

## Message From the TODOS President December 2022

It is near the winter solstice as I write this, December 21, the longest night of the year for those who live in the northern hemisphere. The further you live north of the equator the less daylight you might have during the day time hours. Right now we have less than 8 hours of daylight in any one day. June 21 is the day with the most number of daylight hours, where we get close to 22 hours of daylight. I grew up trying to make sense of this cycle of mother earth.

I have two vivid memories about childhood wonder:

Why was it not a similar structure on the two dates; that is - if there was about 22 hours of daylight on June 21 then why wasn't there 22 hours of darkness on December 21?

Why the holiday my family celebrated as Christmas was on December 25 and not on December 22? In my mind Christmas should've been on December 22. If Santa Claus was needing to deliver gifts to ALL of the children around the whole world then wouldn't Santa Claus need the most number of darkness hours (i.e. December 21)?

I don't have a vivid memory of receiving satisfactory answers to my childhood wonders. But, these two wonders lingered as I continued to learn. And, I eventually became aware of the existence of different calendars.

The way I understand it now is that all calendars were a way that humans kept track of, and made sense of the rhythm of mother earth; different peoples in different places around the world observed the cycles in relation to the sun, the moon, and stars. Different calendars emerged because of the different places and the different practices of 'keeping track.'

As I think about mathematics, teaching mathematics, humans being mathematical and humans keeping track I wonder, how did 'we' as human beings, come to develop a 'system' of mathematics teaching and learning practices that lost sight of the emergence of mathematical notation - or the emergence of 'keeping track?' As systems of standard practices have emerged I propose that there's been a loss of the notion that mathematical notation is a way of 'keeping track'.

In my teaching I've learned to ask not only students in my classes, but myself, what does the notation mean to you? Sometimes I ask 'what picture do you have as you write this expression?' When I ask this of my students, it helps me to understand my students' thinking. When they ask me the question it gives me insight into my own thinking.

"Why do you read an equation the way you do?" was a question posed to me by a preservice teacher. It stopped me in my tracks. I'd never thought about it before. I needed to ask for clarity, i.e. how did they notice I was reading an equation. Apparently I always said out loud "is equal to" when I came to the equal sign. This preservice teacher noticed that I read an equation differently than they read one. I shared my thinking and then asked my class to share how they read an equation and their thinking. Over the time of our discussion we

explored different metaphors that were used in the class and whether or not those metaphors hold true throughout the K - 12 content. We also talked about what this meant for teaching and how it is that while teachers might teach a particular practice that students may 'learn' a different one because of the experiences students have had.

As we approach a New Year in the Gregorian calendar I invite you to reflect on experiences you've had and the ways that they've shaped and continue to shape your practice as a mathematics educator. I think back to the two childhood memories I have of 'being mathematical' and trying to 'keep track' in relation to my lived experiences. I think about the preservice teachers asking me what could've been interpreted as a 'seemingly simple question' and yet our exploration of it became so beautifully complex - the same way that coming to diverse calendars is so beautifully complex.

I also invite you to engage in exploring beautiful complexity by participating in TODOS Live Sessions, reading *TEEM*, and planning to attend the 2023 TODOS Conference, June 21 - 23 in Albuquerque NM. TODOS is a community where we celebrate the beautiful complexity of being human and being mathematical.

I believe we need to advocate for complexity in order for ALL to succeed in learning mathematics; the standardization of practices suggests that we don't honour the complexity of the humans learning and living.

With respect and gratitude,

Florence Glanfield, President  
TODOS: Mathematics for ALL