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Jane Butterfield, Harvey Keynes, Jonathan Rogness and Justin Sukiennik*

(jesukien@colby.edu), Department of Mathematics and Statistics, 5853 Mayflower Hill Drive, Waterville, ME 04901. *A Continuing Study of Gender Difference on a Qualifying Exam.*

We examine the qualifying entrance exam for the University of Minnesota Talented Youth Mathematics Program (UM-TYMP), a five-year accelerated program from high school algebra through vector analysis using linear algebra. The original 50-question, 20-minute exam, which assess computational, numerical reasoning and geometric skills, has accurately identified qualified students but with lower overall scores from females. We have extensively investigated the structure and content over the past several years to determine possible sources for these differences. In 2012, we made changes to improve the overall structure and content, and in the process, essentially eliminated the gender bias on one version of the entrance exam, increasing the percentage of females who qualified. The other 2012 unchanged versions showed the typical gender difference from previous years. We made similar modifications in an alternate version of the entrance exam for 2013 based on the 2012 exams, and several gender differences persisted in this newer version. Since the original version had different structural and content characteristics, we are continuing in our investigation to understand the sources and reasons for the differences while monitoring the overall student performance upon enter the program. (Received September 17, 2013)