TEACHING BACKGROUND

James Tanton

James Tanton (PhD, Mathematics, Princeton) is an educator rethinking the college and high school math curriculum to build a more effective and joyous educational experience for all, with over 20 years of teaching experience in these settings.

For the past twelve years, I have primarily worked as an independent education consultant, recently focusing my efforts as the Mathematics Course Architect for an online education startup. Prior to that role, I collaborated with an average of 15 national and 15 international clients each year, helping K-12 and college educators transform their approaches to teaching mathematics and conducting public outreach events for their communities.

From 2004-2011, I designed and conducted every year the five core mathematics courses for Northeastern University as they developed a Master's degree in Mathematics Education, working with approximately 30 educators for each course over seven years. Additionally, I created and delivered courses for the Harvard Extension School, American University, and later for Math for America's Washington, D.C. branch.

I believe that all mathematics can serve as a gateway to meaning, value, relevance, and joy for students. My approach is to present mathematical concepts with deliberate kindness, human relevance, and a sense of delight. I design curricula that declutter content, attend to human context, and explicitly teach thinking practices. There is no loss of rigor or content; in fact, my high school students have published six papers with original math research that resulted from our classroom work.

In 2016, I brought together a team of mathematics outreach leaders to create the Global Math Project (GMP), aiming to transform the perception and teaching of mathematics worldwide. We introduced a new visual approach, called *Exploding Dots*, that I developed for teaching foundational arithmetic and elements of high school algebra.

- During the first *Global Math Week* in 2017, over 1 million teachers and students from 80 countries and territories experienced this transformed curriculum.
- By 2023, the GMP had reached 7.8 million participants from over 150 countries and territories. (See this video for more details.)
- Other organizations, such as *DhiMath* in India, *Synthesis School*, *Mathigon*, and *ST Math* in the U.S., have developed *Exploding Dots* platforms. *Brilliant.org* uses *Exploding Dots* in their Number Bases course.
- *EduCaixa* in Barcelona, Spain, received a grant to test the effect of *Exploding Dots* on students' computational thinking abilities, conducting A|B testing with 70 schools, with results to be presented this March.

I am currently collaborating with ASU's Mary Lou Fulton College for Teaching and Learning Innovation and the Global Math Project to create an online course for practicing and pre-service teachers, titled *Creating Radical Joy in your Mathematics Classroom.* This course is based on the core principles that made *Exploding Dots* a global success.

Through my courses and consulting work, I have engaged directly with over 5000 mathematics educators and units of my curriculum have been used by over 7 million students in various countries. I have authored 16 books on mathematics, with over 10,500 volumes purchased by educators. Additionally, I created two courses for The Teaching Company's *GREAT COURSES* series, and I maintain a strong mathematics outreach presence on social media. I regularly produce YouTube videos, which have garnered over 3.6 million views, and have amassed 33.6K followers on 𝕏 (Twitter) as the result of posting an original mathematics problem each and every day since 2009.