HARROW
INTERNATIONAL SCHOOL
HONG KONG

9th May 2025

Testimonial on the Impact of
Dr. Natthapoj Vincent Trakulphadetkrai's Research-based Maths Through Stories initiative

By Travis Purnell (Lower School Mathematics Curriculum Leader,
Harrow International School, Hong Kong, China)

I am the Lower School Mathematics Curriculum Leader at Harrow International School in Hong Kong, China. In my role, I support maths teaching and learning across twenty classes, from Year 1 to Year 5, with around one hundred children in each year group. Over the past year, we have made significant progress in embedding Dr. Natthapoj Vincent Trakulphadetkrai's Maths Through Stories approach and the Young Mathematical Story Authors (YMSA) competition across our primary school.

We first took part in Dr. Trakulphadetkrai's on-line training in April 2024, which was attended by about 50 colleagues, including teachers and teaching assistants. The feedback after the training was very positive, especially from teachers in early years, Year 1, and Year 2. Staff appreciated the value of using narratives not only in maths but across the curriculum, and most agreed on the benefits, especially once they saw how maths stories could help build connections and deepen children's understanding.

The research basis for the Maths Through Stories approach is important to me and to the school. Knowing that the approach is supported by evidence (for example as evident in Dr. Trakulphadetkrai's intervention study with over 1,000 primary school children in England) and can make a difference to children's mathematical understanding and outcomes gives us the confidence to invest time and effort in adopting it. Having the research tools and mathematical conceptual understanding assessment resources from Dr. Trakulphadetkrai has been especially useful for thinking about how we can measure impact and continue to develop our practice.

After the training, I added a dedicated box for maths stories on every medium-term plan from Year 1 to Year 5, covering about sixty different units across the school. Each plan now links directly to the MathsThroughStories.org website, so teachers can quickly find stories relevant to the topic they are teaching, like fractions or multiplication. This small change has made it easier for teachers to get started and has helped maths stories become a more regular part of our planning.

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Topic	Year X [Block Name] Medium Term Plan	Lead Planner	Planner Name
Links to previous & future learning			
Essential Skills, Values and Leadership Attributes	CREATIVITY; DIGITAL LITERACY; EFFECTIVE COMMUNICATION; COLLABORATIVE PROBLEM SOLVING; CULTURAL COMPETENCY; CRITICAL THINKING; LEADERSHIP		
Leadership Values	Courage; Honour; Humility; Fellowship; Facing Challenges with **Determination**; Solving Problems **Creatively**; Solving Problems **Collaboratively**; Applying Knowledge with **Compassion**; Contributing **Positively** to the Community; Making **Fair** and **Just** Choices		
Knowledge Organiser Use			
Enrichment (events, trips, ambassadors)			
Key Vocabulary			
'Oracy' Strategies			
Adaptive Strategies	**Support**	**Stretch & Challenge**	
Assessment Opportunities			

Mental Maths Skills		Websites / Resources (Math Stories)	
Guidance & Comments	• How many lesson? • Lesson overview / details		• Impact of school events?

Lessons	Learning Intention / Key Questions	Success Criteria	Starter	Additional Comments / Reflection
1 (reference to last years medium term plan?)		•		
2				
3				
4				
5				
6				
7				

We have also invested in purchasing the Oxford University Press and White Rose mathematical story picture books for our younger year groups, so that all children in Reception, Year 1, and Year 2 have access to high-quality mathematical stories in class. Teachers and students use these books as a springboard for discussion, investigation, and, increasingly, for creating their own stories.

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Participation in the YMSA competition has grown significantly at our school. In our first year, we entered around 30 students, and last year that jumped to almost 80 entries, thanks in part to the competition's new 4–7-year-old category. This growth has been driven by greater exposure in school assemblies and more consistent reminders through our homework platform, Seesaw. Over the nine-week Spring term, I sent out weekly activities for each year group, gradually building students' confidence with creating and illustrating their own maths stories. The competition is voluntary, so when children choose to take part, it shows real engagement and interest.

While it can be difficult to measure changes in attainment in a setting where most children are already high attainers, there is evidence that students who participate in maths story activities develop a deeper understanding of concepts. For example, when Year 2 students created their own maths stories about fractions, they had to break down and explain the steps, which helped reinforce their own understanding. Teachers have reported that using stories in lessons has led to richer mathematical discussions, and students are more willing to talk through their thinking and explain their ideas.

I have seen that the maths storytelling approach is accessible for all students, regardless of gender. There is no clear difference between boys' and girls' engagement with mathematical story writing, and the competition entries are fairly balanced. For students who are already enthusiastic about maths, story writing is another way for them to shine, while for others, especially those who are more creative or enjoy English, it provides a fresh entry point into mathematical thinking.

A key step has been making the approach part of the routine, not just a one-off event. In my experience, the best progress comes from taking small steps, giving teachers time to experiment, share examples, and build confidence gradually. By drip-feeding maths stories into regular lessons and homework, and by making them part of every medium-term plan, the approach is gradually becoming a normal part of how we teach and learn maths. School assemblies where children share their mathematical stories and receive awards have also helped raise the profile and excitement.

Overall, Dr. Trakulphadetkrai's research-based Maths Through Stories initiative and its YMSA competition have become a key part of our school's approach to mathematics. We have seen growing participation, increased confidence in both teachers and students, and more meaningful conversations about maths in classrooms. My aim is to keep building on this foundation, sharing best practice with colleagues, and continuing to make maths engaging and accessible for all.

TJ Purnell

Travis Purnell

Lower School Mathematics Curriculum Leader
Harrow International School, Hong Kong (China)

DULWICH COLLEGE
| BEIJING |
北京德威英国国际学校

14th May 2025

Testimonial on the Impact of
Dr. Natthapoj Vincent Trakulphadetkrai's Research-based Maths Through Stories initiative

By Paul Readdy (Assistant Head of Mathematics Department, Dulwich College Beijing, China)

At Dulwich College Beijing, an international school with around 1,500 students and over 16 nationalities, we have long been keen to offer our learners new ways to approach mathematics. As Assistant Head of Mathematics for Key Stage 3, my main focus is supporting Years 7 and 8, with an emphasis on mathematical communication, creativity, and real-world application. Dr. Natthapoj Vincent Trakulphadetkrai's research-based Maths Through Stories initiative and its Young Mathematical Story Authors (YMSA) competition have become a valued part of this journey.

Our school's engagement with the YMSA competition goes back several years. When I stepped into my current role in 2022, I learned that Dulwich College Beijing had already established itself as a major participant, submitting hundreds of entries. This year, we're on the verge of reaching an incredible milestone – 1,000 student entries to the YMSA competition over the past six years. Not only do we have quantity, but the quality of entries is consistently high: each year, some of our students' entries are either longlisted or/and shortlisted by the judges.

With eight classes each in Years 7 and 8 (around 160 students per year group), we are able to offer this opportunity to a large and diverse cohort. While it is not every student who submits an entry, the competition is open to all, and we regularly see strong interest from both keen mathematicians and students whose strengths lie in creativity, communication, and art. The format, which brings together storytelling, illustration, and mathematical thinking, fits perfectly with our goal to make mathematics not just about numbers and formulas, but a language for communication and expression.

From the start, what has stood out is how much students enjoy this approach. Breaking away from the regular curriculum, the competition offers a chance for them to research, develop, and communicate their own ideas in a way that is meaningful to them. Many students, especially those who do not always "warm to" traditional maths learning through textbooks and worksheets, find the process of creating short mathematical story picture books highly motivating. It is an outlet for those who sometimes struggle with standard approaches, and it is equally embraced by students who are passionate about storytelling or visual art.

I have noticed that as students engage with maths through story writing, they begin to see maths not just as numbers and formulas, but as a language they could use to tell stories and solve problems creatively. The project brings the maths alive and helps students see how mathematical vocabulary can be woven into narrative and visual forms. In our multicultural environment, this is especially valuable: the competition is a genuine way for English as an Additional Language (EAL) students to develop both their maths and language skills together.

While measuring direct impact on maths attainment is always challenging – especially when many factors influence student outcomes – there is no doubt that the YMSA project has supported deeper understanding. As students create their books, they have to choose meaningful contexts, visualise the

maths, and actively think about how to communicate concepts clearly. This strengthens their grasp of the underlying ideas and gives them a reason to use new mathematical terms in context. From observing their work and classroom discussions, I can say there is a clear increase in enthusiasm, engagement, and confidence.

Although the mathematical storytelling approach is currently embedded in Key Stage 3, there is scope to extend its reach. Our primary section has only started to get involved very recently, with a few entries so far. With the introduction of the competition's new 4–7 age category, I am keen to see this approach adopted more widely across the school, from Reception up to Year 9.

Looking to the future, I am interested in building on our current practice. At present, the competition is a once-a-year event running from January to March. With a busy curriculum and pressures from exams and external assessment, it is difficult to do more, but I can see the value in making maths story picture books a formative assessment tool at the end of each term or topic. This would give students regular opportunities to connect the maths they have learned with real-world applications and creative communication. Embedding the approach more consistently would also align well with our focus on mathematical communication – a key skill for later success in IB Diploma projects and A-Levels, where students need to explain and explore maths in depth.

Knowing that this approach is grounded in research conducted by Dr. Trakulphadetkrai, which shows that students who create their own maths stories outperform their peers, gives me confidence and motivation to continue promoting it. I would be keen to support a community of practitioners across schools to share best practice and develop the approach further. While embedding the YMSA as a regular practice will require careful planning, it is clear that the competition and its underpinning pedagogical approach have influenced my thinking and the department's direction – especially in promoting mathematical communication.

Dr. Trakulphadetkrai's Maths Through Stories initiative and its YMSA competition have enriched the maths curriculum at Dulwich College Beijing, engaging around a thousand of our students, supporting language and creative skills, and opening maths up as a tool for storytelling and real-world problem-solving. My hope is to see the approach grow further – across all year groups, and as a regular feature of our teaching practice – so that every student can experience maths not just as numbers, but as a story worth telling.

Paul Readdy

Assistant Head of Mathematics Department
Dulwich College Beijing (China)

BAWTRY MAYFLOWER PRIMARY SCHOOL

6th May 2025

Testimonial on the Impact of
Dr. Natthapoj Vincent Trakulphadetkrai's Research-based Maths Through Stories initiative

By Suzanne Wood (Maths Lead, Bawtry Mayflower Primary School, UK)

I am coming towards the end of my teaching career, and for the past 28 years I have mostly been a maths leader, including the last ten years at Bawtry Mayflower Primary School in Doncaster. I have always believed in the value of cross-curricular work, but it was not until I attended Dr. Natthapoj Vincent Trakulphadetkrai's on-line training (organised by Doncaster Council's Reading, Writing, and Maths [RWM] team) that I discovered the Maths Through Stories approach. That was around November 2022. From then, I made it a priority to introduce the approach across the whole school, not just my own class. I was really keen for all children to experience it, and that is just how our school works: we do not want little pockets of good practice, we want everyone involved.

Our school has seven classes, so that is about 210 students who now get the chance to access this way of mathematics learning. I started by getting as many mathematical story picture books as I could, and we have now bought between thirty and forty titles for our library, many of which were recommended on the MathsThroughStories.org website. At first, I supported my colleagues with suggestions and links to stories that would fit the topics they were teaching. Over time, staff have become more confident at picking out the maths in the stories and linking it to their year group's curriculum themselves. These days, it is more of an organic process, with teachers sharing ideas in the corridor and helping each other find the right book or approach for their class.

We use the approach in a variety of ways. In Key Stage 1 and lower Key Stage 2, teachers often read a story picture book at the start of a new block of mathematics learning to provide context. With younger children, it is easier to link short picture books to the maths curriculum, while with older children, we tend to do more of the writing version, where they create their own short maths story picture books. For everyone, we have made the "finding the maths in a book" activity a regular feature, and for transition projects at the end of the year, all classes work from the same story picture book, hunting out maths in the narrative and sharing their findings.

A major reason for our commitment is that this approach is grounded in research. Our school places a high value on evidence-based practice. If it were not for Dr. Trakulphadetkrai's research underpinning the Maths Through Stories approach, we would not have adopted it so enthusiastically. It is fully cross-curricular, supports all areas of learning, and, with the support of Dr. Trakulphadetkrai's research and website resources, we can be confident that it is making a real difference.

The impact has been clear. I have noticed that the more we read maths stories, the easier it is for children to understand reasoning and problem-solving questions. They are better at unpicking what a question is really asking and finding the context within the problem, which is vital for success in SATs (Standard Assessment Tests) and other assessments. Children are also more confident in tackling unfamiliar problems, and their ability to tell the story of a maths question has improved. Although our school already had a positive culture around mathematics, this approach has added another layer, giving students more ways to enjoy and access the subject. I would say that students with special educational needs especially

benefit, as they often need the story element to help them understand concepts. The approach also works equally well for boys and girls; I have not seen any noticeable difference in how much they benefit.

Over the past two years, we have entered students' work into Dr. Trakulphadetkrai's international Young Mathematical Story Authors (YMSA) competition. The intention is always for whole-school involvement, and students' work is displayed in classrooms and corridors, building pride and a sense of achievement. Teachers have also taken up the idea of using previous winning and shortlisted YMSA entries as models for their own classes. The MathsThroughStories.org website has been invaluable for ideas, book recommendations, and lesson resources.

While the structure of our curriculum (which uses shorter topic blocks), sometimes makes it hard to build in regular mathematical story writing, we are always looking for ways to give students more opportunities, such as by setting aside time at the end of each half term or by using the story approach during transition weeks or as an end-of-topic investigation.

After nearly three decades in teaching, I do not think I have seen a maths teaching programme that has excited me as much as this one. It is the combination of reading, writing, and maths, supported by research and practical resources, that makes it so valuable. I hope Dr. Trakulphadetkrai's mathematical storytelling approach continues to grow and receives the recognition and support it deserves, and I remain determined to keep the work going and to share what we have learned with colleagues across Doncaster and beyond.

Suzanne Wood

Maths Lead
Bawtry Mayflower Primary School (UK)

13th May 2025

Testimonial on the Impact of
Dr. Natthapoj Vincent Trakulphadetkrai's Research-based Maths Through Stories initiative

By Rahul Raghavan (Head of PEP School V2, India)

I am the Head of PEP School V2, a private Montessori school in Bangalore, India. Our school is a little different from many others. We follow Montessori principles for children from pre-school up to Grade 7, grouping by ability instead of age. Our classrooms look more like cafés than traditional schools, and our teachers work across several subjects. Currently, our main campus has about 250 students, with three more young campuses also in Bangalore and Hyderabad.

Our philosophy has always focused on helping children learn by doing, creating, and sharing. When we first discovered Dr. Natthapoj Vincent Trakulphadetkrai's Young Mathematical Story Authors (YMSA) competition six years ago, we saw it as a natural fit. The idea of having children create their own maths story picture books made sense to us. It brought together maths, language, art, and collaboration. For our students, writing a maths story is not just about competing. It is about learning to explain ideas, express creativity, and help others understand maths in a new way.

Every year, when the YMSA competition is announced, we gather students together to create stories that explain the maths they are learning. These stories become part of our classroom libraries and are used as resources for teaching future students. The competition has become a focal point for teamwork and learning. The excitement of creating a product that sits on our shelf and can be used by other children is as important as the competition itself.

We do not force children to take part in YMSA. We offer it as a choice. Children who want to participate are supported to do so, and if they decide not to, that is respected. What we notice is that many who try it once often come back to do it again the next year. Our repetition rate is about 30 to 40 percent. This shows us that the project really does spark interest and that students value the process.

One of the things we appreciate most is that the YMSA competition has allowed us to formalise what was already happening in our classrooms. Montessori education is built on learning through stories and projects. For maths, we always tell stories to introduce new topics. For example, when we teach geometry, we might begin with a story about ancient Egypt and the overflow of the Nile. We also encourage children to write their own maths stories and even make their own textbooks, which they use to prepare for later exams.

Participation in the YMSA competition has become a school-wide event, but we also integrate maths storytelling throughout the year as part of our normal practice. Students are free to represent their maths learning through illustrations and stories whenever they feel inspired. For some, this means creating a one-page story or writing a caption for a mathematical image. For others, it means writing longer stories or even producing their own "textbooks" in Grade 6 or 7.

The approach works for everyone, but it works in different ways. Gifted students benefit from the challenge of simplifying complex ideas to teach others. Children who do not usually like maths become interested

when they are invited to write a story or create a comic. We have found that girls tend to enjoy long-form writing more, which means they are often more likely to participate, but the benefits are there for boys as well. The most important thing is that the project is inclusive. It allows children with different strengths to engage with maths in a way that makes sense to them.

Our school community is proud that this year, three of our students were either shortlisted or longlisted in the YMSA competition. Considering that there were around 750 entries worldwide in the 8 to 11 age category, this is a significant achievement for a single school. It shows that our approach not only engages students but also prepares them to perform well in mathematical competitions at an international level like Dr. Trakulphadetkrai's. At the same time, our goal is always to see the impact on students' understanding and confidence. The stories they create become tools for teaching, for peer learning, and for inspiring the next cohort.

There are challenges, of course. Our approach is always to focus on the process rather than the product, especially for younger children. We do not want to push them too hard on outcomes like spelling or neatness (as part of their mathematical story picture books). Instead, we encourage enjoyment and experimentation. As they grow older, we gradually introduce expectations about product quality and precision. The crowded curriculum and the freedom we give children also mean that not everyone chooses to write stories, and the numbers can vary. At our other campuses, the competition is just starting to take hold because the schools are still young. We are confident that as those campuses grow, they will adopt the same model, and more students will join in.

Knowing that this approach is based on research is very important to us. While we already believed in the value of storytelling, it is reassuring to know that Dr. Trakulphadetkrai's research shows students who create their own maths story picture books perform better in tests than those who only learn by traditional methods. This research gives us further conviction that we are on the right path, combining process, creativity, and mathematical thinking in a way that helps children succeed.

Dr. Trakulphadetkrai's Maths Through Stories initiative and its YMSA competition have become a key part of our school identity. They help us make maths more meaningful, inclusive, and enjoyable for all children. With time, we hope to share this approach with our other campuses and encourage more children to tell their own maths stories.

Rahul Raghavan

Head of School
PEP School V2 (India)
Operated by: Aamod Center of Liberal Arts

14th May 2025

Testimonial on the Impact of
Dr. Natthapoj Vincent Trakulphadetkrai's Research-based Maths Through Stories initiative

By Kim Rocha Pope (Maths Teacher, The Hall School, UK)

As a mathematics teacher and Year 6 form tutor at The Hall School, a boys' prep school in London, I have seen many educational initiatives come and go. However, few have offered the blend of creativity, engagement, and conceptual depth as the Maths Through Stories approach, particularly through our participation in Dr. Natthapj Vincent Trakulphadetkrai's Young Mathematical Story Authors (YMSA) competition.

Having tried other national STEM competitions with limited success due to their complexity and lack of student engagement, YMSA was a refreshing change: it was easy to understand, straightforward to administer, and, crucially, inspiring for students. Since adopting the YMSA competition in 2022, our school has engaged around 200 students in the creation of mathematical story picture books – submitting around 50 entries annually for four consecutive years. This sustained participation not only reflects the initiative's appeal, but also positions our school as one of the largest contributors to the competition worldwide. As a result, a significant proportion of our Year 5 cohort each year has now had direct, hands-on experience with this research-based approach to learning mathematics.

One of the most powerful aspects of this approach is the way it reunites mathematics with creativity and literacy. Traditionally, these domains can seem disconnected, particularly in the eyes of students who perceive themselves as either "maths people" or "creative types". The process of planning, writing, and illustrating mathematical story picture books bridges this divide. It empowers children to demonstrate their understanding not just through calculation but through narrative, artwork, and language.

The approach provides a unique platform for students to showcase abilities in mathematics, English, and art, often revealing hidden strengths. It is particularly valuable as a formative assessment tool, offering rich insights into a student's conceptual understanding, use of mathematical language, and ability to contextualise problems. For example, when reviewing students' stories, I can quickly spot misconceptions or areas where further support is needed – sometimes more readily than by marking a worksheet. This process also creates a valuable bank of student-authored resources, which can be shared and accessed by peers struggling with similar concepts.

Through YMSA, I have witnessed a marked shift in students' attitudes towards mathematics. The act of crafting a story around a mathematical concept encourages students to slow down and reflect, rather than rush to complete a worksheet for the sake of getting the "right answer". The collaborative planning, supported by well-designed resources, such as the A3-sized maths stories planning sheet created by Dr. Trakulphadetkrai, prompts students to think deeply about both the context and the mathematics involved.

A crucial benefit is the development of mathematical language. Many pupils – even those articulate in English – struggle to clearly explain mathematical ideas in writing. Creating a mathematical story requires them to "translate" their understanding into words and pictures, reinforcing comprehension. This not only supports their learning in mathematics but improves their overall communication skills, which is increasingly important given trends toward weaker comprehension skills in the digital age.

The competition has also proven invaluable for building students' confidence, particularly for those who may feel less capable in maths. For instance, I have seen shy or anxious students, initially hesitant and frequently making mistakes, become more open to discussing their thinking through the non-threatening, creative lens of storytelling. For one such pupil this year, the YMSA process changed his relationship with mathematics, helping him embrace mistakes as part of learning and reducing his anxiety. He is now more engaged, relaxed, and resilient in class, even accepting additional learning support more openly.

The positive effects of this approach extend beyond the classroom. One unexpected benefit has been its role in preparing students for their all-important secondary school (11+) interviews. The ability to speak confidently about a mathematical story they have created gives students a tangible "prop" to discuss, reducing interview nerves and providing a memorable talking point for interviewers. Several of our students have even left their mathematical story picture books with interviewers, who responded enthusiastically, often commenting on the impressive blend of creativity and mathematical thinking.

The stories produced are not simply discarded after the competition; they form a living resource, available on our school's SharePoint. Students regularly share and read each other's stories, especially during special occasions like Pi Day or when they need inspiration. Although our digital library is still in its early stages, there is clear potential for further integration into our mathematics curriculum.

Knowing that this approach is underpinned by robust research evidence gives it additional credibility. Dr. Trakulphadetkrai's large-scale intervention study, which found that students who create their own mathematical story picture books outperform peers learning via traditional methods, provide assurance that this is more than just a "fun" diversion. It is a practice that delivers real gains in conceptual understanding. As a teacher, this evidence base strengthens my resolve to make creative story-writing an enduring part of our mathematics provision.

Despite these challenges, the Maths Through Stories approach and the YMSA competition have brought deeper learning and joy to mathematics education at our school. They nurture not only mathematical understanding but also creativity, confidence, and communication. I am convinced that, with sustained support and gradual cultural change, such approaches can and should become an integral part of modern mathematics teaching – not as a replacement for rigour, but as a complement that inspires students to see maths as meaningful, creative, and accessible to all. As a teacher, this evidence-based approach strengthens my resolve to make creative story writing an enduring part of our mathematics provision, even in the face of challenges from a demanding curriculum and a focus on examination preparation for older students.

Kim Rocha Pope

Maths Teacher
The Hall School (UK)

13th May 2025

Testimonial on the Impact of
Dr. Natthapoj Vincent Trakulphadetkrai's Research-based Maths Through Stories initiative

By Matthew Allen (Head of Learning & Development, I Can School, Vietnam)

As Head of Learning & Development at I Can School, a bilingual school in Ho Chi Minh City, Vietnam, I am always seeking innovative, research-based ways to make learning more meaningful, engaging, and relevant for our students. Our school, which has grown from 75 to around 400 students (Grades 1–7) since 2020, delivers a curriculum rooted in both the Vietnamese National Curriculum and the Oxford International Curriculum, with a strong emphasis on inquiry-based, content-integrated English learning.

Our introduction to Dr. Natthapoj Vincent Trakulphadetkrai's Young Mathematical Story Authors (YMSA) competition came through Oxford University Press (the publisher of our school's adopted curriculum and who sponsors the competition's newest age category [4-7 years old]). From the outset, it struck me as a unique opportunity to nurture students' creativity – an attribute we value highly but often struggle to prioritise alongside literacy and mathematics. The competition offered an ideal vehicle for students to engage in creative thinking, develop their storytelling skills, and practise written English, all while deepening their mathematical understanding. In our very first year participating, we submitted 34 entries and were thrilled to see one shortlisted and another longlisted.

The most striking impact was on students' engagement. Many of our entrants were already reasonably strong in mathematics but did not always have positive attitudes toward the subject. The YMSA project changed that: for the first time, we saw students actively asking questions about maths, discussing concepts, and enthusiastically discussing their stories with teachers and peers. Students were genuinely invested in the process and, in many cases, took more ownership of their maths learning than ever before.

Importantly, the competition also coincided with a noticeable increase in maths attainment. At our school, all students take a standardised maths exam at the end of each semester. Comparing results, we saw the average school-wide maths score rise from 78 at the end of Term 1 (pre-YMSA) to 84.4 at the end of Term 2 (post-YMSA). The timing and the project's requirement that students reflect on and apply the year's maths learning suggest that creating maths story picture books was a significant - if not the sole - contributor to such improvement. The YMSA process prompted students into reviewing their maths learning, as they mind-mapped and discussed every unit and topic before settling on the concepts to embed in their stories – an exercise that deepened their conceptual understanding and likely boosted their exam performance.

For me, the power of storytelling lies in its universality and emotional resonance. Storytelling is a fundamental human trait that transcends language and culture, making it an ideal medium for building connections with difficult or abstract content such as mathematics. The freedom and creativity offered by the YMSA approach engaged our students on a deeper level than worksheets or rote memorisation ever could. They were empowered to choose their own mathematical concepts, craft meaningful contexts, and visualise mathematical ideas – skills that are central to both deep learning and the development of transferable thinking abilities.

Beyond mathematics, this work supported students' growth in English writing and communication, an especially important outcome in a bilingual school like ours where English proficiency is a major parental priority. The YMSA competition was a win-win: it provided an authentic reason to write, an opportunity to create, and a way to connect mathematical thinking to language and art.

Inspired by the success and positive response, we are now making plans to embed this research-based approach more widely within our curriculum. Starting next academic year, we consider requiring each student to create, at least, one mathematical story picture book per semester, guided by project-based learning principles and supported by teacher mentors. We are also exploring ways to integrate assessment of these projects into our formative feedback processes and to maximise their cross-curricular potential – linking maths, English, art, and ICT, and fostering greater collaboration among teachers.

As we move forward, my commitment is to make creative mathematical storytelling a hallmark of our school's approach to maths education, not as a one-off event or competition, but as a regular, valued practice that supports both attainment and holistic development. The research evidence behind Dr. Trakulphadetkrai's approach, including findings that students who create their own maths stories outperform those taught by traditional means, gives me confidence that this is the right direction for our school. My conviction of that persists even in the face of challenges that arise, for example, from English proficiency being a barrier for some students, the planning and buy-in needed from staff to integrate large, creative projects into an already crowded curriculum, and persuading parents who are used to traditional exam-focused education of the value of creative, narrative-based maths learning.

The YMSA competition and the underlying approach of student-created mathematical story picture books have had a transformative effect at I Can School, driving engagement, boosting attainment, and igniting a love of maths and learning. Our journey is just beginning, but I am determined to champion this approach across our school community, confident that it offers not only academic benefits, but also the development of creativity, confidence, and a deeper appreciation for the relevance of mathematics.

Matthew Allen

Head of Learning & Development
I Can School (Vietnam)

14th May 2025

Testimonial on the Impact of
Dr. Natthapoj Vincent Trakulphadetkrai's Research-based Maths Through Stories initiative

By Navya Reddy Dasari (Maths Lead, Silver Oaks International School, India)

I am the Maths Lead at Silver Oaks International School, Hyderabad campus. Our school is 24 years old and has 1,200 students. We have three campuses in Hyderabad and more in other states. Our school uses the IB curriculum until Grade 6 and CBSE [Central Board of Secondary Education] for Grades 7–10. I teach maths from Grade 6 to Grade 10, and I have nine years' experience as a maths teacher.

I first heard about the Young Mathematical Story Authors (YMSA) competition in 2019. At first, I did not know much about it, but I found it was about students writing stories using maths. This was something new for me and my students. Usually, maths means only solving sums and numbers, but this competition made students think differently. Last year and this year, I saw more students enjoying maths by creating their own short mathematical story picture books.

Our school has joined the competition since 2019, and we have submitted nearly 200 entries since then. The students who take part are from different grades, and some are good at maths, some are more interested in reading or art. The best part is this competition gives all students a chance to show their creativity. They write stories, make drawings, and use maths concepts together. I feel proud to see my students feeling happy after completing their maths stories.

I see that creating maths story picture books helps students become more confident. Before, some students were quiet or not sure in maths class. After doing this competition, they started to enjoy maths more. They like using art, storytelling, and teamwork, not just solving sums. Some students who found normal word problems difficult were able to explain maths ideas better with stories and pictures. They can connect maths to real-life situations, and that makes them understand the concept in a better way.

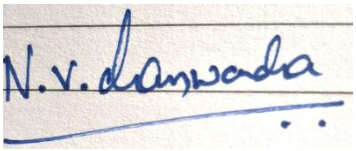
From my experience, the competition helps students develop many skills, not just in maths. They improve their reading, logical thinking, and creativity. When students write maths stories, they have to think about how to use the concept, how to explain it, and how to connect it to real life. It is not only about getting right answers, but also about thinking and solving in new ways.

In our regular maths lessons, students now get case-based questions and word problems. These are similar to making stories. I see some students who like reading books also like writing these maths stories. I believe it is a good idea to include more maths storytelling in our regular Maths lessons, but sometimes parents in India prefer more focus on numbers and sums, especially for board exams. Maybe about half of parents like the story approach, and half are not sure. But I feel that with new fields like data science and visual arts, story writing in maths is also important.

Knowing Dr. Trakulphadetkrai's research behind this approach – that students who create their own maths story picture books do better in maths tests – I am even more motivated to promote this idea in my school. As maths leader, I help plan maths lessons and give suggestions to my colleagues. Next year, I want to

suggest that maths story writing be given as a holiday task, maybe for summer or Dusshera vacation, so more students can try it. I will give ideas to my principal and other maths teachers in my school and other campuses.

In summary, the YMSA competition and maths story picture books have made maths more meaningful and joyful for many students in our school. It opens up a new way of learning and gives students a chance to be creative, confident, and proud. I hope we will continue to send many more stories every year and that more teachers will try this approach in their classrooms.



Navya Reddy Dasari

Maths Lead
Silver Oaks International School (India)

Twickenham Preparatory School
Nurturing, Inspiring, Achieving Success

6th May 2025

Testimonial on the Impact of
Dr. Natthapoj Vincent Trakulphadetkrai's Research-based Maths Through Stories initiative

By Rachel Clough (Head of Mathematics, Twickenham Prep School, UK)

As Head of Mathematics at Twickenham Prep, I have always been interested in teaching methods that genuinely help children understand mathematics and enjoy the subject. Our school is an independent prep school for boys and girls from Reception to Year 8, with two classes per year group. My teaching background is in primary education, with a Masters in Leading Innovation and Change (with a focus on Teaching for Mastery in Mathematics), and a previous career as a market researcher, so I am always on the lookout for research-informed approaches.

I first discovered Dr. Natthapoj Vincent Trakulphadetkrai's research-based Maths Through Stories approach at a training workshop in February 2024 that Dr. Trakulphadetkrai was invited by the Independent Association of Prep Schools (IAPS) to deliver to teachers within the IAPS network, and later at a virtual training workshop in November 2024 that he was invited by the Learning Skills Trust to run for teachers within their network. Hearing from other teachers who had used maths stories in their schools made me keen to try it with our pupils. After organising an INSET training with Dr. Trakulphadetkrai for all our staff at Twickenham Prep in February 2025, we set up an internal maths story writing competition modelled on his international Young Mathematical Story Authors (YMSA) competition. This was open to all year groups, and the most enthusiastic responses came from Year 2 and Year 8, whose teachers were particularly engaged. Altogether over 50 students participated in our first internal maths story writing competition.

Alongside this, I launched an after-school Mastery Stories Club for a term, aimed at any pupil from Year 3 to Year 6 who wanted to create their own maths story. About 12 children joined, with a wide range of ages and abilities, including some with special educational needs. I used resources from the MathsThroughStories.org website, such as the A3 story planning board, to help them plan, storyboard, and create their books. Feedback from students was very positive. I had two Year 5 boys who were strong mathematicians but not keen on English, and they ended up loving the club. One even told his mum it was his favourite club. The process of planning and creating a story gave students excitement and a real sense of ownership.

Concerning the use of mathematical story picture books written by professional authors, teachers who took part found that the approach was easiest to implement when there was a clear mathematical link in the story. For example, Year 2 worked on division with grouping using a mathematical story picture book about a fairground ride, while Year 8 focused on geometry and Pythagoras, using stories about ropes and triangles. Both teachers and students found it helpful to start with an existing book, then adapt or extend the ideas to make them their own. The main focus for us was on deepening mathematical understanding rather than just storytelling, and we saw that time spent working on the stories was additional time spent thinking about the concepts in detail.

After the training and first round of story writing, we used the MathsThroughStories.org website to help build up the maths story picture book section in both our libraries, buying one copy of about 15 to 20

recommended books per library. The website's database of lesson plans and book suggestions by age and topic made it much easier for staff to select suitable resources and plan lessons or competitions. Keen mathematicians now regularly ask for maths books in the library, and teachers are more likely to make use of story-based resources when planning.

Although it is too early to say definitively whether the approach has led to a measurable improvement in attainment, I am convinced it leads to deeper conceptual understanding. For example, after working on division stories, Year 2 pupils could speak much more confidently about grouping and remainders, while Year 8 students could discuss Pythagoras and other topics in a variety of real-world contexts. Having students write their own stories encourages them to apply their mathematical knowledge in practical, meaningful situations. This real-life application makes the concepts much more tangible, and students retain the ideas better.

Implementing the approach more widely across the school remains a work in progress. It is a tool in the teaching toolbox rather than a core element of every lesson, largely because of the pressures of a packed curriculum. Teachers value having ready-made resources and lesson plans but need gentle reminders to make space for story-based activities. However, with clear links to both the maths curriculum and mastery teaching, I am hopeful that the school will continue to expand its use.

I strongly believe that the approach is inclusive. Reluctant mathematicians have been particularly engaged, especially with the comic book format, and reluctant writers have been encouraged to write more when they can combine their favourite maths topics with storytelling. The approach supports a wide range of learners and provides another route for pupils to express and deepen their understanding.

A key reason I am confident in using and promoting the Maths Through Stories approach is that it is grounded in robust research. Dr. Trakulphadetkrai's study has shown that pupils who create their own maths story picture books develop a deeper understanding of concepts compared to traditional teaching methods. I only use and encourage pedagogies that are supported by sound research evidence and can see how this approach fits with other effective practices, such as mastery and the use of concrete, pictorial, abstract representations in mathematics.

In summary, Dr. Trakulphadetkrai's research-based Maths Through Stories initiative has enriched our maths teaching, increased pupil engagement, supported deeper understanding, and encouraged both creative and mathematical thinking. With ongoing support and clear resources, I am confident it can have even more impact across the school in years to come.

Rachel Clough

Head of Mathematics
Twickenham Prep School (UK)

NEWLANDS
School, Dubai

9th May 2025

Testimonial on the Impact of
Dr. Natthapoj Vincent Trakulphadetkrai's Research-based Maths Through Stories initiative

By Reema Burhan (Head of Secondary Mathematics, Newlands School, United Arab Emirates)

I am the Head of Secondary Mathematics at Newlands School in Dubai, where I teach around 100 students across Year 8 to Year 11. Our school follows the British curriculum, with students from pre-school up to Year 12, and growing each year. I have always loved both maths and stories, and when I discovered Dr. Natthapoj Vincent Trakulphhadetkrai's Young Mathematical Story Authors (YMSA) competition through a colleague, I immediately saw its potential for my students.

What drew me in was the combination of creativity and mathematics. I read stories written by students from previous years on the competition's website, and I was fascinated by how mathematical concepts could be brought to life through storytelling and pictures. I introduced the idea to my students, and many were excited to take part.

One of my students last year, a Year 8 girl who was not a high-achieving maths student, was shortlisted in the competition. She had been struggling to understand some concepts but was inspired to participate when she saw that she could choose her own mathematical topic. She picked enlargement, a topic that interested her, and through the process of creating her story and illustrations, her understanding became much clearer. She became totally engaged, and her attitude toward maths improved. She now enjoys the subject much more and is more confident in her learning.

From my experience, giving students the chance to create their own short mathematical story picture books increases their engagement and enjoyment in mathematics. When students are interested, they spend more time thinking about maths, and they go deeper into the subject. I saw that all the students who participated became more interested, and their attainment increased. They were able to explain concepts better, and their visuals and writing made the ideas clearer in their own minds. For me, as a teacher, this was very rewarding to observe.

I also noticed that integrating story writing with maths supports a wide range of students. It helps not only the mathematically high-achieving students but also those who are more creative or better at writing. I have seen that boys and girls both get involved, and the key is to choose topics or story settings that appeal to their interests. For students with special educational needs, I believe the visual and narrative approach can make maths more accessible. I plan to share this idea with our Inclusion department so that more students can benefit.

The competition has influenced my thinking and teaching practices, even though making story creation a regular part of my maths teaching is still a challenge because of time pressures and a large syllabus to cover. For Year 8, for example, we must cover 15 or 16 topics over ten months, and that does not include time set aside for assessments at the end of each term. This makes it difficult to find space for students to create their own stories regularly.

However, I have started to think differently about how to make it work. After discussing with Dr. Trakulphadetkrai, I now plan to use the end of term, after assessments, as an opportunity for students to create their own maths stories. This is a time when students are not ready to start new topics, so they can focus on consolidating their learning in a fun and meaningful way. I hope this will help increase the number of entries for the competition and, more importantly, allow more students to enjoy and benefit from the approach.

I have also realised that collecting the best story picture books created by students and passing them on to the next year group can inspire others and provide examples for their own work. Over time, we can build a growing collection of high-quality mini story picture books covering different topics. This gives students a sense of ownership and pride, knowing their work might help the next cohort.

Knowing that the competition and the approach are based on research makes me even more motivated to use it. Dr. Trakulphadetkrai's study, which shows that students who learn maths through story reading and writing perform better in understanding mathematical concepts than those taught in traditional ways, gives me confidence that I am using an evidence-based method. When I share this with colleagues and parents, I can point to the research to show that it is not just a fun activity but one that has proven benefits for students' learning and attainment.

The competition is also inclusive and accessible. Because it is free, all interested students can participate without worrying about cost. Parents have been supportive and inspired by their children's involvement.

To sum up, Dr. Trakulphadetkrai's Maths Through Stories initiative and its YMSA competition have brought new excitement and deeper learning to our maths teaching. More students are interested, more confident, and able to explain mathematical concepts with clarity and creativity. There are challenges with time and curriculum, but with some adjustments and continued support, I believe this approach will have an even greater impact in the years to come.

Reema Burhan

Head of Secondary Mathematics
Newlands School (United Arab Emirates)

BUCKLANDS BEACH
INTERMEDIATE SCHOOL

12th May 2025

Testimonial on the Impact of
Dr. Natthapoj Vincent Trakulphadetkrai's Research-based Maths Through Stories initiative

By Sarah Beckhaus (Year 8 teacher, Bucklands Beach Intermediate, New Zealand)

I am a Year 8 teacher at Bucklands Beach Intermediate, a large intermediate school (a middle school) in Auckland, New Zealand, with nearly 1,000 students split between Year 7 and Year 8. Our school follows the International Baccalaureate curriculum, and my class has a wide range of mathematical abilities. I have been teaching here for five years, after a career as a chartered accountant.

Our school is known for its strong focus on mathematics and high results, and we run Mathex extension classes for the most able students. However, I have always felt that engagement, confidence, and the ability to apply maths to real life are just as important as test scores. That is why I was drawn to Dr. Trakulphadetkrai's Maths Through Stories initiative and its Young Mathematical Story Authors (YMSA) competition. I wanted to give my students an authentic opportunity to showcase their creativity and apply their learning beyond the classroom. Competitions like YMSA motivate students to challenge themselves, build confidence, and develop pride in sharing their ideas.

Over the past four years, I have offered my students the opportunity to take part in the competition. I typically invite those who are ready to apply their knowledge independently, as the tight time frame and start of the New Zealand school year make it difficult to include everyone. Even so, it is exciting that one of my students was longlisted this year, with nearly 500 entries in the 12–16 age group. We are a maths-focused school, but it is the quality of participation and the growth in student understanding that matters most to me.

YMSA fits well with our inquiry-based approach, and I use maths stories in my teaching throughout the year – not just for the competition. For example, I try to use a maths story as a provocation or hook at the start of every new topic. Whether it is statistics, number, measurement, or algebra, I find stories help break down barriers, especially for students who might be anxious about maths. My planning includes four or five lessons per year where students create their own maths stories. I have also mentored beginning teachers, sharing my planning and ideas for integrating storytelling, and we discuss how to embed the approach across year groups.

From my experience, creating maths stories increases engagement and enjoyment, especially for students who might otherwise struggle. Students say they like applying their maths knowledge through their imagination and find it fun to express their learning to parents and classmates. The creative format builds confidence and helps them see that maths can be enjoyable and relevant to real life. I believe the biggest change is that students see how maths is applied outside of the classroom. They are more confident in their skills, and more willing to share their thinking. For some, the act of creating a story helps them realise where they need more help; for others, it allows them to reach that deeper or even transfer level of learning where they can apply and communicate their knowledge in new contexts.

I have also noticed particular benefits for neurodiverse students, such as those with ADHD, because the process is flexible and allows them to work in chunks. Students can focus on developing the maths, working

on their story, or illustrating, depending on what suits them at the time. The approach lets different talents shine and gives every learner a way in.

I use the stories as formative assessment tools. For example, I might have students storyboard a concept like angles and lines, and ask them to include specific rules in their narrative. This gives me immediate feedback on who needs more support and who is ready to move on. The approach is not just about writing; it is about thinking deeply and explaining ideas clearly.

The main challenge is time. Our school year starts in February, and there are many interruptions with camps, testing, and short weeks. It is hard to fit the competition in for all students, especially at the start of the year. However, I want to stress that this logistical challenge is specific to organising participation in the YMSA competition itself. It is not really a barrier to adopting the storytelling approach as part of our regular mathematics teaching.

Knowing that the YMSA competition and the underlying approach are grounded in research is a huge motivator. I was very pleased to learn that Dr. Trakulphadetkrai's study with over 1,000 students found that those who create maths stories or read them perform significantly better than those who learn in traditional ways. It reassures me that the effort I put into this approach is worthwhile, and it makes it easier to explain to colleagues and parents why storytelling belongs in maths education.

In summary, Dr. Trakulphadetkrai's research-based Maths Through Stories initiative and its YMSA competition have helped my students become more engaged, confident, and able to communicate their mathematical thinking in creative ways. While there are time pressures and challenges in reaching every student, I plan to continue using and sharing this approach, and I encourage other teachers to give it a try. The benefits for student learning and engagement are clear, and I believe storytelling in maths can make a lasting impact.

Sarah Beckhaus

Year 8 teacher
Bucklands Beach Intermediate (New Zealand)

OBEROI
INTERNATIONAL SCHOOL
FREEDOM TO THINK. EMPOWER TO BE...

12th May 2025

Testimonial on the Impact of
Dr. Natthapoj Vincent Trakulphadetkrai's Research-based Maths Through Stories initiative

By Shruti Kulkarni (Maths Teacher, Oberoi International School, India)

I am the Associate Middle Years Programme (MYP) Coordinator and a maths teacher at Oberoi International School, Mumbai - an International Baccalaureate (IB) World School that runs from pre-school to Grade 12 across two campuses. This is my first year as a co-ordinator, but I have been a maths teacher for over eight years, mainly teaching Grade 6 and working closely with colleagues in the Middle Years Programme. Our school is large, with each campus aiming for around 1,000 students, and class sizes are usually capped at 20 students.

My journey with Dr. Natthapoj Vincent Trakulphadetkrai's Young Mathematical Story Authors (YMSA) competition started several years ago, even before I joined Oberoi. I first discovered the competition on Twitter when I was teaching at a different school, and since then I have consistently promoted it wherever I teach. When I joined Oberoi, I encouraged students to participate. In 2021, we submitted only six entries from my campus. However, each year after that, the number grew to around 50 entries each year. Having so many students (around 200 students in total now) take part means a lot of children get the opportunity to express their mathematical thinking creatively and gain recognition for it.

For me, the main value of the maths story approach is how it blends creativity and mathematics. Students work on their short mathematical story picture books that help them develop mathematical reasoning, visual thinking, and the ability to communicate their ideas in real world contexts. I notice that younger students especially get very excited about creating mathematical stories. They enjoy showing what is going on in their minds and are more explicit and creative in their explanations. We have encouraged participation from both primary and middle years, so our competition entries come from Grades 4 through 10.

Knowing that the competition and the underlying approach are based in Dr. Trakulphadetkrai's research matters a lot to me. I regularly look for educational research to inform my practice, and it is reassuring to know that the maths story approach helps students with conceptual understanding and confidence. For students who say they are not "maths people", or who struggle with the subject, being able to express their thinking in creative ways has made a real difference. Even small steps, like seeing a student who previously lacked confidence now sharing their work with pride, are enough to keep me motivated.

This year, our collaboration went even further, as the second campus also joined in and more teachers became interested. The YMSA competition is now something we mention in our school newsletter every year. I write articles to encourage participation and keep families and teachers informed about the opportunity. Once students are on board, the work is entirely theirs, with some support from teachers or parents when needed, but the creative ideas and execution come from the children. Student participation in the competition is voluntary. We have found that explaining the purpose and benefits helps, and the satisfaction students feel when they see their finished story is usually worth the effort.

From my observations, participation in the competition increases students' confidence and enjoyment in mathematics. The MYP curriculum at our school does not only focus on getting the right answer. It also values reasoning, visualisation, and the ability to write coherent explanations for real world problems. Creating mathematical story picture books offers students a creative angle that helps to reduce pressure and makes engagement with the subject more enjoyable. Many students who take part are able to express their understanding better and show a real willingness to explore mathematical ideas in new ways.

It has also been rewarding to see some students develop as strong communicators. For example, two girls from my class, Navya and Samara, have been particularly articulate in expressing their mathematical thinking, using feedback to refine their work, and showing confidence in presenting their stories. The stories they create do not just sit on a shelf; they are shared within the school community, inspiring others to take part.

Bringing this approach to younger years has required some collaboration. The primary years teachers and librarians were already using mathematical picture books, such as those by Stuart Murphy, especially in kindergarten and lower grades. When we opened up the competition to Grades 4 and 5, participation increased, and the use of maths stories in lessons became more visible. For younger students, maths stories might be used as part of a themed week or for book events, while in middle years, we tend to use stories as provocations, reflections, or occasionally as part of interdisciplinary projects.

While the annual competition is a highlight, I see great potential for using the maths story approach more regularly. At the moment, it is not a consistent part of everyday teaching for most maths teachers, especially in the middle years. In my own practice, I sometimes ask students to use a storytelling approach for a reflection or as a way to present their understanding at the end of a unit. Some of my colleagues are interested in trying out more interdisciplinary projects, blending maths with languages or the arts. However, bringing this approach into regular teaching across the school still needs more time and support. For example, in the middle years, maths teaching is often focused on covering content, and teachers may not always feel they have the flexibility or experience to adopt a storytelling approach.

Dr. Trakulphadetkrai's YMSA competition has become part of our school culture, with growing numbers of students each year taking part and celebrating their learning. There is still more work to do to embed this approach as a regular part of maths teaching, but I am grateful for the opportunity and excited to see where it leads next.

Shruti Kulkarni

Assistant MYP Coordinator
Maths Teacher
Oberoi International School (India)

8th May 2025

Testimonial on the Impact of
Dr. Natthapoj Vincent Trakulphadetkrai's Research-based Maths Through Stories initiative

By Defi Kamilia (Maths Teacher, SMPN 6 Mataram School, Indonesia)

I am currently a mathematics teacher at SMPN 6 Mataram, a government secondary school located in Lombok, Indonesia. Our school serves over 1,230 students across 33 classes spanning Grades 7 to 9. Since beginning my teaching career in 2020, I have primarily taught Grades 7 and 8 mathematics, though recently I have also undertaken teaching responsibilities for Grade 9 students, particularly in preparation for Mathematics Olympiads.

I first encountered Dr. Natthapoj Vincent Trakulphadetkrai's MathsThroughStories.org initiative through the WhatsApp group associated with a professional development course provided by the Southeast Asian Ministers of Education Organization's (SEAMEO) Regional Centre for Quality Improvement of Teachers and Education Personnel (QITEP) in Mathematics. While the two-week international CPD course itself did not specifically train us in the mathematical storytelling approach, details of Dr. Trakulphadetkrai's Young Mathematical Story Authors (YMSA) competition were shared within this group (comprising approximately 30 teachers from across Southeast Asia), prompting my initial interest and subsequent exploration of this innovative pedagogical practice.

The prospect of using mathematical storytelling appeals to me because many of my students expressed significant anxiety and negative attitudes towards mathematics. Traditionally, students perceived mathematics as difficult, abstract, and intimidating. When I introduced the Young Mathematical Story Authors (YMSA) competition to my students, particularly those in our school's Mathematics Olympiad extracurricular club (approximately 50 students), I noticed an immediate shift in their engagement and enthusiasm. Students quickly recognised that mathematics could be engaging and accessible when approached through illustrated stories that appealed to their interests.

As this was our first year participating in the YMSA competition, students initially reviewed past winning and shortlisted entries. Students undertook significant independent work at home, but also utilised dedicated school time in our computer lab for illustrating their mathematical stories. Throughout this process, it became clear that students' depth of mathematical understanding was significantly enhanced, driven by their need to clearly articulate mathematical concepts within engaging, coherent stories.

The competition's impact on students' mathematical engagement and conceptual understanding was significant. Observing their dedication, I strongly agree that participation in the YMSA competition notably increased their enthusiasm and active engagement with mathematics. My students began to research deeper into their chosen mathematical topics, enhancing their overall grasp of mathematical principles and applications. This approach also helped students connect mathematical concepts to real-world scenarios, thereby aligning closely with the principles of Realistic Mathematics Education (RME), an educational framework widely taught in teacher training programmes in Indonesia.

Creating mathematical story picture books also significantly changed my students' attitudes towards mathematics, making the subject enjoyable and relatable. Through storytelling, students could creatively express mathematical ideas, combining logical thinking with imaginative scenarios. Students, including

those typically disengaged or anxious about mathematics, experienced increased confidence, fundamentally reshaping their perceptions of mathematics as an enjoyable and accessible subject.

In terms of teaching practice, the Maths Through Stories approach has considerably influenced my pedagogical strategies. Although I initially employed mathematical storytelling with my Mathematics Olympiad students, witnessing their improved enthusiasm and deeper mathematical understanding convinced me to integrate this method into regular classroom teaching from the next academic year. My intention is to embed the creation of mathematical story picture books into my lesson plans strategically, providing students periodic opportunities to consolidate their learning creatively and effectively. The flexibility and scalability of the approach, as demonstrated by Dr. Trakulphadetkrai's research, reassure me that integrating storytelling into regular curriculum activities is both practical and beneficial.

Importantly, knowing that this pedagogical approach is grounded in rigorous educational research conducted by Dr. Trakulphadetkrai has significantly increased my confidence in adopting and advocating this method. Research evidence demonstrating clear improvements in students' conceptual understanding when mathematics is taught through storytelling provides crucial validation for introducing this innovative approach at our school. As educators, reliance on credible research is fundamental, and Dr. Trakulphadetkrai's research provides the robust evidence needed to confidently present this approach to colleagues and school leadership.

My experience with the YMSA competition has motivated me to extend the benefits of mathematical storytelling beyond the approximately 50 Mathematics Olympiad students I support. For example, one of my colleagues showed interest upon observing my students' engagement during the competition preparation. I plan to introduce the Maths Through Stories approach to the remaining six mathematics teachers at our school, further embedding this innovative method across our institution, potentially impacting hundreds more students annually. Moreover, I intend to disseminate this educational innovation more broadly through regional teacher training webinars, typically attended by 60-80 teachers monthly. Additionally, I plan to showcase this approach at the regional Innovation of Education competition for teachers, highlighting its efficacy in transforming mathematics teaching into an engaging, enjoyable, and highly effective educational practice.

Reflecting on my journey with the Maths Through Stories initiative, I firmly believe in its transformative potential. This innovative, research-based approach has substantially improved my students' mathematical understanding, confidence, and enthusiasm. Its effectiveness in breaking down barriers to learning and engaging students creatively and meaningfully in mathematics is unparalleled. The ongoing support, resources, and validation provided by Dr. Trakulphadetkrai and his MathsThroughStories.org website continue to empower educators like myself, enabling us to transform mathematics education in our communities positively.

Defi Kamilia

Maths Teacher
SMPN 6 Mataram School (Indonesia)

WINDHILL PRIMARY SCHOOL

1st May 2025

Testimonial on the Impact of
Dr. Natthapoj Vincent Trakulphadetkrai's Research-based Maths Through Stories initiative

Sean McDonald (Maths Lead and Teacher, Windhill Primary School, Doncaster, UK)

I am currently a Maths Lead at Windhill Primary School in Doncaster, where I have taught for nine years, including five years leading mathematics education across the school.

I first encountered Dr. Natthapoj Vincent Trakulphadetkrai's MathsThroughStories.org initiative and the mathematical storytelling pedagogical approach it promotes during a virtual training workshop organised by Doncaster Council in 2022. Knowing that the Maths Through Stories approach is grounded in robust research has been absolutely essential. In my role as Maths Lead, I am responsible for ensuring that every intervention we adopt is evidence-informed. No matter how exciting an initiative might seem, without a credible research base, I could not justify implementing it with our pupils. Dr. Trakulphadetkrai's research has given us that assurance.

The Maths Through Stories approach has significantly shaped my own teaching practice as well as transforming our mathematics curriculum across the school, impacting over 400 students to date. The approach has become so embedded in our school that I would be hard-pressed to find a single pupil who has not been positively influenced by it in some way. Our 20 teachers and approximately nine support staff now routinely integrate mathematical storytelling into their teaching. This comprehensive school-wide adoption is further supported by our team of Maths Ambassadors – six enthusiastic Key Stage 2 pupils selected to promote maths storytelling across year groups. These Ambassadors actively recommend mathematical story picture books tailored to younger children's interests, sparking excitement and increased engagement throughout the school.

The impact on students' conceptual understanding and attitudes towards mathematics has been significant. Children now regularly use mathematical language more confidently and fluently, with marked improvements particularly evident among groups previously less engaged with mathematics. Girls at our school, who historically underperformed compared to boys, have notably benefited from stories promoting positive mathematical identities, improving their engagement and confidence. Furthermore, students lacking confidence in maths noticeably improved both their attainment and enthusiasm for the subject. For example, one Year 5 pupil – who began the year working at a Year 3 level and held a deeply negative view of maths – experienced a dramatic turnaround after reading mathematical stories (including a story I authored myself, which I will touch on later in this testimonial). That simple act of reading a relatable, empowering story about maths helped him reframe his perception of his ability and see himself as a successful learner, and he is now working at the expected standard. He even comes into class excited for maths and is genuinely disappointed if it is delayed.

Inspired by Dr. Trakulphadetkrai's training, I successfully applied for funding from the London Mathematical Society (£500) and additional support through the Multiply Funding scheme. This allowed our school to establish a dedicated Maths Through Stories section within our school library, providing students and families typically from socioeconomically disadvantaged backgrounds regular access to high-quality mathematical story picture books. This resource quickly became integral, not only supporting mathematics learning but also fostering positive attitudes and enthusiasm for mathematics among our students and their

WINDHILL PRIMARY SCHOOL

families. In fact, during the virtual conversation with Dr. Trakulphadetkrai on which this testimonial is based, I happened to notice through the window of my office that a group of Year 2 pupils, during their free reading time, had chosen to read maths story picture books aloud to each other. It was a spontaneous and unscripted moment, but it captured perfectly how this approach has become embedded in our school culture. Separately, I ran family-focused workshops that engaged around 20 local families, enhancing parents' and carers' involvement in supporting their children's maths learning at home. Through distributing story picture books funded by our grants, we helped overcome economic barriers, further extending the reach of this innovative approach.

My enthusiasm, initially sparked by Dr. Trakulphadetkrai's research-based training, has led me to actively promote Maths Through Stories in the wider professional community. I have led professional development workshops for approximately 54 Key Stages 1 and 2 teachers across Doncaster and Rotherham, significantly extending the initiative's regional impact. Furthermore, inspired by Dr. Trakulphadetkrai's research-based international Young Mathematical Story Authors (YMSA) competition, Doncaster Local Authority, in collaboration with the Doncaster branch of the National Literacy Trust, established its own regional mathematical story writing competition. Students at Windhill Primary School (and other schools in the region) actively participated in this competition, further cementing the impact of Dr. Trakulphadetkrai's work at the regional level.

Inspired personally by Dr. Trakulphadetkrai's approach, I authored a mathematical story book, *'The Rise of the Shape Sorcerer'*, aiming to further engage and inspire children's love of mathematics, and a sequel is already in the works. I have also agreed to Dr. Trakulphadetkrai's request to provide peer-to-peer support to a fellow teacher who is considering writing his own mathematical story picture book.

Of course, there have been challenges, such as curriculum time constraints and initial scepticism from some colleagues. However, the free practical, research-informed support from Dr. Trakulphadetkrai's MathsThroughStories.org website effectively addressed these barriers. The website continues to be my go-to resource. It is one of only seven tabs permanently bookmarked on my browser. Its world's largest database of recommendations for mathematical stories, story-based Maths lesson ideas, and example videos have saved me and my colleagues countless hours. I have seen other teachers physically relax when they realise that everything they need is there. The time-saving element cannot be overstated in an already stretched profession – a key point highlighted in Dr. Trakulphadetkrai's earlier study exploring barriers to teachers' implementation of the approach.

Reflecting on the journey so far, I firmly believe Dr. Trakulphadetkrai's Maths Through Stories initiative has had a transformative impact on me, our students, our teaching staff, our wider school community including parents, and schools across the region. The ongoing ripple effect, originating from my attendance at that initial training workshop, continues to grow, positively influencing mathematics education far beyond our school gates.

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