Center Staff

Dr. Julie Amador, Regional Director
Associate Professor of Mathematics Education
Julie teaches elementary/middle school mathematics and technology education at the University of Idaho, in the college of education’s department of curriculum and instruction. She researches lesson study and how teachers design and enact lessons, with a strong emphasis on what teachers notice about student thinking.

Dr. Abe Wallin, Regional Math Specialist
Abe teaches courses on mathematical thinking and provides curriculum and teaching support to area school districts. Recently he has been working on designing a K-5 curriculum, assessment writing, and development of mathematical tasks with local teachers. In addition, Abe continues to conduct research on the use of video clubs with mathematics teachers.

Jode Keehr, Program Coordinator
Jode’s background is in design, advertising, and web development. She is currently a graduate student in the human factors/experimental psychology doctoral program at the University of Idaho. Recent projects include examining leadership feedback and attitudes of math resistance.

Chris Chilton, Administrative Specialist
With years of experience in video, design, and audio, Chris supports local teachers with multimedia data collection and works on various projects for the center. He holds a bachelor’s degree in electronic media and film from Eastern Washington University in Cheney, Washington. Chris’s creativity is not limited to media, he’s also a talented musician.
“One of the most challenging parts of teaching at a rural school was the lack of opportunity to collaborate with other second grade teachers.”

In the fall of 2016, I began my career as a teacher in a very rural elementary school where we only have one class per grade. I had volunteered in different school districts for over nine years before receiving my teaching certificate. When my family landed in Bonners Ferry, Idaho, just three years ago, we knew we were home. With my three children attending the school,

Mt. Hall Elementary was already a huge part of our lives. I loved my tiny school (last year, we had a total of 137 students ranging from kindergarten to fifth grade). Yet as a first-year teacher, I had no idea what to expect at a remote, high-poverty school. Luckily, I had a few things going for me. I work with an incredibly dedicated and patient team of teachers who are absolutely willing to help me. Everyone is committed to doing anything for “our” kids.

The school year started as they often do, before I was ready and with a bang. I had known I would be teaching second grade for a few months, yet I still didn’t know what to expect or, if I’m being honest, how to meet the needs of all these learners. Advice I received from a fellow teacher and friend was to pick one subject and try to do it really well. I chose math, even though my degree is in history and I had wanted to teach high school social studies. As a student myself, I never loved math and believed I didn’t have the “math brain.” Surprisingly, when I was working on my teaching certificate I found math to be the most satisfying and relatable subject. With that in mind, I knew my one subject would be math. Teaching second-grade mathematics might not seem like rocket science, but its content lays a critical foundation for the rest of the students’ academic career.

One of the most challenging parts of teaching at a rural school is the lack of opportunity to collaborate with other second grade teachers. While I could, and did on a daily basis, collaborate with other teachers in my building, I was still the only second-grade teacher. I know I could have reached out to the “town school” in our district

By Tracy Roemer
for help but often I didn’t even know what I should ask. In late December, our principal asked if anyone would be willing to take part in a rural book club through the University of Idaho’s Regional Mathematics Center. Participants would use a program similar to Skype called Zoom (so they wouldn’t need to travel) and I agreed. As winter break began, my focus shifted from the proposed book study back to the very real battle of daily life as a first-year teacher.

Later that spring when I received information on the book club, I instantly recalled that I had committed and my nerves set in! To go online and talk to other, more seasoned teachers was absolutely nerve-racking. The day arrived when Abe Wallin, from the Idaho Regional Mathematics Center, stopped by my little school to drop off the selected book, and it was official. It was time for me to get serious.

The selected book was the *Mathematical Mindset* by Jo Boaler (2016). With the book came a timeline outlining dates and the assigned chapters. I liked the structure and knowing what to expect. The format and discussion expectations were reasonable. In anticipation of the first meeting, I read and took notes on the first two chapters and felt ready to have an in-depth discussion about the information I had learned. I followed a

“I was amazed at how much I learned, often from simply listening to these teachers share their experiences”
hyper-link that came in an email invitation and at the designated time I connected with peers located across rural Northern Idaho. Our conversation focused on how to better encourage mathematical mindsets in our students. From our first discussion, I was absolutely hooked. The meeting format was such that all of us met initially to welcome each other and review meeting objectives. Then there were break-out sessions in which small groups of teachers from different locations discussed the chapters. Afterward, we returned to the main chat room and shared our conclusions with the whole group. It was easy! I was amazed at how much I learned, often from simply listening to these teachers share their experiences, tips, and tricks-of-the-trade that were spurred by the book.

I cannot emphasize enough how being a part of this bookclub and reading *Mathematical Mindsets* (Boaler, 2016) impacted and changed my first year of teaching. The very next day, after our first meeting, I changed how I taught my class mathematics. As I mentioned, math was already the one subject I felt most passionate about and the subject I most wanted my students to enjoy; this book gave me many new tools to help them do just that. I shared details about how our brains work with my second graders and taught new techniques, all which stemmed from spending one hour every other week with peers from across the Panhandle. My class learned to celebrate mistakes, enjoy struggle, and understand that every single student's brain works differently, but we can all learn math. My favorite chapter was one in which the author described at length the importance of children working together. With the help of the rural book club, I learned practical ways to implement group work into my math class. Through our collaboration,
I also learned how other teachers in second grade were using daily exit tickets effectively to quickly assess student comprehension and differentiate future lessons. Reading a book and dissecting it with teachers in similar environments was absolutely invaluable and made a huge difference in my first year of teaching.

When I agreed to participate in the book club for rural math teachers I had no idea how much my first year of teaching would be impacted. As I write this, I am reviewing my notes and the plans that rural book club participants shared with me. With a new school year now upon us, I am looking forward to using more of the techniques I discovered while reading *Mathematical Mindset* (Boaler, 2016) and from the many wonderful teachers I met last spring. I enjoyed getting to know them and I loved hearing their responses to questions and the real life situations they described. It was a great opportunity to collaborate with other teachers, who get what it’s like to teach at a rural school. I am looking forward to joining the next round.

Tracy Roemer teaches second grade at Mt. Hall Elementary in Bonners Ferry, ID. She holds a bachelor’s degree from Western Washington University. Before earning her teaching certificate, she spent nine years working in various positions for multiple school districts.

Would you like to check out Jo Boalers’ *Mathematical Mindests* or other great resources? We also have a comprehensive inventory of manipulatives for the classroom!

Visit our website: uidaho.edu/irmc
Idaho Regional Mathematics Center

Upcoming Events

Discovering Desmos
Saturday, October 14th; 9:00 am - 3:30 pm
Room 241, University of Idaho Harbor Center, Coeur d’Alene

More than a graphing calculator, Desmos is designed to encourage student exploration. Join us for this one-day workshop to experience the power of this flexible interactive program. Teachers will investigate features of the site, see how it can be used in various teaching situations, and be given time to collaborate with others in developing their own lessons. Teachers of all grade levels are welcome to participate. Options for participating from a distance may be available.

If you are interested, please register at desmoscda-oct2017.eventbrite.com. A second workshop will be offered in the spring. Watch our website for details.

Rural Book Club
Thursdays, 4:00 pm - 5:00 pm; Jan. 18, Feb. 8, Mar. 1 & 29, April 19, 2018

We will be offering a virtual book club for Rural educators using Routines for Reasoning (Kazemi, Lovett, & Creightlon, 2016). The book features various pedagogical routines which can be implemented in the classroom. Synchronous meetings will be held online where each month teachers will spend time co-planning how they will implement each routine and afterwards they will share lesson learned from the classroom. Please see details regarding the meeting dates and times above. Three PD credits will be available for successful completion of this book club. If you have further questions, contact the Idaho Regional Mathematics Center.

Region 1 Coach’s Summit
Tuesday, October 31st; 9:00 am - 3:00 pm
University of Idaho Harbor Center, Coeur d’Alene

All district instructional coaches are welcome to attend the Fall 2017 Mathematics Coaching Summit. The meeting will give participants an opportunity to share resources, discuss issues, and connect with others from around the region. We will be focusing part of the meeting on the book Visible Learning for Mathematics (Hattie, et al., 2017). We still have a few copies if you need one. Please contact Abe Wallin (wallin@uidaho.edu) if you plan on attending.

TMT Classes
Dates will be posted on our website on November 1st. Registration begins March 1st, 2018. Please email irmc@uidaho.edu for more details.

Teaching Mathematical Thinking (TMT) is a course that fulfills the 3-credit MTI course requirement for Idaho teachers. This course provides an opportunity to study fundamental mathematical theory underlying the content area of numbers and operations and student reasoning of numbers and operations topics within a framework of a student-centered, problem-based classroom.
Your District Should Consider Open Up Resources

Since the adoption of the Common Core State Standards in 2010, school districts across Idaho have been searching for a curriculum that fully prepares students for success. The state has compiled ratings of materials to aid in this process, but districts must ultimately conduct local reviews to determine the best resources for their students. These curriculum reviews are intensive and rely on committed teachers and administrators sifting through textbooks, combing over research, and weighing pros and cons of each product in order to find the best materials for their money. Many districts have made decisions, while others await something better. The new online curriculum, Open Up Resources, may be worth a closer look regardless of whether your district has purchased materials or is still searching.

Open Up Resources’ mathematics curriculum is an open source educational resource that addresses all aspects of teaching the Idaho Content Standards. The company is a non-profit and secured grants to fund the development of this product. Partnering with Bill McCallum’s Illustrative Mathematics team, Open Up Resources developed a complete middle school (6-8) curriculum which embodies the recommendations found in the Publisher’s Criteria document for the Common Core State Standards. The curriculum resides online, but can be printed. It contains units, lessons, assessments, and information for instruction. The lessons are a balance of conceptual development and skill practice to build both understanding of topics and procedural fluency in completing problems.
The teacher screen is similar to the student screen, but has number of different options available.

The scope and sequence (see page 9) presents an integrated design. Topics such as geometry and statistics are used as context for exploring major clusters at a particular grade level. This means that teachers can address content in depth and students will understand the relationships between standards across their grade level. As many textbooks have continued to isolate standards in mathematical silos, Open Up Resources is one of the few products that has created connections across standards, which more closely aligns with the way mathematics is used by professionals in the real world. Unit summaries are provided in the scope sequence explaining the objectives and how each addresses the goals of the standards at that grade level.

The units are structured in such a way that provides opportunities for students to develop their conceptual understanding and procedural fluency of topics through a gradual exploration, leading to an eventual formalization of content. Each lesson includes learning goals, learning targets, standards connections, warm-ups, cool-downs, and detailed descriptions. Teachers are given instructions for presenting the lesson as well as potential student responses to tasks, common misconceptions to watch for, and differentiation suggestions. Teachers will still need to take time planning each day, particularly the interactive aspects, but the wealth of resources for each lesson help teachers prepare for this process.

Assessments in Open Up Resources are useful for evaluating both student understanding and procedural fluency. Unit pre-tests address prerequisite knowledge and aid teachers in determining student readiness for new content. Exit tickets are included in many lessons and will further inform instructional decisions throughout the unit. The summative assessments align to problems students will face on the ISAT2.0, thereby creating useful exposure for students and clear understanding for teachers.

Not surprisingly based on the connection to Illustrative Mathematics, the tasks within each lesson are closely tied to the content standards and mathematical practices. Students will be enculturated into mathematical modeling and genuine inquiry through engaging in these lessons. There are numerous opportunities in each unit for students to create conjectures, analyze situations, and reflect on their own thinking. This should benefit students as they progress to high school where mathematical modeling is explicitly tied to many of the standards (42) at that grade-band.

During my personal review of the Open Up Resources content using the Instructional Materials Evaluation Tool (IMET), I found that the curriculum rated well in most areas. In my assessment, the curriculum scored as meeting expectations in all areas of the tool, with the possible exception of support of English Language
Learners and other populations (IMET AC3A). In this area I scored the materials as a “partially met”. The curriculum describes a general philosophy for teaching diverse populations of students, four design principles they followed in creating their materials, and suggestions in most lessons for differentiation, hence there are many resources included. It would have been nice to have seen a more robust list of interventions, but this could be said of most resources currently available and in many ways, I feel Open Up Resources meets this goal better than most. In no way should this discourage districts from using these materials.

Knowing what is available is sometimes the greatest challenge in selecting curricular materials at the district level. This review of Open Up Resource serves as an introduction to one more option for navigating instruction of the Idaho Content Standards for Mathematics. It is a complete curriculum which integrates content, builds conceptual understanding, and presents a holistic view of mathematics instruction. Although no curriculum is perfect, exploring this one is worth your time.

Access these materials by creating your free account at im.openupresources.org
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4-5 p.m., Thursdays
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At Your School/District Office

University of Idaho
Coeur d’Alene

DISCOVERING DESMOS
A Workshop for Educators
Saturday, October 14, 2017
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University of Idaho Coeur d’Alene
Harbor Center Room 241