Jingzhong Zhang* (zjz2271@163.com), School of Computer Science and Educational So, Guangzhou University, Guangzhou, Guangdong 510006, Peoples Rep of China, Zengxiang Tong (ztong@otterbein.edu), Department of Mathematical Sciences, Otterbein University, Westerville, OH 43081, and Hongguang Fu (fu_hongguang@hotmail.com), University of Electronic Science of China, Chengdu, Sichuan, Peoples Rep of China. The Integrated Trig-Geometry — A Revolution in Euclidean Geometry and Math Education Happening in China.

This paper, a result of Jingzhong Zhang's research in educational mathematics, presents a new logical structure of teaching Euclidean Geometry and Trigonometry to junior middle school students, which has been experimented with great successes in more than 50 middle schools in China in the past six years. The Integrated Trig-Geometry defines the trigonometric function sinA as the area of a unit rhombus with angle A, develops theorems of sine and cosine, co-height theorem, co-side theorem, and co-angle theorem, which play powerful roles in revealing geometric properties of triangles, polygons, and circles. Six years of teaching experiment have proven that this new approach can help the 7th and 8th graders to see the connection of trigonometry, geometry, and algebra, to develop an holistic view of mathematics, and to learn geometry and mathematics much more effectively. A great number of Chinese mathematicians have been working on improving and rewriting the K-12 math curriculum. We are witnessing a revolution in Euclidean Geometry and Math Education happening in China. (Received September 13, 2018)