virginia advanced study strategies

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RURAL MATH INNOVATION NETWORK

Year I Newsletter

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RMIN Partner Divisions and Schools

Appomattox County Schools
- *Appomattox Middle School*

Brunswick County Schools
- *Russell Middle School*

Buchanan County Schools
- *Twin Valley High School*

Buckingham County Schools
- *Buckingham Middle School*
- *Buckingham County High School*

Carroll County Schools
- *Carroll County Middle School*

Cumberland County Schools
- *Cumberland Middle School*

Dickenson County Schools
- *Ridgeview Middle School*
- *Ridgeview High School*

Galax City Schools
- *Galax Middle School*
- *Galax High School*

Grayson County Schools
- *Independence Middle School*
- *Grayson County High School*

Greensville County Schools
- *EW Wyatt Middle School*

Halifax County Schools
- *Halifax County Middle School*
- *Halifax County High School*

Lunenburg County Schools
- *Lunenburg Middle School*
- *Central High School*

Mecklenburg County Schools
- *Bluestone High School*
- *Park View High School*

Norton City Schools
- *Norton Elem/Middle School*
- *J I Burton High School*

Nottoway County Schools
- *Nottoway Middle School*

Smyth County Schools
- *Northwood Middle School*

Sussex County Schools
- *Sussex Central High School*

Wythe County Schools
- *Rural Retreat Middle School*

RMIN Year 1 In Review

Dr. Hobart Harmon
RMIN Project Director

In January 2017 Virginia Advanced Study Strategies, Inc. (VASS) began implementing a second U.S. Department of Education Investing in Innovation (i3) "development" project. One of only 15 i3 projects funded nationally in the annual competition, the four-year Rural Math Innovation Network (RMIN) seeks to develop a process for pre-Algebra and Algebra I teachers in high need rural school environments to incorporate self-efficacy and growth mindset strategies into lesson plans for teaching math competencies used by technicians in STEM and health (STEM-H) occupations. The increase in student self-efficacy and growth mindset is to result in an increase of student passage rates on math assessments considered critical for pursuing appropriate high school and postsecondary education as preparation for technician occupations in STEM-H career fields of the regional workforce.

Increasingly, innovation-minded teachers in rural areas must have opportunities to collaborate in formal "networked improvement communities" (NIC) to create solutions to their own problems of practice that address isolation and other barriers to instructional improvement for students. Therefore, RMIN establishes such a network that embraces the evolving concept of "improvement science" to create lessons tailored for students in the specific rural school and community contexts.

Only projects of national importance are funded by the USED i3 competition. Why is RMIN important? The answer is simple: more students in schools across rural America must succeed in pre-Algebra and Algebra 1 if they are to earn credentials required for careers in STEM-H related occupations. And much evidence indicates a majority of these occupations in rural regions that offer a living wage will be technician-level occupations (e.g., advanced manufacturing, medical technician). Most of these occupations will require education beyond high school but less than a Bachelor's degree.

VASS staff enjoyed many successes and gained valuable lessons learned in the organization's first i3 development project, the Rural Math Excel Partnership. These past experiences along with exceptional expertise offered by project consultants and a dynamic technology platform called Torsh TALENT, enabled the RMIN project to complete Year 1 of RMIN with many accomplishments and lessons learned. A total of 34 teachers and their respective principals from 18 Virginia school divisions participate in the project (see Figure 1). This newsletter offers Year 1 highlights. Read on to learn more about the RMIN project's first year, including results from the external evaluation. You can also review a one-page information sheet about the project at: RMIN Overview. Also, an informational video about the project is at: RMIN Video.

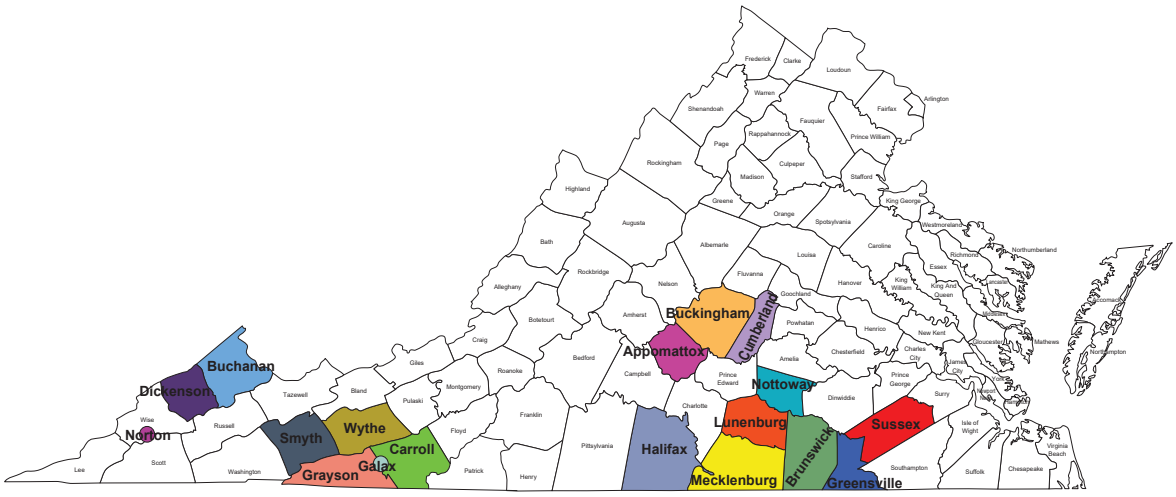


Figure 1. The 18 Participating School Divisions in the Rural Math Innovation Network

RMIN Teacher Selection

RMIN began Year 1 with careful consideration to selection of "innovation-minded" teachers from eligible school divisions in Southside and Southwest Virginia. Key criteria in the selection process included:

- Through an outreach and recruitment process in late 2016 and early 2017, 18 school divisions signed MOUs to be partners in the development project: the counties of Appomattox, Brunswick, Buchanan, Buckingham, Carroll, Cumberland, Dickenson, Grayson, Greensville, Halifax, Lunenburg, Mecklenburg, Nottoway, Smyth, Sussex, and Wythe; and the cities of Galax and Norton.
- Two webinars were held for teachers and principals in eligible school divisions to understand the selection process and criteria. Two teachers per participating division were eligible to participate.
- Participating divisions received a teacher nomination form to distribute to pre-Algebra and Algebra 1 teachers with mindsets and practices that were a good match for the project. The principal of each nominated teacher also had to submit a statement acknowledging that the teacher met the criteria established for inclusion in the network and the principal would support the teacher's participation in the network. An e-mail communication was sent to principals and teachers as a reminder of the RMIN opportunity and nomination process deadline.
- After the first round of nominations, school division leaders received additional email communications soliciting nominations for unfilled teacher slots in the networked community of teachers.
- RMIN staff selected the final list of teachers for inclusion in the network. From the applications, a total of 34 teachers were selected to participate based on their propensity for innovative thinking and teaching practices, comfort with learning and using technology, and willingness to video-record instruction and collaborate with fellow teachers.

RMIN Teacher Orientation

In May 2017, RMIN network facilitators, Jennifer Stevens and Sandy Wilborn, pictured on left, invited the teachers to participate in a welcome webinar. This began the process of helping teachers to know one another before the face-to-face 4-day summer training. Two choices of one-hour long webinar sessions were provided to suit as many schedules of teachers as possible – one on May 2 at 7 p.m. and another on May 3 at 3:30 p.m. The webinar recapped teacher expectations and benefits for participation in the project and gave teachers the chance to ask detailed questions. It also gave teachers the opportunity to practice participating in a webinar using the "raise your hand" feature, polls, surveys, and the question/chat box.

A key question on the webinar survey asked teachers about their understanding of the project and continued desire to participate now that they had been selected. All indicated that they wished to participate, but some teachers also had questions about participation. Stevens and Wilborn made individual phone calls to these teachers to further answer questions about the project.

Sandy and Jennifer conducted a second "practice" webinar event in early July for teachers prior to the summer institute. This gave teachers another opportunity to get more familiar with how to participate in a webinar (as many revealed in the first webinar that they had little experience/comfort with webinars). This second webinar also gave RMIN staff an opportunity to ensure that teacher user accounts were established in the Torsh TALENT technology platform and that teachers were able to log in prior to the summer institute.

RMIN SUMMER INSTITUTE

A key accomplishment of RMIN's first year was the 4-day summer training institute for teachers. Their principals participated in a 1 and 1/2 day training, which included comments by a former national high school principal of the year. The institute was held on July 17-20, 2017, at the Sheraton Roanoke Hotel & Conference Center. You can review the institute agenda at: **RMIN 2017 Summer Institute**.

As part of the opening session on Day 1 for teachers and principals, RMIN leadership described the RMIN purpose, outcomes, and roles. Project consultants offered research summaries on *Math Learning in the Rural Context* and the *Expectancy-Value-Cost Model of Motivation*. Lunch presenters included the RMIN external evaluator's description of the purpose of the external evaluation required by USED and a presentation by the 2009 national high school principal of the year (from rural Georgia) entitled *Supporting Teacher Innovation: A Principal's Role*. Additional sessions on Day 1 for teachers included *Math Motivation: Rural Poverty and Ethnicity*, the session *Student Growth Mindset*, and the session *Student Self- Efficacy*.

A special session for principals by the national principal of the year addressed *Supporting Teacher Innovation* and Dr. Dorothea Shannon's session on *Principal Leadership in Practice*. The RMIN project staff are greatly appreciative of the consultants who provided expertise and support to teachers in the network and their principals.

Special thanks goes to Dr. Wilson, who developed a set of videos on principal support of teachers in VASS's first i3 project, for accepting the invitation to volunteer his services for the RMIN summer institute.

Day 2 sessions for principals included *Principal Support and Math Achievement* and *Principal Leadership*, while teachers focused on teching applications of real-world math, planning lessons using a template and rubric, and videotaping lessons taught for critique by colleagues in the network. A special lunch session addressed *Teacher/Principal Relationships: Fostering Innovation*. A final session on Day 2 engaged teachers in understanding common topics and drafting of the RMIN lesson plan.

On Day 3 of the summer institute, teachers engaged in technology topics important to their role in the networked community. RMIN staff Stevens and Wilborn engaged teachers in using iPad tablets, navigating the online network, recording and loading videos, and viewing and critiquing videos. Teachers learned more about collaborating in a networked community and related RMIN project resources. In the final session of Day 3, the project's external evaluator engaged teachers in a discussion of the process and procedures of collecting data necessary for the USED-required external evaluation.

During Day 4, teachers continued drafting and using the lesson plan rubric. RMIN staff explained how the network would be facilitated, responded to teacher questions, and outlined next steps. The external evaluator administered the summer institute's feedback and evaluation survey, which teachers returned as they exited the room.

Group photo of teachers at Summer Institute

Consultants from left are Dorothea Shannon, Mark Wilson, Pat Hardre, Kenn Barron, Kyle Schultz, Chris Hulleman and Stephanie Wormington.

RMIN TRAINING EXPERTISE

Project staff are particulaly appreciative to all who helped make the 2017 summer institute learning opportunities for teachers and principals successful. Below are highlights of expertise roles of persons involved.

- Project director, Dr. Hobart Harmon, and project manager, Veronica Tate, introduced RMIN goal and objectives and explained the research undergirding the project design and logic model.
- Dr. Patricia Hardre, Professor of Educational Psychology at the University of Oklahoma, shared research about contextual factors influencing student motivation and success in rural communities, including the impact of poverty and race/ethnicity on the perception of math attainment and value.
- Dr. Kenn Barron, Director of the Motivation Research Institute and Psychology Professor at James Madison University, introduced the concept of a networked improvement community and shared a research-based model to increase student motivation. Dr. Stephanie Wormington, co-principal investigator of Motivate Lab and Assistant Professor at the University of Virginia, co-presented with Dr. Barron. Dr. Chris Hulleman, Director of Motivate Lab and Associate Professor at the University of Virginia, provided input in the planning of the summer institute sessions on student motivation.
- Dr. Kyle Schultz, Associate Professor in the College of Education at the University of Mary Washington, and Dr. Barron trained participants in using a lesson plan template that reflects the use of strategies to impact student self-efficacy and growth mindset in math and the infusion of real-world math applications. The template includes a reflection section that encourages network teachers to consider the success of the lesson and revisions that have potential to improve future delivery of the lesson.
- Dr. Schultz guided teachers through the process of providing feedback on video recordings of classroom instruction using a rubric that helps them understand what to look for and how to provide constructive comments to encourage professional growth.
- Network facilitators Jennifer Stevens and Sandy Wilborn provided teachers with training to infuse lesson plans with real-world examples of math used in STEM and health technician occupations. Teachers also received a preliminary set of math-related tools used by STEM and health technicians. Examples included a trundle wheel, used by surveyors to find approximate distance, and a micrometer, used by quality control technicians at a manufacturing facility.
- Stevens and Wilborn also trained teachers to: 1) use project iPads for video-recording classroom instruction; 2) upload lesson plans, video recordings and instructional resources into the Torsh TALENT virtual network platform; and 3) engage in collaborative activities in the platform such as peer-to-peer critique of lesson plans and instruction, discussions in topic forums, and video conferencing for professional dialogue.
- Dr. Dorothea Shannon, RMIN principl consultant, offered sessions that guided principals and other support administrators in planning and fostering supports for teacher innovation and success in the RMIN project.
- Dr. Mark Wilson, 2009 National Association of Secondary Schools Principal of the Year and coach, provided a keynote address and offered a special session on supporting innovative teachers.
- Dr. Kim Cowley, ICF external evaluator team lead, shared the project evaluation design and process with participants, including expectations and plans for collecting data and information from teachers and students about project implementation and progress.
- Sue Adams, Media & Fiscal Specialist, coordinated the institute logistics and the agenda, and curated all institute web resources and print materials.

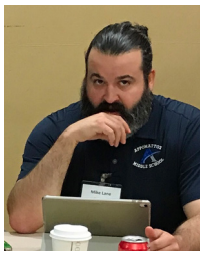
RMIN Post-Institute Assistance

Teachers unable to attend the 4-day summer institute received special training via webinars, reviewed videos of key sessions from the summer institute, and communicated frequently with RMIN network facilitators. The summer institute training for all teachers was supplemented in the fall of 2017 with several webinars that provided follow-up support in specific areas, such as: classroom communication strategies to increase student self-efficacy and growth mindset; lesson plan template tips; and additional training on use of the virtual platform. Principals also participated in several follow-up webinars to continue discussing ways to foster instructional innovation by participating teachers. Ongoing professional learning and training continues as project implementation progresses, including planning for a blended face-to-face and virtual training institute in summer 2018.

In project Year 1, this assistance was the foundation for helping teachers build the collaborative relationships and technology skills necessary for successful participation in the virtual networked improvement community.

RMIN Virtual Network Collaboration

The "innovation" in RMIN is a process whereby professional collaboration among rural pre-Algebra and Algebra I teachers in a virtual networked improvement community result in solutions to a problem of practice (i.e., lesson plans with self-efficacy and growth mindset strategies). This requires a robust and nimble virtual platform to host the varied teacher collaboration activities. In spring 2017, project staff tested several virtual platforms and chose Torsh TALENT – a system that provides the features necessary for meaningful teacher collaboration. Network teachers were trained on use of the platform during the summer institute, with ongoing training (e.g., webinars) and one-on-one support provided throughout the fall. RMIN staff Jennifer Stevens and Sandy Wilborn serve as the network facilitators. Near the end of the fall semester, two network teachers were selected to serve as lead teacher facilitators: Janet Mullins (Grayson County) photo on left, and Mike Lane (Appomattox County) on the right.



Network activities focused on facilitating teacher collaboration in developing anchor lesson plans that guide instruction. Recent research reveals that teachers who use lesson plans specifically designed to promote students' deep understanding of math concepts with real-world examples will increase achievement. Each RMIN lesson plan is to include instructional strategies that increase students' belief that they can learn and master math through practice. The strategies are to help make math relevant through real-world applications. Relevance helps students see the "value" of learning math to their everyday life.

Teachers serve as "critical friends" in small peer groups to constructively critique each other's lessons and instruction that help strengthen both. Using a template designed for the project consultants (i.e., Drs. Barron and Schultz), teachers create and upload their lesson plans, and provide each other with feedback on the plans. Teachers then video record their lesson delivery in the classroom using project iPads and upload the videos to the platform.

The peer groups provide feedback on the videos virtually, using a feature that allows the viewer to tag the video and comment at specific times. For example, one viewer may focus specifically on tagging points in the instructional delivery where the teacher demonstrates the use of strategies to impact growth mindset. Another viewer may apply time-synced comments about students' reactions to real-world examples of math skills and concepts. Teachers use an iterative cycle to revise and strengthen their lesson plans and instruction.

Other virtual network activities include professional discussion through teacher forums that focus on specific sub-topics of interest. Examples include "Embracing Mistakes" to help reinforce that trying and failing is a valuable part of learning math and "Our RMIN Journey," where teachers discuss a shift in their own mindset about how to motivate students to learn and master math.

Following are quotes of teacher reflections on their network experiences:

… I too, had to make some changes within myself. The first change was to immerse myself in the material, develop my own understanding. I watched and re-watched the "brain plasticity" videos, TED Talks and various podcasts. I have since come to the understanding that growth is possible if the right emphasis is placed on valuing the process of learning and the actions required to achieve growth. … I must remember that mindset lies with the student and I must become more effective at communicating growth mindset principles.

I enjoy learning different approaches to teaching. I love the growth mindset approach even though I have always tried to encourage and inspire students to be successful. As a class, we are using the growth mindset vocabulary to encourage each other in an effort to work through and learn from our mistakes…. My students that struggle with math are coming out of their comfort zones and are willing to take the initiative to work problems in front of the class.

I can't wait to see what develops from this program with the talent and creativity from the group chosen for this project. What I have seen so far has been excellent, and a little intimidating as I think about my part in this program. I am looking forward to the challenge of the program and working with all of you in developing a database of lessons to share…

The platform also includes a repository section where teachers and project staff can organize useful resources and documents for mutual access. These include instructional supports, photographs of project activities, inspiring YouTube and Ted-Ed video clips on motivation research, and more.

One project outcome is for network teachers to develop a collection of exemplary pre-Algebra and Algebra I lesson plans. These lesson plans are to increase student beliefs about their ability to learn and master the kind of math needed for success in high-demand STEM-H jobs in rural areas. Teacher collaboration in the virtual platform is the vehicle for the development and refinement of those plans.

RMIN Math Relevance

Teachers are collaborating in the network to incorporate examples of math aplications as used by STEM-H technicians in the workplace. VASS held four sessions that allowed teachers to hear directly from technicians in high demand STEM-H occupations about the math used daily in the workplace. Four of these modified DACUM sessions were held regionally to reduce travel distance for teachers: Galax (Oct 24), Abingdon (Oct 25), Keysville (Nov 7), and Emporia (Nov 8). All but one teacher was able to attend a session. Examples of the

occupations represented by technicians included general contractor; heating, ventilation and air conditioning (HVAC); electrician; nurse; physical therapy assistant; radiology technician; IT technician; paramedic; plumber; soil conservation technician; occupational therapy assistant; and cardiovascular technician. Each technician described the responsibilities and tasks performed daily on the job. Based on technician descriptions, teachers then determined the math concepts associated with those tasks.

Teachers also had the opportunity to sit down one-on-one with technicians to ask more questions and to create real-world math problems to infuse into instruction. Teachers learned to make connections between the math concepts they teach in the classroom and how math competencies are used in STEM-H jobs. Because of the modified DACUM sessions, RMIN teachers are more able to help their students make connections and understand the value of learning mathematics to success in STEM-H careers.

Another result of the modified DACUM sessions with STEM-H technicians is that each teacher created math problems and/or projects based on the information gathered and shared these with other teachers in the network through the virtual platform. Also, videos were recorded of the STEM-H technicians explaining the relevance of math to their job responsibilities, and those videos are available to RMIN teachers in an online repository for use in their instruction.

RMIN Advisory Leadership Team

RMIN uses an Advisory Leadership Team (ALT) to review and receive feedback on project implementation challenges. The team met face-to-face on December 4 in Christiansburg in an evening session led by the external evaluator as part of the RMIN Evaluation Retreat. The evaluator highlighted Year 1 evaluation results. ALT members provided comments about their personal experiences in the project and ideas for addressing RMIN challenges. During the RMIN staff evaluation retreat the following day, again led by the external evaluator, project staff reflected on the input offered the previous night by ALT members and used the input to help guide decisions about future implementation activities in Year 2.

Consequently, members of the ALT team offered valuable advice for making project changes that accommodate challenging circumstances in the schools. Team members are invited to serve with attention to geographic representation across Southside and Southwest Virginia and role diversity. Membership is comprised of classroom teachers, principals, division administrators, and STEM-H technicians. Additional members are invited to serve on the ALT as necessary to address key project challenges. Current ALT membership includes:

- Shelby Brown, Math Teacher, Mecklenburg County Public Schools
- Jami Clements, Principal, Greensville County Public Schools
- Robert Fultz, Math Teacher, Norton City Public Schools
- Mike Lane, Math Teacher, Appomattox County Public Schools
- Andrew McAbee, Master Plumber, Satterfield Plumbing
- Janet Mullins, Math Teacher, Grayson County Public Schools
- Paul Nichols, Superintendent, Mecklenburg County Public Schools
- Robbie Patton, Principal, Grayson County Public Schools
- Tony Robinson, Supervisor of Curriculum & Instruction, Dickenson County Public Schools

Plans are for the ALT to meet once face-to-face and once virtually on an annual basis to review evaluation results and provide advice on project implementation. RMIN staff and consultants extend a special thanks to the ALT for their reflection and advice. Photo is the Advisory Leadership Team, ICF evaluator, education consultant and some project staff.

RMIN External Evaluation Results

All USED i3 projects are required to have an ongoing independent external evaluation that seeks to provide objective information for project use and reporting requirements. This represents an important investment of more than $400,000 in RMIN. Results of the final project evaluation report are to provide evidence if the innovation is a promising practice that is worthy of further validation and potential scale-up to other schools across the country. In Year 1, RMIN established a strong collaborative relationship with its external evaluators, Dr. Kimberly Cowley and Dr. Kazuaki Uekawa.

The evaluation includes three components: a *formative study* to provide ongoing feedback about participants' reactions, learning, behaviors, and results; an *implementation study* focusing on how well the structural and programmatic aspects of the RMIN project were implemented, as well as facilitating or impeding factors; and an *impact study* to determine the extent to which the project impacts high-need students' math achievement.

Among the evaluation activities, the evaluation team conducts an annual 75-item teacher survey to track trends and changes in teachers' beliefs/practices throughout their participation in the RMIN project. The first survey administration occurred on November 6, 2017 using an online survey. The first section (50 items) focused on teachers' educational beliefs and perceptions, and the second section (25 items) focused on their instructional practices and behaviors. All 34 teachers (100%) completed the survey, which will be administered annually. Evaluators also collected data from participants at the summer institute, conducted telephone interviews, and used other technology (e.g., GoToWebinar videoconferencing system) to solicit evaluative and feedback information from project participants, including staff and consultants.

The full evaluation report for year one is availabe at: **YEAR 1 EVALUATION REPORT.** The project staff greatly appreciate the ongoing efforts of the evaluators. Below are highlights of evaluation results for the start-up year of the RMIN project.

Participant Reactions. The RMIN project started off on a high note, with the summer training institute for principals and teachers. Reactions were very positive from both groups, with high ratings for their engagement in and relevance of the institute and the topics covered. Further, both groups identified areas in which follow-up support was needed. Principals wanted more detailed information about the project and what their teachers would be doing, as well as more concrete ways in which they could provide support for their participating teachers. For teachers, the biggest areas in need of follow-up were clarity about project expectations and deadlines and the lesson plan component, including the concepts of self-efficacy and growth mindset.

- Overall, principals viewed the summer training institute positively, with all 16 Engagement/Relevance and Satisfaction item ratings at or above 3.70 and a mean score of 4.12 on a 5-point scale. Less than 15% gave any ratings of 1 or 2 to any of these items.

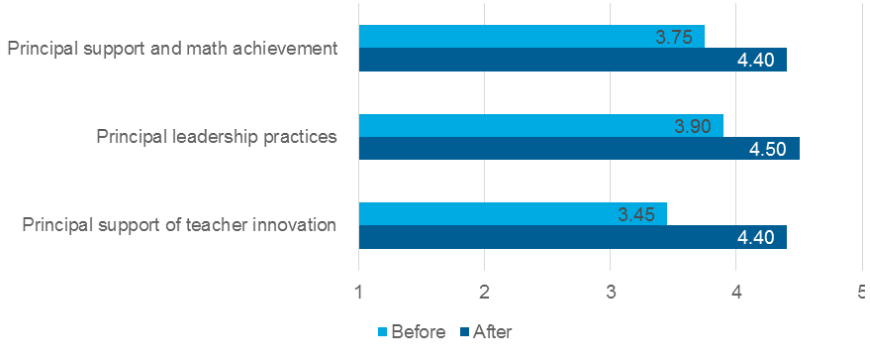
Teachers expressed excitement about and appreciation for their involvement in the project during the institute at the beginning of the year, and reflected the same perceptions at the year's end. Although the lesson plan component was still an area of uncertainty for some of the teachers, there was still a high level of excitement about and commitment for the project. Further, the modified face-to-face DACUM session that was held in four locations for convenient teacher access seemed to provide a spark or connection that enabled some of the teachers to begin moving forward with lesson plan development.

- Overall, teachers viewed the summer training institute positively, with all 22 Engagement/Relevance and Satisfaction item ratings at or above 3.80 and a mean score of 4.31 on a 5-point scale. Less than 10% gave any ratings of 1 or 2 to any of these items.
- In summary, teachers were positive and enthusiastic about the project. Specific teacher comments include:
    - *The program is making me a better teacher and my students better learners.*

- *I think it's a work in progress and we all need to understand that there will be bumps along the way and that we will all learn and grow as we go along.*
- *I think the best is yet to come. I'm thankful to be a part of RMIN.*

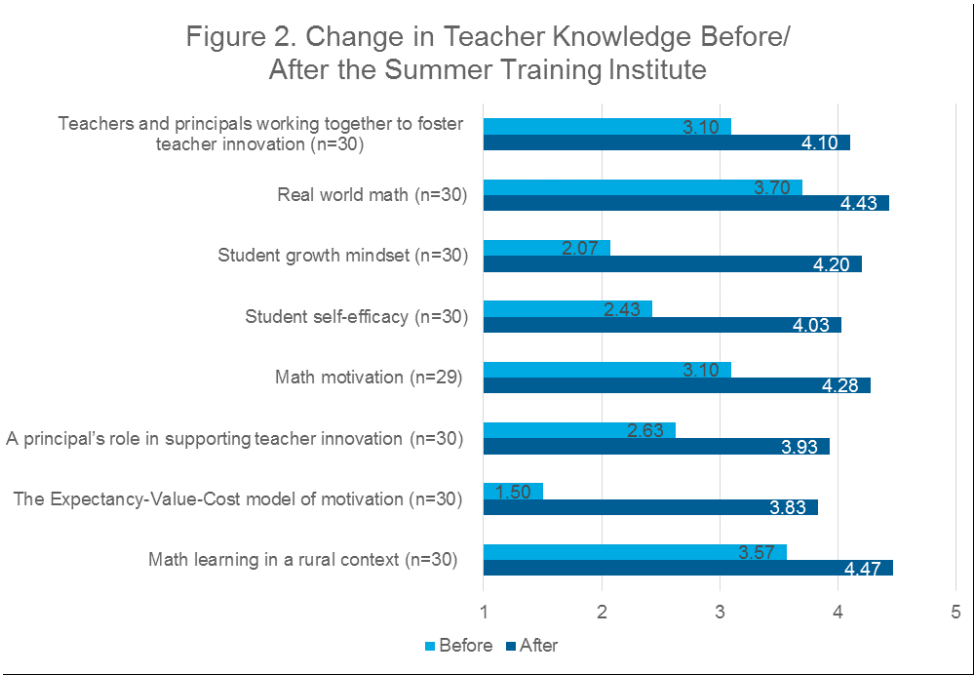
Participant Learning. Both principals and teachers indicated their knowledge about relevant topics had increased after participating in the summer training institute. Teachers also reported growth in a variety of skills as a result of participating in the institute; areas in which teachers reported least growth were how to collaboratively develop lesson plans that integrated growth mindset or self-efficacy strategies. However, by end of the year, teachers specifically noted during interviews their growth in knowledge about growth mindset and self-efficacy, which was supported by their high ratings of agreement about their knowledge of these topics in the annual survey. By end of year, teachers were less in agreement that they knew how to undertake activities related to the observation component of the project.

Figure 1. Change in Principal Knowledge Before/ After the Summer Training Institute (n=20)



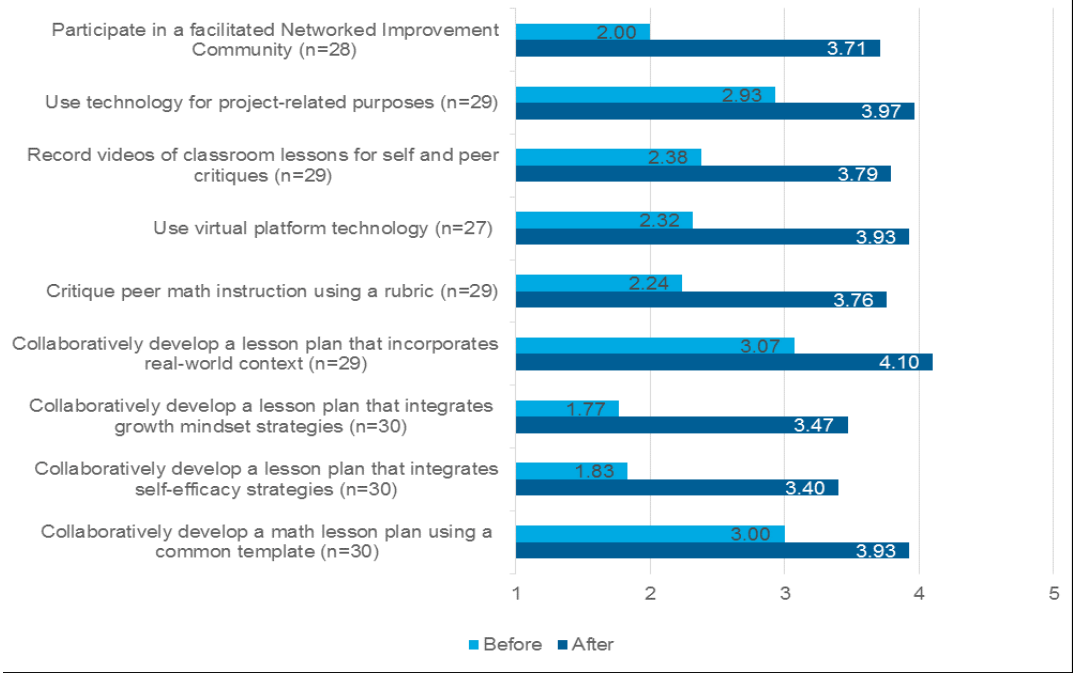
Teachers. Mean scores increased from pre (start of institute) to post (end of institute) by as much as 2.33 for the Expectancy-Value-Cost model of motivation and 2.13 for student growth mindset using the same 5-point scale. Post mean scores ranged from a low of 3.83 (model of motivation) to a high of 4.47 (math learning in a rural context).

Figure 2. Change in Teacher Knowledge Before/ After the Summer Training Institute



Smaller increases were found in the nine skill areas critical to the project (see Figure 3). Mean scores increased from pre to post by as much as 1.71 for participating in a facilitated NIC and 1.70 for collaboratively developing a lesson plan integrating growth mindset strategies (5-point scale of 1 "little to no understanding of the skill" to 5 "can perform the skill and teach others to do it"). Post mean scores ranged from a low of 3.40 (develop a lesson plan integrating self-efficacy strategies) to a high of 4.10 (develop a lesson plan incorporating real-world context).

Figure 3. Change in Teacher Skills Before/ After the Summer Training Institute



Participant Behaviors. Teachers appear to be participating fully in the project activities as well as the associated evaluation data collection activities. Maintaining that high level of engagement and participation will be critical throughout Years 2-4, but having these high levels of commitment throughout Year 1 builds a strong foundation on which to build future engagement.

The teacher survey results provide a baseline for a variety of teachers' instructional practices; trends and changes in these practices can be mapped throughout the remaining years of the project to see how teachers are modifying their instruction as they incorporate their project learnings into their classrooms. For Year 1, teachers were most often incorporating practices related to growth mindset and self-efficacy into their daily or weekly behaviors, and were less often engaging in practices related to lesson plan development or requesting and providing feedback on lesson plans or video-recorded classroom instruction.

Influence on Students' Social-Emotional Learning. Preliminary anecdotal evidence from participating teachers indicates most students are responding favorably to growth mindset and self-efficacy strategies that teachers were introducing in their classroom instruction, though some students appeared less receptive.

Facilitating and Challenging Factors. There were several common factors that project staff and teachers acknowledged were helping move the project forward, including the project staff and consultants, the project activities, and the virtual platform. Only one common challenge was identified – the lesson plans. And that one challenge seemed multi-faceted, i.e., the lesson plan format/template, the construction of the lesson plans, a lack of clarity of how to integrate self-efficacy and growth mindset strategies into the plans, how to

implement such strategies as part of classroom instruction, and how to focus on real-world applications. Project staff also perceived collaboration itself as a challenge, in that teachers may be more used to collaboration for sharing what they already know/use versus collaboration for creation and development.

L**evel of Implementation Fidelity**. The RMIN project appears to have made great strides in terms of implementation for two of the three key components in Year 1. The principal and teacher training/support components were both implemented with high fidelity, which bodes well for providing a solid foundation on which participants can build as the project continues. The third component, the teacher cohort development work, did not quite meet the threshold for high fidelity (i.e., 68% instead of the 80% benchmark), but this is not unexpected for two reasons. First, this was the first year of the project, so it is expected that teachers' ratings on particular educational beliefs/perceptions would leave room for growth as those beliefs change over time. Second, given the extension to the lesson plan development timeline, most teachers did not complete activities tied to four of the indicators identified within this component.

We encourage you to read the evaluation report to learn more about teacher practices and behaviors, as well as other evaluation results. We conclude this first Rural Math Innovation Network (RMIN) newsletter with some quotes by teachers (or evaluator as noted) on key topics in the Year 1 annual evaluation report.

Influence on Students' Social-Emotional Learning

My students are enjoying not just doing the work or listening to the lectures; they participate and ask for more activities that are hands-on, which is good. So they're really engaged with it.

One day last week, we were doing some problems and I had one student cheering because he got the right answer and another one cheering because he never gave up.

Students are encouraging each other more, which is awesome.

I have mixed success—not really because of the material, it's just that I have so many students that don't have success in the past and have not had support and they just have such a low perspective. It's been challenging winning them over.

Real-World Math Applications

I think the real-world applications are really important because I know, in the past, I've heard a lot, 'When are we going to use this in real life?' so it's nice to show them and let them experience how they're going to use it in the real world.

Making teachers more focused on 'teaching' math instead of 'telling' math. Some teachers just tell students how to do the math but if we teach them the applications, they will know how to use the math and understand it better.

Making those real world connections because students are more engaged when they find meaning and applications to concepts being learned in the classroom.

Project's Facilitating Activities

The VASS staff is definitely willing to work with us and they're very encouraging.

The support from [project staff] and their willingness to answer questions is really important to have.

The use of webinars and using those as a way to connect everyone without having an in-person session has really been a facilitating factor.

We've had some great information come from the webinars that we've done and the group discussions and being able to collaborate with other teachers.

I'd say the DACUM session was a big facilitator in helping me get started.

It [the DACUM session] *really helped settle my fears about my own inability to frame and to follow that process.*

I wrote my first lesson plan the next day [after a DACUM session] *because I understood what I could relate* it *to in my classroom. I had a good idea for a hands-on activity.*

RMIN teachers in the second training along with facilitators Jennifer Stevens and Sandy Wilborn.

RMIN STAFF

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