MNSU-M Invigorates Methods Courses by Pairing Classroom Video Analysis with Developmental Learning Trajectories

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As Minnesota State University-Mankato graduates enter the teaching force expected to teach mathematics much differently than they experienced as K-12 students, classroom video analysis has been a powerful tool in re-shaping beliefs about what it means for learners to 'do mathematics'. Dr. Lisa Vasquez uses classroom video analysis as a critical component of her math methods courses and is loving the results. "Because many of our university students have not experienced within their own mathematics journey the type of learning we want today's K-12 students to engage in, they can struggle to envision the teaching practices we are trying to promote. By analyzing high-quality classroom video in our methods course, MNSU-M students see concrete ways of incorporating mathematics discussion and inquiry with any aged child in developmentally appropriate ways."

Through strategic use of the New Perspectives Online platform (P2S2) to support pre-



MNSU-M students engage in deep collaboration while analyzing classroom video on the New Perspectives Online platform - P2S2.

service teachers' beliefs about teaching and learning mathematics, Dr. Vasquez's students are empowered to understand what the Standards for Mathematical Practice look and sound like in action. Hannah Olson is one of many aspiring teachers at MNSU-M who is thrilled about the opportunity to use these tools before starting her career in teaching. "The New Perspectives Online classroom video platform allows future teachers like me to understand how to teach mathematics with different strategies. The platform has very high-quality content representing different ages and grades, that helps me see how children deeply learn mathematics and how teachers can provide the best education for all learners."

An essential component of the New Perspectives Online platform includes 14 Landscapes of Learning, trajectories that outline developmental pathways of big ideas, strategies and models that learners need to construct within different domains of mathematics such as multiplication and division, fractions, linear measurement, place value, data representation and analysis, and more. While Dr. Vasquez's students are analyzing classroom video and young children's work samples on the platform, MNSU-M students like Hannah use the Landscapes of Learning to deepen their mathematical knowledge for teaching. "The



Posting observations about big ideas, strategies and models on the Landscapes of Learning

Landscapes of Learning are supporting my understanding for elementary students' needs by providing a space to analyze different scenarios where students are constructing the big ideas, strategies, and models in actual classrooms."

"The landscapes have helped my future teachers recognize all of the pieces and parts that developmentally make up a deep understanding in different domains of mathematics. These tools are building the capacity for my university students to assess where each child is developmentally, and use that information to determine how to advance their thinking and understanding," Dr. Vasquez reports. No doubt, these future teachers at MNSU-M are being provided a golden opportunity to truly transform math classrooms into communities of young mathematicians at work.

To learn more about Contexts for Learning Mathematics, please visit our website at <u>New</u> <u>Perspectives on Learning.</u>