary education. The content area selected for this research study was mathematics. The research design selected for the purpose of this study was a nonrandomized control group pre-test/post-test design. Ten second-grade classes were selected from four (2 rural and 2 suburban) regional school districts in Northeastern Pennsylvania. During nine weeks of the final academic semester of the 2010-2011 school year, five of the classes (the experimental group) integrated Espresso Education into their regular mathematics instruction. A pre-test was conducted in the control and experimental groups to determine if there were differences between the groups at the outset of the experiment. The *t*-test indicated no significant difference in the means of Group 1 and Group 2 in the pre-test,  $t(172) = -1.168, p = .244$ . The experimental treatment—the integration of Espresso Education during normal mathematics instruction—

was conducted for a nine-week period in the five experimental group classes. The control group maintained the traditional mathematics instruction for the same period of time. A post-test was administered in the control group and the experimental group at the conclusion of the nine-week period. An independent Samples t-test was performed to determine whether there was any significant difference between the mean post-test grades in group 1 (control group) ( $m = 19.94, sd = 4.326$ ) and group 2 (the experimental group) ( $m = 22.18, sd = 4.629$ ). The  $t$ -test revealed a significant difference in the control vs the experimental groups,  $t(172) = -3.192, p = .002$ .

The conclusion drawn from the findings is that Espresso Education had a significantly positive impact on student performance. This finding is consistent with learning theory that promotes multisensory approaches to teaching in the early grades.