

## PRESIDENT'S MESSAGE

Hello Mathematics Community,

These unique times have opened the doors of possibility for WMC. Reimagining the Wisconsin Teachers of Mathematics Journal to an all-digital format is one door we did not hesitate to leap through. Moving forward, the journal will be completely online. To reiterate the words of journal editors Matt Chedister and Doug Burge, this new format will allow for more access to the journal, the inclusion of live links to resources, an opportunity to lift up the work of students, and the addition of video segments as a window into the world of mathematics teaching. We are excited about this change and we hope you are too!

NCTM's Catalyzing Change Series has four key recommendations woven throughout the series and are meant to spark the critical conversations around changes that must take place across the PK - 12 system of mathematics teaching and learning (Catalyzing Change, 2021). Below is a list of these key recommendations:

- Broaden the Purposes of Learning Mathematics
- Create Equitable Structures in Mathematics
- Implement Equitable Mathematics Instruction
- Develop Deep Mathematical Understanding

Connections can be made between these recommendations and the content of this journal, and the following are several ways in which I believe they are linked together.

### **Broaden the Purposes of Learning Mathematics**

Understanding and critiquing the world through mathematics is a cross-cutting concept that can be found within broadening the purpose of learning mathematics. By engaging students in meaningful contexts students can make sense of everyday life (NCTM, 2020). It is a necessity to have students work with, understand, and use data as an essential life skill in preparation for an ever-expanding range of jobs and careers (Boaler, 2021).

Nicolle Dexter's virus simulation and Rick Stuart's Rolling Down A River task exemplify a manner in which students are allowed to understand and critique the world. These tasks engage students in interesting contexts and encourage the development of statistical and mathematical models. It is real-world math in action.

Reimagining the journal has created a door for including student articles within our publication. Although Aderonke Adejare is not a student of Wisconsin, we are proud to elevate her work as a mathematician by publishing her paper *Understanding and Proving the Formal Definition of a Limit*, a paper written to help students better understand limits. Found within her introduction is the powerful phrase 'exploring and playing with limits'. These words paint a picture of a classroom where students are given the authority to experience the wonder, joy, and beauty of mathematics, a key component of broadening the purpose of learning mathematics (NCTM, 2020). Her paper exemplifies an end product of this type of environment.

### **Develop Deep Mathematical Understanding**

Developing deep mathematical understanding in students is a complex undertaking. The selection of a high-quality task that promotes mathematical reasoning is the foundation for this work and oftentimes students' first exposure to this type of task is fraught with challenges. Teachers can support students by building on and extending their students' current understanding and implementing scaffolding strategies. Using the strategies of Notice and Wonder, Questions and Steps, and Draw a Picture, as described by Katy Weber et al., are sure to support students to become capable doers of mathematics.

Using manipulatives is another way to develop deep mathematical understanding. Unfortunately, many reserve the use of manipulatives for early childhood and elementary math. In her article, Lynn Schaal makes a compelling argument as to why manipulatives are a must for middle school. (As a former high school teacher, I propose that manipulatives are a must for high school too!) Look to this article for how to create an engaging learning environment by incorporating the use of cuisenaire rods, algebra tiles, AngLegs, unifix cubes, and 3D solids and nets in a manner that will develop student conceptual understanding of the content at hand.

### **Implement Equitable Mathematics Instruction**

So how do we successfully move forward all of the aforementioned recommendations, strategies, and understandings about mathematics teaching and learning? Relationships. Relationships with oneself and with others. Through this, positive mathematical identities, agency, and authority are built, which is a precursor of implementing equitable mathematics instruction (NCTM, 2020). As we continue to navigate these uncertain times, Dave Ebert stresses that building relationships in a virtual learning environment cannot be forgotten. The stories shared and the strategies Dave offers are a charge for all of us to continue to build relationships in order to move our mathematical world forward.

These are only a brief dive into NCTM's Catalyzing Change Series. For those that want to learn more, here's a good place to start: <https://www.nctm.org/change/>.

A big 'thank you' goes out to the journal editors, Matt Chedister and Doug Burge, for their vision of this inaugural all-digital journal. Another big 'thank you' goes out to all who made our mathematical world a little bit better by sharing their insight: David Ebert, Nicolle Dexter, Katy Weber, Maggie McHugh, Jennifer Kosiak, Lynn Schaal, Aderonke Adejare, and Rick Stuart. You are all greatly appreciated!

We want to hear about your experience reading the journal in this new format, and we want to hear about the work you do with your students. Please consider sharing your stories by submitting an article, activity video segment, or student work.

Best wishes and take care,

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## References

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