



Evaluation of the VASS Rural Math Innovation Network (RMIN) i3 Project, Year 1 (January 1 – December 31, 2017)

January 30, 2018

Submitted to:

Virginia Advanced Study
Strategies, Inc. (VASS)

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Executive Summary

The Rural Math Innovation Network (RMIN) is a 4-year project that launched in January 2017 after receiving a \$2.9 million i3 development grant from the U.S. Department of Education (ED) and matching funds from the private sector. Virginia Advanced Study Strategies, Inc. (VASS) and rural local education agencies (LEAs) in Virginia are implementing a project using a networked improvement community (NIC) of Pre-Algebra and Algebra 1 teachers to incorporate social-emotional learning (SEL) factors of academic self-efficacy and growth mindset into lesson plans for teaching career readiness math competencies.

During Year 1, the project established Memos of Understanding with 18 school divisions in southwest and southside Virginia, which enabled math teachers within these divisions to submit applications to participate in the project. As of December 2017, the project has a 34-member teacher cohort (21 middle school teachers and 13 high school teachers) across 25 schools (14 middle schools and 11 high schools) within the participating divisions. Twenty of the 34 teachers are located in the southside region, with the remaining 14 teachers located in the southwest region of Virginia.

One of the i3 requirements is to have an external evaluation conducted of the project; development grants must include both an implementation study and an impact study. To fulfill this requirement, VASS hired ICF to conduct an independent evaluation of the RMIN project throughout the 4-year period. 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.

Formative evaluation questions include:

- What are participants' reactions to the RMIN project?
- How did the RMIN project affect participants' learning?
- What effects did the RMIN project have on participants' behaviors?
- To what extent is the RMIN project sustainable?
- What effects did the RMIN project have on students' non-cognitive social-emotional learning (growth mindset and math self-efficacy)?

Implementation questions include:

- What are the key components of the RMIN project, and are they implemented as planned?
- What factors served as facilitators or challenges to the RMIN project?

The evaluation team developed and administered a 2-page feedback form to principals on the second day of the July 2017 summer training institute, just prior to their departure. The form consisted of forced-choice and open-ended items focused on engagement/relevance, satisfaction, and knowledge. A total of 25 principals attended the training institute, and 21 (84%) completed a feedback form.

Similarly, a 6-page feedback form was developed and administered to teachers on the last day of the training institute, just prior to their departure. The form consisted of forced-choice and open-ended items focused on engagement/relevance, satisfaction, knowledge, skills, confidence,

and follow-up. A total of 30 teachers attended the training institute, and 100% completed a feedback form.

To provide teachers with an opportunity to provide their feedback about their experiences with the RMIN project, the evaluation team scheduled and conducted four group sessions (two afternoon and two evening) so that teachers could select a date/time that best fit their schedules. These group sessions were conducted using the GoToWebinar online platform, and each session was facilitated by a member of the evaluation team. All four sessions were conducted between October 30 and November 2, 2017. A total of 32 of the 34 teachers (94%) participated in one of the four 90-minute sessions. In addition, five key RMIN project staff were interviewed by telephone in October 2017 to secure their perceptions of project implementation in Year 1.

The evaluation team launched a 75-item teacher survey on November 6, 2017 using the SurveyMonkey online platform. The first section (50 items) focused on teachers' educational beliefs and perceptions; the second section (25 items) focused on their instructional practices and behaviors. All 34 teachers (100%) completed the survey, which will be administered annually to track trends and changes in teachers' beliefs/practices throughout their participation in the RMIN project.

The purpose of the Year 1 Annual Evaluation Report is to integrate and summarize key findings from the formative and implementation studies, and to generate overall conclusions and associated recommendations for project staff's consideration. The primary audience is the RMIN project staff at VASS; secondary audiences include ED and other interested stakeholders.

Findings are presented across data sources, aggregated to an overall level, for both formative and implementation evaluation findings. Each section is framed by the respective questions. Conclusions pertaining to the RMIN project's overall performance in Year 1 are organized by the formative and implementation evaluation questions as well. These conclusions are derived from analysis of available data sources from the Year 1 evaluation activities. Bulleted recommendations follow each section, as appropriate, for project staff's consideration as Year 2 implementation gets underway. These recommendations emerge from the evaluation data, and are offered merely as suggestions for RMIN project staff as they continue their planning and decision-making related to project implementation.

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.

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.

- Project staff may want to consider the ways in which they are keeping principals updated about the project and engaged in providing necessary support for their participating teachers. Maintaining some type of regular communication with and amongst the principals should help foster a system of support, but determining what level of support is necessary for principals seems to be an area that project staff still need to resolve. Once those decisions are made, then possible communication strategies might include individual or group follow-ups so that principals can interact and share with one another how they are supporting their participating teachers.
- Continuing intensive work with teachers on all areas related to the lesson plan is suggested, i.e., the format and development, the collaborative interaction/feedback, and how to explicitly integrate the self-efficacy, growth mindset, and real-world math applications into the plans. The lesson plan is a linchpin around which the teacher network centers; therefore, helping teachers mitigate their concerns in this area should help ensure their success in Year 2, as lesson plans are developed and implemented. For example, staff might consider creating a tentative schedule for Year 2 project activities and deadlines to help teachers better understand the scope of their involvement in the coming year.

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.

- Ongoing thinking about how to best support participants in Year 2 will help ensure they continue to increase their knowledge and skills, sustain the progress they have made, and begin translating new knowledge and skills into their instructional practices. Specifically, as teachers get more involved in the lesson plan development work, it appears they may need additional support related to requesting and providing feedback on lesson plans and video-recorded classroom instruction.

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.

- Project staff might want to consider how to maintain the high levels of engagement amongst participating teachers. Suggestions might include identifying teacher

“champions” of the project who could help support less-engaged teachers and holding periodic “check-ins” to identify any specific areas of need.

- Project staff might also want to focus their support early in Year 2 on the observation component of the project. That might include various aspects, such as the mechanics of using the virtual platform, how to work within their small groups, how to use the technology to record and upload videos, and how to provide meaningful feedback on lesson plans and classroom instruction videos.

Project sustainability. As Year 1 ended, the project has started laying the groundwork for future sustainability by creating the teacher and principal networks, and providing the infrastructure for supporting the teacher collaboration (i.e., the project itself and the virtual platform supporting it).

- As the project continues in Years 2-4, project staff could work with teachers and principals to identify other possible funding opportunities that could cover costs associated with network infrastructure supports after the project closes. And, as teachers become more self-actualized in terms of innovatively solving their own problems of practice throughout their NIC participation, they may have ideas and suggestions for how teacher involvement in such a network could be supported within their schools and divisions.

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.

- Project staff might consider having participating teachers implement some quick assessment activity to informally capture students’ feedback about these aspects of teachers’ classroom practices, as well as their beliefs related to growth mindset and self-efficacy. The evaluation team will administer a pre/post student survey in subsequent project years to capture students’ perceptions about their own growth mindset and self-efficacy, but having continual feedback from students throughout the classroom period (semester or year) may provide teachers with real-time insights that could more immediately shape their instructional practices.

Key components of project. Project staff and teachers were in agreement that two key components of the RMIN project are the lesson plans and the network. Both of these components map onto one of the main key components identified for the implementation study, i.e., the teacher cohort development work. However, in order for work to move forward in the project’s NIC and lesson plan efforts, a level of foundational knowledge was necessary for both principals and teachers. Therefore, principal training/support and teacher training/support were also identified as key components.

- As project staff plan for the Year 2 summer training institute, they might consider adding sessions on topics that principals and teachers identified as being of primary importance; for example, time for principals to share with each other particular strategies or tactics they are employing to provide support and time for teacher sessions focusing on the observation activities related to providing and receiving feedback on lesson plans and the implementation of those plans.

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.

- Project staff might consider how they can further clarify and solidify for teachers the concept of the RMIN project as an opportunity for the teachers themselves to collaboratively operate within the NIC environment for their own development efforts. Fostering such an environment of empowerment, within a safe space for taking risks and being vulnerable amongst peers, is a tenant of the RMIN project, and teachers need to “get” this philosophical shift from perhaps more typical collaborative sharing experiences.

Level 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.

- The evaluation team and project staff should discuss how to better ensure that participants fully complete data collection instruments, such as the institute feedback form and the teacher survey, so that there is less chance of losing indicator data by non-responses.
- The evaluation team should meet with project staff early in Year 2 to determine the indicator language for the first five activities in the teacher cohort development work component. These indicators should mirror the major activities the teachers will be engaging in during Year 2, i.e., the number of lesson plans to be developed, the number of peer critiques of lesson plans, the number of video-recorded implementation of the lesson plans, the number of peer critiques of lesson plan implementation, and any activity that might replace the modified DACUM session participation from Year 1.

Introduction

Established in 2009 under the American Recovery and Reinvestment Act, the Investing in Innovation (i3) fund promotes public and private investments in local education agencies (LEAs) and non-profit organizations to improve student achievement and attainment in low-income communities, and create an education sector supportive of the rapid development and adoption of effective solutions.¹ These competitive grants are awarded to school districts, nonprofit organizations working with districts, or a consortium of schools with a record of improving student achievement and attainment, and demonstrated public-private commitments.

RMIN Project Overview

The Rural Math Innovation Network (RMIN) is a 4-year project that launched in January 2017 after receiving a \$2.9 million i3 development grant from the U.S. Department of Education (ED) and matching funds from the private sector.² Virginia Advanced Study Strategies, Inc. (VASS) and rural LEAs in Virginia are implementing a project using a networked improvement community (NIC) of Pre-Algebra and Algebra 1 teachers to incorporate social-emotional learning (SEL) factors of academic self-efficacy and growth mindset into lesson plans for teaching career readiness math competencies. The RMIN objectives include:

1. To prepare all teachers in the NIC to innovate lesson plans with SEL strategies that address self-efficacy and growth mindset needs of students for learning mathematics required in STEM-H technician careers;
2. To provide supports for each teacher in the NIC to innovate 5 SEL math lessons and implement 10 SEL math lessons into instruction;
3. To establish technology capacity for NIC teachers to develop and implement SEL math lessons;
4. To achieve a student passage rate increase of 25% on the career readiness math assessments: Virginia Pre-Algebra test, Virginia Algebra 1 test, Work Keys math test, and Virginia Community College math assessment; and
5. To broadly disseminate information that results in four schools as teacher innovation sites and a 125% increase in the NIC math teacher membership.

During Year 1, the project established Memos of Understanding with 18 school divisions in southwest and southside Virginia, which enabled math teachers within these divisions to submit applications to participate in the project. As of December 2017, the project has a 34-member teacher cohort (21 middle school teachers and 13 high school teachers) across 25 schools (14 middle schools and 11 high schools) within the participating divisions. Twenty of the 34 teachers are located in the southside region, with the remaining 14 teachers located in the southwest region of Virginia.

¹ See <https://www2.ed.gov/programs/innovation/index.html>

² See http://docs.wixstatic.com/ugd/19fc5e_55a5434194304978bcc6f1f88e4a80d8.pdf

RMIN Evaluation

One of the i3 requirements is to have an external evaluation conducted of the project; development grants must include both an implementation study and an impact study. To fulfill this requirement, VASS hired ICF to conduct an independent evaluation of the RMIN project throughout the 4-year period. The evaluation includes three components: a formative study, an implementation study, and an impact study.

The formative study provides project staff with ongoing feedback as the teachers participate in the RMIN project. These findings can be used to make programmatic adjustments as needed to better meet participants' needs. The formative focus is on participants' reactions, learning, behaviors, and results. This study will be carried out all four years.

The implementation study investigates how well the structural and programmatic aspects of the RMIN project are being implemented, i.e., the fidelity of implementation. Fidelity focuses on adherence, dosage, quality of delivery, and participant responsiveness. This study will be carried out in the first two years of the RMIN project.

The impact study determines the extent to which the project impacts high-need students' math achievement. This study employs a quasi-experimental design with comparison teachers so that the math achievement of students within treatment or comparison classrooms can be examined. This study will be carried out beginning in Year 2.

The purpose of this Year 1 Annual Evaluation Report is to integrate and summarize key findings from the formative and implementation studies, and to generate overall conclusions and associated recommendations for project staff's consideration. The primary audience is the RMIN project staff at VASS; secondary audiences include ED and other interested stakeholders.

Evaluation Design and Methodology

Evaluation Design

As noted earlier, ICF is conducting an external evaluation of the RMIN project that includes a formative study to provide ongoing feedback, an implementation study to investigate fidelity, and an impact study to determine the project impact on students' math achievement outcomes. Evaluation results include teacher outcomes of knowledge (educational beliefs/perceptions) and skill (instructional practices/behaviors), and student outcomes of knowledge (perceptions of math self-efficacy and growth mindset) and skill (math academic achievement).

Formative Evaluation

The formative evaluation focuses on participants' reactions, learning, behaviors, and results. This study provides RMIN project staff with ongoing feedback as the teachers participate in the project. In order to get evaluation data to the RMIN project team in a timely manner for continuous improvement purposes, the evaluation team develops and disseminates evaluation briefs, following each data collection activity, that present highlights of key results. RMIN project staff can use these briefs to make programmatic adjustments as needed to better meet participants' needs. Formative questions include:

- What are participants' reactions to the RMIN project?
- How did the RMIN project affect participants' learning?
- What effects did the RMIN project have on participants' behaviors?
- To what extent is the RMIN project sustainable?
- What effects did the RMIN project have on students' non-cognitive social-emotional learning (growth mindset and math self-efficacy)?

As part of the formative evaluation, the evaluation team participated in various project activities during Year 1. These activities included the following:

- Participation in the ED i3 meeting in Washington, DC, in July 2017
- Participation in the RMIN summer training institute in Roanoke, VA, in July 2017 (including a brief presentation on the evaluation to teachers and principals, and a more in-depth evaluation presentation to teachers)
- Participation in the Advisory Leadership Team annual meeting in Christiansburg, VA, in December 2017 (including a presentation on evaluation findings and project challenges)
- Facilitation of the Year 1 Evaluation Retreat in Christiansburg, VA, December 2017
- Participation in monthly conference calls with RMIN project staff
- Participation in monthly internal ICF evaluation team meetings, and in conference calls with the i3 evaluation technical assistance liaison

Implementation Evaluation

The implementation study explores how well the structural and programmatic aspects of the RMIN project were implemented, as well as identifying facilitating or impeding factors. Implementation questions include:

- What are the key components of the RMIN project, and are they implemented as planned?
- What factors served as facilitators or challenges to the RMIN project?

The implementation study focuses heavily on intervention at the teacher level, recognizing that without project implementation at a high level of fidelity for the teachers, it is unlikely to see the desired outcomes occurring. That is, intermediate outcomes of students' growth in the social-emotional learning areas of growth mindset and math self-efficacy following teachers' inclusion of such strategies in their developed and implemented lesson plans serve as a mediator or precursor to the long-term desired outcome of students' increased math achievement.

Impact Evaluation

The impact study will begin in Year 2, after participating teachers have received initial training and have had time to gain the requisite knowledge and skills to carry out their RMIN responsibilities. Comparison teachers and their classrooms will be selected based on matching at the teacher and student levels. The evaluation team will begin recruiting and selecting comparisons in Fall 2018, and will secure students' math achievement data from the Virginia Department of Education. Starting in Year 2, math achievement data will be secured for cohort 1 students (school year 2018-19) and cohort 2 students (school year 2019-20). Pretest scores will be comprised of each cohort's math achievement scores from the previous year (i.e., 2017-18 math scores for cohort 1), and posttest scores will be comprised of each cohort's math achievement scores from the current year (i.e., 2018-19 math scores for cohort 1). The impact study includes both exploratory and confirmatory questions:

Exploratory

- What is the effect of one year of exposure to the RMIN intervention on the math achievement of Pre-Algebra takers compared to the math achievement of Pre-Algebra takers in the business-as-usual condition in Project Year 2?
- What is the effect of one year of exposure to the RMIN intervention on the math achievement of Algebra I takers compared to the math achievement of Algebra I takers in the business-as-usual condition in Project Year 2?

Confirmatory

- What is the effect of one year of exposure to the RMIN intervention on the math achievement of Pre-Algebra takers compared to the math achievement of Pre-Algebra takers in the business-as-usual condition in Project Year 3?
- What is the effect of one year of exposure to the RMIN intervention on the math achievement of Algebra I takers compared to the math achievement of Algebra I takers in the business-as-usual condition in Project Year 3?

Data Methods and Analysis

A set of mixed-method data collection techniques and data sources contributes to the RMIN evaluation and are used to answer the evaluation questions. Instruments were developed by the ICF evaluation team, with feedback from the RMIN project staff. Specific methods are described in further detail below.

Principal Feedback Form

The evaluation team developed and administered a 2-page feedback form to principals on the second day of the July 2017 summer training institute, just prior to their departure. The form consisted of forced-choice and open-ended items focused on engagement/relevance, satisfaction, and knowledge. A total of 25 principals (or their representatives) attended the training institute, and 21 (84%) completed a feedback form.

Descriptive statistics were generated for the forced-choice (rated) items, including frequency percentages, means, and standard deviations. Open-ended comments were provided verbatim. See Appendix A for a copy of the evaluation brief for the principal feedback form data.

Teacher Feedback Form

Similarly, a 6-page feedback form was developed and administered to teachers on the last day of the July 2017 summer training institute just prior to their departure. The form consisted of forced-choice and open-ended items focused on engagement/relevance, satisfaction, knowledge, skills, confidence, and follow-up. A total of 30 teachers attended the training institute, and 100% completed a feedback form.

Descriptive statistics were generated for the forced-choice (rated) items, including frequency percentages, means, and standard deviations. Open-ended comments were provided verbatim. See Appendix B for a copy of the evaluation brief for the teacher feedback form data.

Teacher Interview

To provide teachers with an opportunity to provide their feedback about their experiences with the RMIN project, the evaluation team scheduled and conducted four group sessions (two afternoon and two evening) so that teachers could select a date/time that best fit their schedules. These group sessions were conducted using the GoToWebinar online platform, and each session was facilitated by a member of the ICF evaluation team. All four sessions were conducted between October 30 and November 2, 2017. A total of 32 of the 34 teachers (94%) participated in one of the four 90-minute sessions. Questions focused on overall reactions, knowledge/beliefs, instructional practices, facilitating and impeding factors, most important aspects of the project, how growth mindset/self-efficacy/real-world applied math strategies are being integrated into teaching practices and associated challenges, principal support, student reactions, suggestions for improvement, and miscellaneous comments.

All four sessions were audio-recorded, and a transcript generated for each session. Interview data were analyzed thematically to identify trends/patterns in teachers' responses to the questions. These qualitative data provide contextual details about participants' experiences, in their own words, that add meaning and richness to the quantitative results. See Appendix C for a copy of the evaluation brief for the teacher interview data.

Project Staff Interview

Five key RMIN project staff were interviewed by telephone in October 2017 to secure their perceptions of project implementation in Year 1. These 30- to 60-minute interviews included questions focusing on overall reactions, teacher experiences, principal support, key project components and their implementation, project changes, facilitating and impeding factors, perceptions on sustainability, and miscellaneous comments. These data were analyzed thematically to identify trends/patterns in staff's responses to the questions. See Appendix D for a copy of the evaluation brief for the principal interview data.

Teacher Survey

The evaluation team launched a 75-item survey on November 6, 2017 using the SurveyMonkey online platform. The first section (50 items) focused on teachers' educational beliefs and perceptions; the second section (25 items) focused on their instructional practices and behaviors. All 34 teachers (100%) completed the survey, which will be administered annually to track trends and changes in teachers' beliefs/practices throughout their participation in the RMIN project.

Descriptive statistics were generated for the items, including frequency percentages, means, and standard deviations. Subscales were generated for each section of the survey. For the first section (beliefs), the subscales included applied math, collaboration, growth mindset, innovation, observation, self-efficacy, and technology. For the second section (practices), subscales included growth mindset, innovation, lesson plans, observation, self-efficacy, and a joint self-efficacy/growth mindset subscale for items that were closely aligned to each of these two constructs.

Survey items were either developed by the ICF evaluation team or were included verbatim or modified from a number of relevant survey sources that focused on relevant constructs, i.e., professional learning communities, teacher collaboration, teacher technology, self-efficacy, and growth mindset. Based on the small sample of 34 RMIN teachers, the average reliability value for subscales consisting of multiple items was .68. When all survey items were considered as one total scale, a reliability estimate of .96 was achieved. The same value was derived for the first section consisting of 50 items focusing on teachers' educational beliefs. For the second section (25 items focusing on teachers' instructional practices), a reliability estimate of .88 was achieved. See Appendix E for a copy of the evaluation brief for the teacher survey data.

Protection of Human Subjects

The ICF evaluation team prepared and submitted a Project Submission Form to the ICF Institutional Review Board (IRB) for review, and the project was approved. Modifications will be submitted to the IRB as data collection instruments are finalized and ready for use. Approval was received for all of the Year 1 data collection activities. Signed consent was obtained from the teachers that covered their participation in the evaluation activities throughout the 4-year project. Signed consent was also secured for the key RMIN project staff for their participation in annual phone interviews. Signed consent was not necessary for the principals given their only involvement in evaluation data collection is the training institute feedback form, which is completed anonymously.

Findings

The following sections provide evaluation findings across data sources, aggregated to an overall level, for formative and implementation evaluation findings. Each of these two sections are framed by the respective evaluation questions. This summary is based on data from the training institute feedback forms, the teacher interviews, the RMIN project staff interviews, and the teacher survey. As noted earlier, the number of participants included 25 for the principal feedback form, 30 for the teacher feedback form, 32 for the teacher interviews, 5 for the project staff interviews, and 34 for the teacher survey.

Formative Evaluation Findings

Participant Reactions

To assess participants' reactions to the project, findings are presented for principals and teachers. Principal data come from their participation in the summer training institute, and from anecdotal comments shared by teachers or project staff during their interviews at the end of the year. Teacher data come from their participation in the training institute, the group interviews, the teacher survey, and from anecdotal comments shared by project staff during their interviews.

Principals' reactions. 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. Principals provided suggestions for improving the training and follow-up support. Specifically, they wanted more information about the RMIN project purpose, mission/vision, goals/objectives, and outcomes, and what made the project "innovative." They also asked for more concrete suggestions/strategies for supporting their teachers in the project. Finally, they requested more information about what specific activities the teachers would be undertaking, as well as more joint time with their teachers during future institutes.

Project staff estimated that about 75% of the principals were making a good effort to provide support to participating teachers. Staff reported that principals initially helped teachers with getting permission slips from parents (for video-recording their classroom instruction) and getting technology support. As the project moved forward, the majority of the principals touched base with teachers on a regular basis and helped them connect with the information technology department, and coordinated teachers' time off for participating in a modified face-to-face DACUM session (one of the RMIN project activities). Staff indicated that some of the principals had held discussions with their teachers about growth mindset and self-efficacy concepts.

Teachers reflected that some principals were more hands-off or had less understanding of the purpose of the RMIN project. Most teachers did not believe their principals had a large role in the project and a few expressed concerns that their principals may be more involved than they needed to be. In addition, project staff conceded that principals may not have left the institute with "concrete ways" to help support teacher innovation. Finally, project leadership is striving to find the right balance between providing more clarity for principals without being overly directive.

Teachers' reactions. 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. Teachers indicated the need for clarity about expectations around timelines and lesson plans. Although

nearly half of the teachers asked for additional explanation and follow-up around the application of self-efficacy and growth mindset strategies, they were excited to implement these strategies. They were less confident about implementing lesson plans, with 30% indicating the need for understanding what “good” looks like in RMIN math lesson plans.

During the group interviews, teachers reported that they were excited to be part of the project and that it has been a positive experience, both “inspiring” and “challenging.” One teacher said, “The summer session was some of the best professional development I’ve ever received.” A few noted the project had been “slow to start” and that everyone was “not on the same page” on project expectations, especially related to the lesson plans.

Some teachers remained uncertain about creating a lesson plan with one remarking, “I’m a little hesitant to actually jump in there and do one. I’m afraid it won’t be very good.” Nevertheless, there was consensus that the modified face-to-face DACUM session helped them move forward with developing a lesson plan. One commented, “I wrote my first lesson plan the next day, because I understood what I could relate it to in my classroom. I had a good idea for a hands-on activity.”

Teachers also reflected on the value they saw in focusing on growth mindset and real-world math. One pointed out that the project was “helping me to become more mindful of those things.” Others noted that their students are engaged and responding well to the real-world examples.

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.”

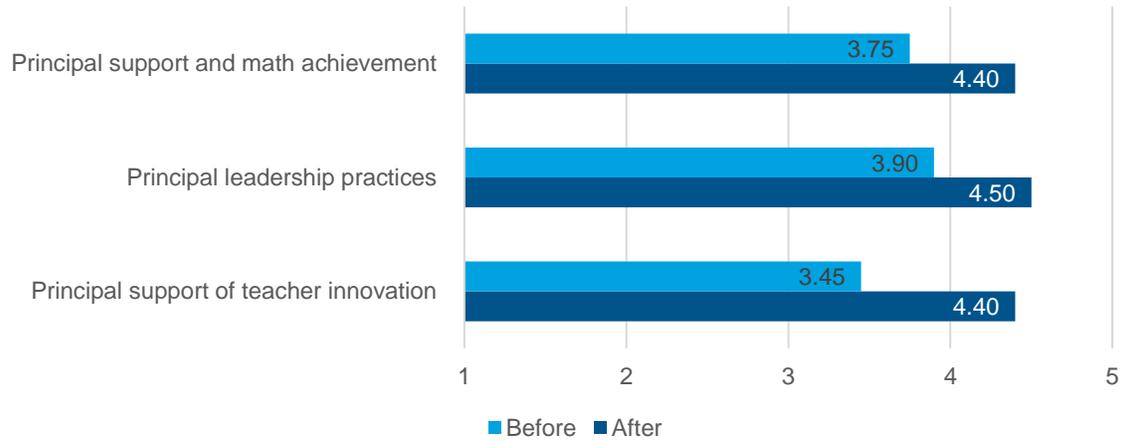
These opinions were mirrored by project staff’s perceptions. During their interviews, staff commented that the majority of teachers were “enthusiastically participating” and “very involved and interested.” As expected, some teachers were excelling and have emerged as “teacher leaders” (early adopters), some were moving along at a typical pace (average), and there were a few who could use a little extra support (stragglers). For the most part, the project is getting “great positive feedback from the teachers.”

Participant Learning

To assess how the project affected participants’ learning, findings are presented first for principals, then for teachers. Principal data come from their participation in the summer training institute. Teacher data come from their participation in the summer training institute, the survey, and the group interviews.

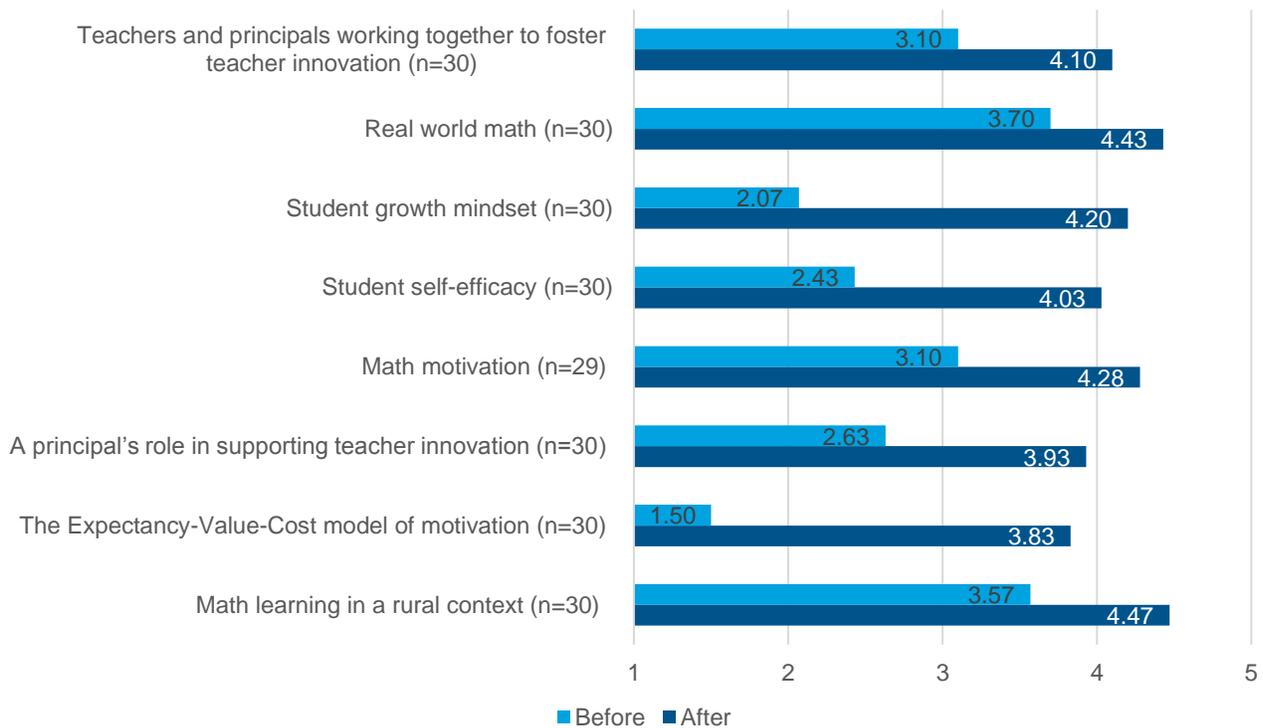
Principals’ learning. Results from the principal summer training institute feedback form indicated that they had gained knowledge in three areas after the training (see Figure 1). Mean scores increased from pre (start of institute) to post (end of institute) by as much as nearly a point on a 5-point scale for principal support of teacher innovation, with 1 meaning “no understanding of the topic” and 5 “very much understand the topic.” While all three post mean scores were very similar, principal leadership practices was the highest rated at 4.50.

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



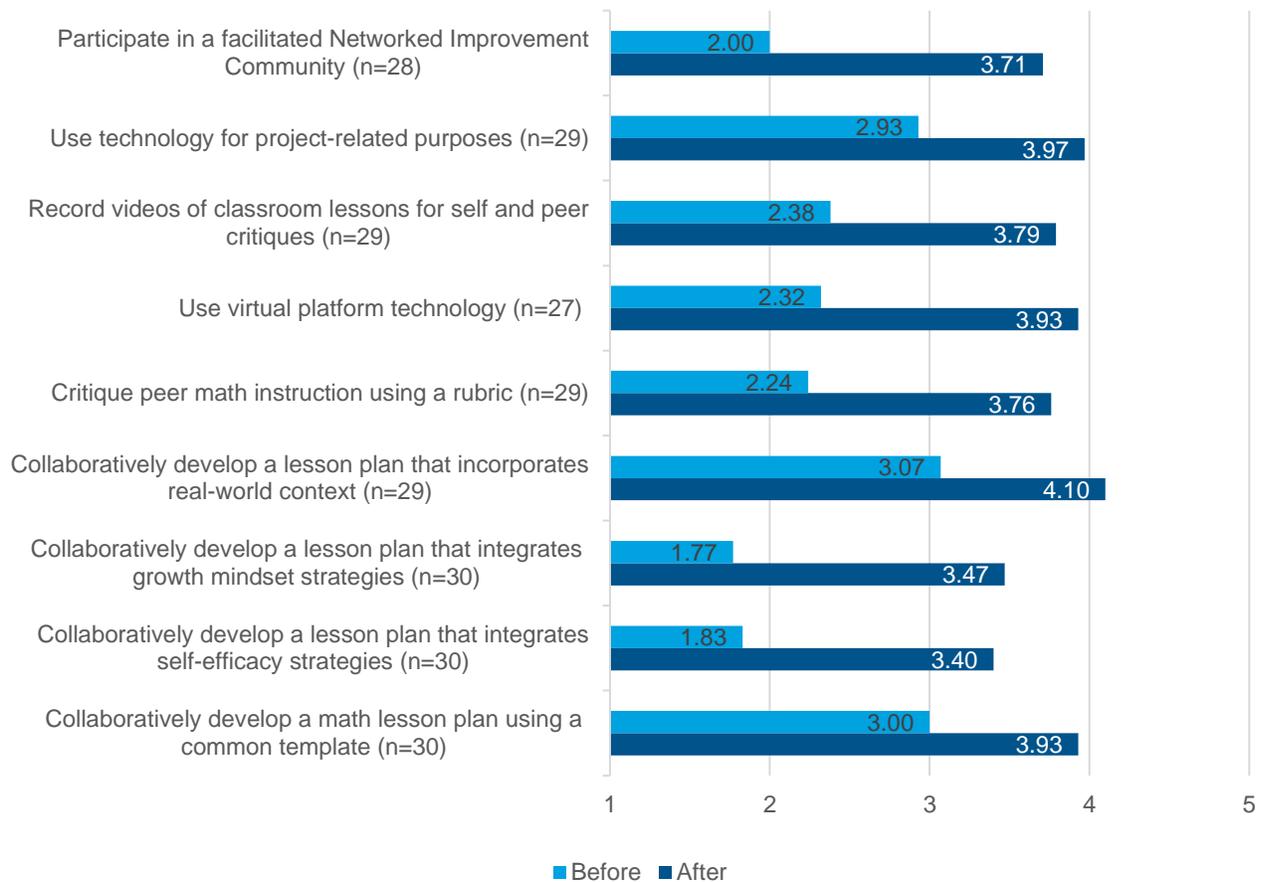
Teachers' learning. Results of the teacher summer training institute feedback form indicated that they have gained knowledge in all eight key topic areas after the training (see Figure 2). Mean scores increased from pre (start of institute) to post (end of institute) by as much as 2.33 for the Expectancy-Value-Cost 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



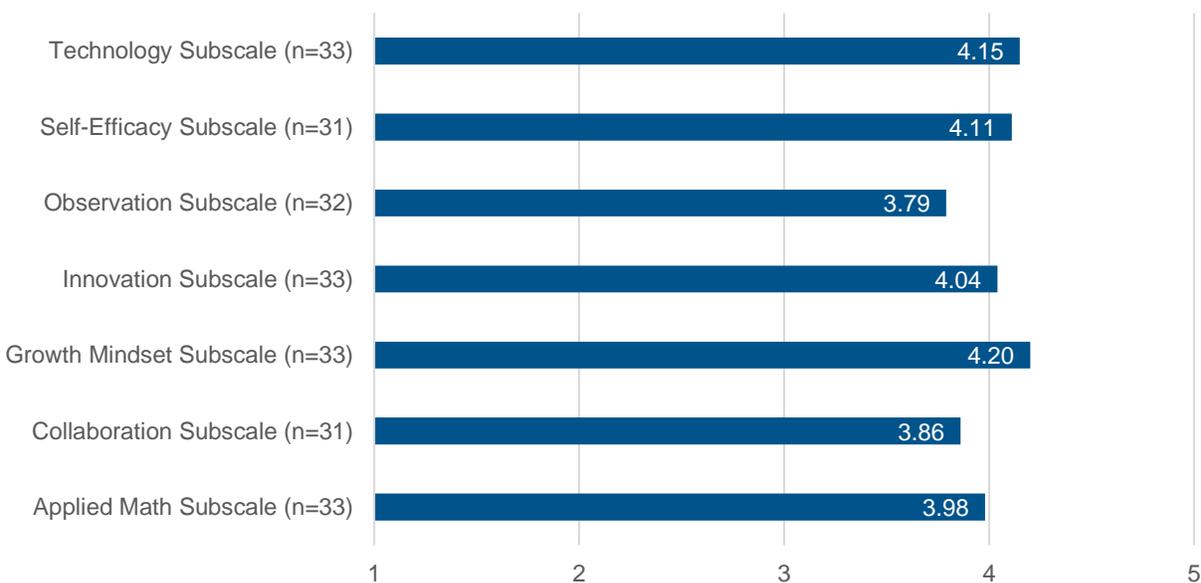
The teacher survey focusing on their educational beliefs and instructional practices was administered in Year 1 to set a baseline so that changes can be tracked over the 4-year period for the teacher cohort. However, the Year 1 data does reveal teachers’ initial levels of agreement with a number of relevant belief items organized into seven subscales.

The first section of the survey focuses on teachers’ beliefs and perceptions, and includes 48 items categorized into seven subscales, plus two miscellaneous items. A sample item is provided below to help illustrate each subscale; for complete details on the items within each subscale, see Appendix E.

- Applied Math subscale: “Integrating real-world applied math strategies into my teaching will improve my instructional practices.”
- Collaboration subscale: “In the RMIN project, there is a culture of peer collaboration among teachers that includes encouraging individual growth.”
- Growth Mindset subscale: “Fostering students’ growth mindset in math is part of my job responsibilities.”
- Innovation subscale: “As an RMIN teacher, I am eager to try new ideas.”
- Observation subscale: “I know how to record videos of my classroom instruction for critiquing by other RMIN teachers.”
- Self-Efficacy subscale: “Fostering students’ math self-efficacy is part of my job responsibilities.”
- Technology subscale: “I have been provided with appropriate technology (i.e., iPad and Torsh Talent platform) to fulfill my RMIN responsibilities.”

As shown in Figure 4, mean scores are all fairly high, indicating agreement with all seven subscales, ranging from a low of 3.79 (observation) to a high of 4.20 (growth mindset) on a 5-point scale of 1 (strongly disagree) to 5 (strongly agree). Although not shown in the figure, it is worth noting that none of the item-level means for the items comprising each subscale were below 3.50.

Figure 4. Teacher Beliefs/Perceptions in Year 1



During the group interviews, teachers also reported that the RMIN project is increasing their knowledge and beliefs, specifically about growth mindset and self-efficacy. One teacher noted, the project “reminds me to be always mindful of what I’m doing, what’s in the classroom, poster- and bulletin-wise . . . it challenges me to think about what I say to students as I model growth mindset.”

For some teachers, the project is reaffirming what they have been doing and challenging them to think outside the classroom and connect to the real world by pulling in outside resources from websites such as YouTube. One teacher said, “I’m finding myself not only searching for the one lesson plan to write for the project, but I’m thinking about it as I’m teaching other things as well and trying to find other ideas and concepts so they can apply to real life. It’s kind of changed my mindset . . . to try to make it a little bit more authentic for the students.”

Participant Behaviors

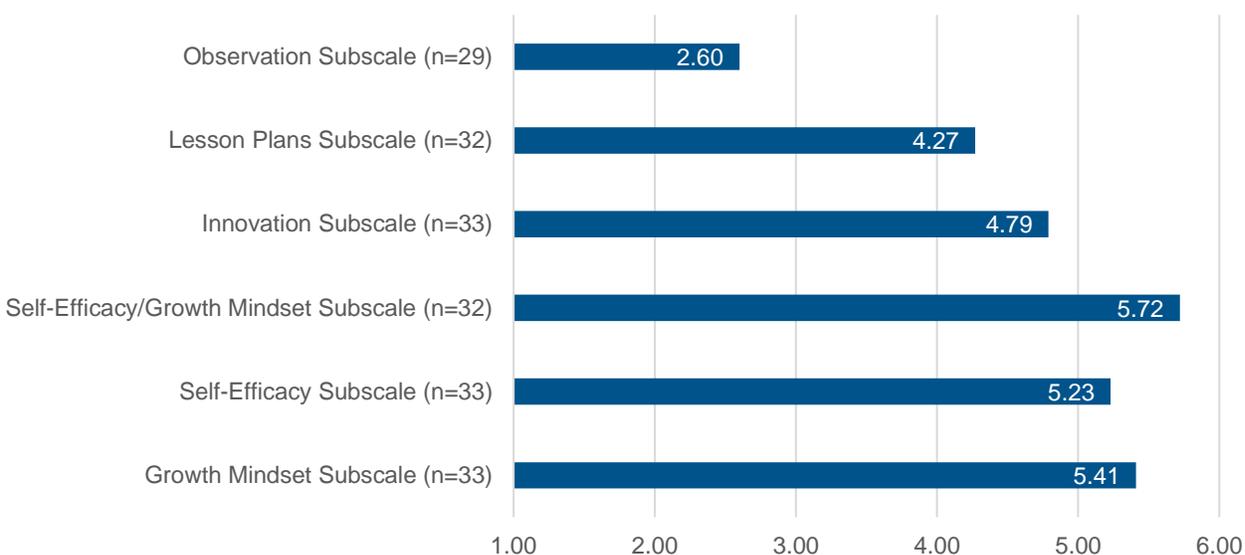
To assess how the project affected participants’ behaviors, findings are presented for teacher data from the survey and the group interviews. The second section of the survey focuses on teachers’ educational behaviors and practices, and includes 23 items categorized into six subscales, plus two miscellaneous items. A sample item is provided below to help illustrate each subscale; for complete details on the items within each subscale, see Appendix E.

- Growth Mindset subscale: “I utilize strategies to create a growth-oriented environment in my classroom.”
- Innovation subscale: “I seek to create new ways of doing things based on my experiences in the RMIN NIC.”
- Lesson Plans subscale: “Using the Torsh Talent platform, I collaborate with one or more RMIN teachers to gain ideas for revising my RMIN lesson plans.”
- Observation subscale: “Using the Torsh Talent platform, I provide feedback to other RMIN teachers on their videos of classroom instruction.”
- Self-Efficacy subscale: “I help students set challenging, yet attainable, learning goals.”
- Self-Efficacy/Growth Mindset subscale: “I provide concrete, realistic feedback to students on what they did well.”

As shown in Figure 5, mean scores are fairly high for five of the subscales, ranging between 4.27 (lesson plans) to 5.72 (self-efficacy/growth mindset), on a 6-point scale of 1 (never) to 6 (at least once a day). However, the observation subscale was much lower at 2.60.

Figures 6-11 depict the items and response frequency percentages for each subscale. Results show that teachers used strategies related to growth mindset and/or self-efficacy most frequently, employing them at least once weekly or even daily. Teachers also incorporated strategies related to innovation and lesson plans frequently, using them at least once monthly, weekly, or even daily. The only exception was for the lesson plans subscale, where about a fourth of the teachers reported having never collaborated with other RMIN teachers to gain ideas for revising lesson plans. The least-employed practices were related to observation, with about a third of teachers never using them while others most likely use them at least once a semester or monthly.

Figure 5: Teacher Practices/Behaviors in Year 1



During the interviews, teachers reflected on how the project impacted their instructional practices in general, as well as specifically how they were integrating growth mindset, self-efficacy, and real-world examples in their classrooms. Overall, they reported using more consistent language throughout their lessons, and including more real-world problems when teaching. One teacher observed, “It’s helping me in changing the way I talk to my kids.” Another stated, “I think it’s also challenging us to really think outside of our mathematical classroom, and really find ways to link this to the real world in a different format than just a basic word problem.” Several teachers spoke to their ability to give better feedback on what they are doing well and what they need to work on.

Many teachers included weekly activities and daily incorporation of growth mindset language, as well as displaying posters in the classroom. One shared, “I know some of the verbiage like if a kid’s struggling, [saying] ‘I don’t understand this,’ then responding, ‘not yet’ or ‘you’re working at it.’” She added, “Those encouraging words that just tell them to keep on keeping on, things of that nature, I use those a lot.” Another observed, “I think a huge piece of it is making mistakes, knowing that it’s okay, but also having the opportunity to fix them.” One teacher described having students play games online before a new unit was introduced, noting that “even though they weren’t really good at first, they were able to build up that confidence and that success.”

Teachers appeared less sure about the concept of self-efficacy. As one noted, “[I’m] still having some difficulty in pinpointing what is, or an example of, self-efficacy.” However, others recognized that growth mindset and self-efficacy are inter-connected. One observed that “Growth mindset has really aided in building self-efficacy in that they [students] look at mistakes differently. And because they realize that mistakes are just a building block in their education, when they make a mistake it doesn’t seem to tear them down the way it did before. They seem to try harder because they know, ‘It’s okay if I mess up.’ It’s not the same fear of failure that they had before.”

For integrating real-world examples, several teachers noted having community speakers visit their classrooms to discuss math used in common vocations; for instance, inviting a local restaurant to do a catering lesson using equations and proportional reasoning. Teachers also used external resources such as online videos, using “things like that for construction sites . . . where we talk about slope that may be occurring or different angles that are used on a job site.”

Figure 6: Teacher Practices/Behaviors: Growth Mindset Subscale Items

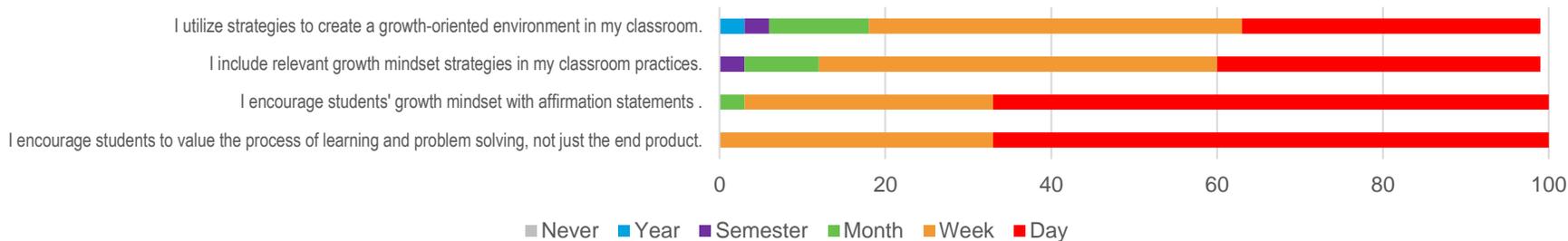


Figure 7: Teacher Practices/Behaviors: Self-Efficacy Subscale Items

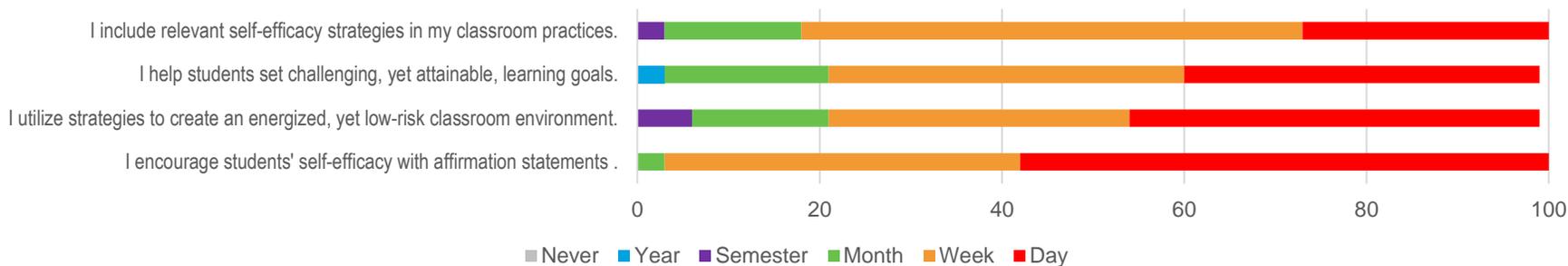


Figure 8: Teacher Practices/Behaviors: Self-Efficacy/Growth Mindset Subscale Items

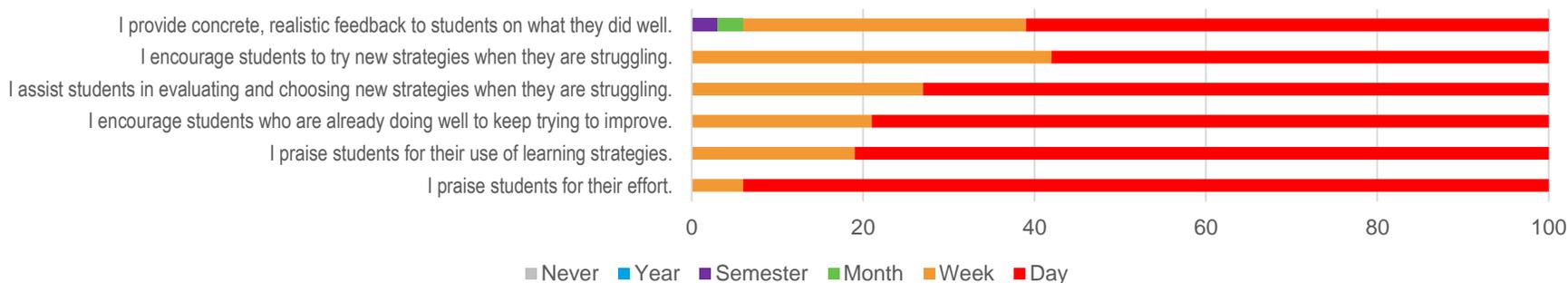


Figure 9: Teacher Practices/Behaviors: Lesson Plan Subscale Items

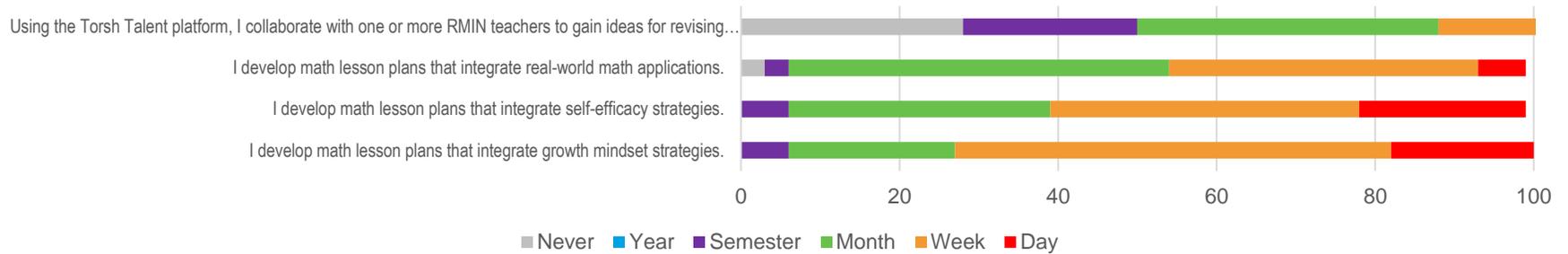


Figure 10: Teacher Practices/Behaviors: Observation Subscale Items

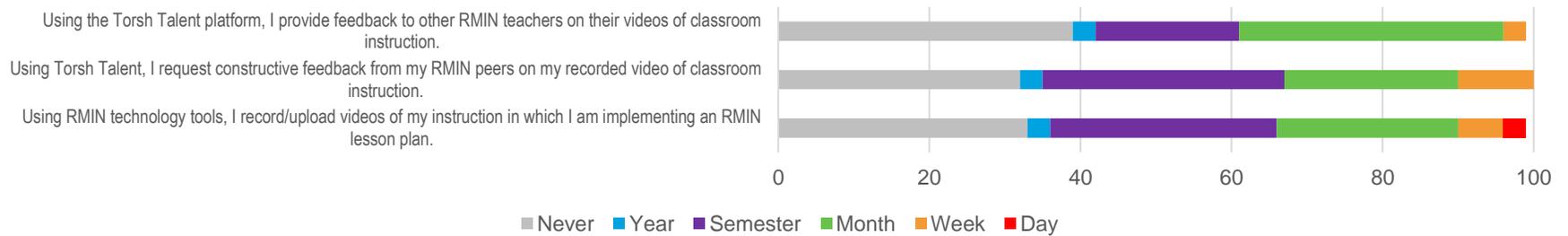
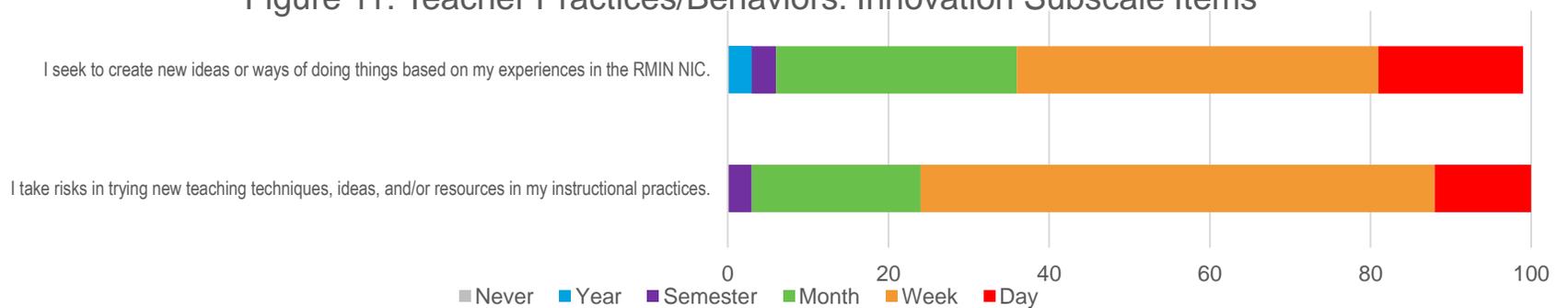


Figure 11: Teacher Practices/Behaviors: Innovation Subscale Items



Project Sustainability

Although the RMIN project will continue over the next three years, it is advantageous for the project to begin building sustainability now so that the network can continue and grow after the project ends. To assess the sustainability of the project, findings are presented from the project staff interviews.

Sustainability by practice. Staff suggested that the more teachers use the self-efficacy and growth mindset language, the more they are “incorporating this into their lessons, which is going to make a big difference in learning.” As teachers see success in sharing and talking across schools, the more likely they are to continue practicing it.

Sustainability by funding support. According to one of the project staff, the concept of a network and providing a space (e.g., a platform and webinar system) for “genuine, authentic collaboration for teachers and doing it more regularly” is critical. For RMIN to be sustainable beyond its grant cycle, it has to identify a funding stream to support “the structures and undergirding support systems.”

Sustainability by self-independence. Staff noted that sustainability is inherent in how well teachers become comfortable with each other and how the RMIN project can evolve and enable facilitators to help them. Many innovation projects are designed for future success to be “co-dependent on outside support rather than more self-independent.” One staff member reflected that both short- and long-term support is critical for innovative projects, and that “having a peer that is moving along with you and learning with you and trying new things with you is a really big deal.”

Influence on Students’ Social-Emotional Learning

To gain preliminary insights about perceived project influences on students’ social-emotional learning (i.e., growth mindset and self-efficacy), findings are presented from the teacher group interviews, during which they were asked to reflect on their students’ reactions to the strategies being introduced into the classroom. Overall, teachers reported that students have been receptive to the strategies and are requesting more hands-on activities. Specific teacher comments include:

- “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.”

However, not all teachers thought their students were as receptive. One teacher reflected, “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.”

Teachers reported that using real world connections in the classroom has also influenced students. In two of the group sessions, teachers mentioned their students were no longer asking, “Why do I need to learn this math?”

Implementation Evaluation Findings

The following section provides a summary of findings for the two implementation questions, similar to the formative findings in the previous section. This is followed by a summary of the level of implementation fidelity, determined through use of a fidelity matrix with indicators aligned to the key components of the RMIN project.

Key Components of Project

To determine what staff and teachers view as the key components of the RMIN project, findings are presented from the teacher and project staff interviews.

Project staff and teachers viewed the lesson plans integrating growth mindset and self-efficacy strategies as a critical element. One teacher highlighted that powerful learning happens from mistakes: “Teaching students to analyze their own errors and learn from their mistakes is the most important part.” Another stated, “I think that the growth mindset for the students is very important because it lets the students know and tries to get them to challenge themselves, to believe in themselves.”

Project staff and teachers viewed the networking aspect of the RMIN project as an important element. The project has created a network that brings together teachers with similar challenges and provides an opportunity for them to collaboratively address those challenges. One staff member reflected, “The main goal of the project was to develop a process by which teachers can innovate solutions to their own problems of practice” through a network approach. One teacher noted, “I think the creation of the network where we will be linked with teachers from other communities, especially communities that have similar challenges . . . once we get comfortable with it, I think that will really be great. It’ll give us a lot of resources and just shared problem solving that we really need.”

Project staff identified the virtual platform as a third key element, necessary to provide the infrastructure to support the project activities and provide teachers and project staff a way to communicate, share resources, and house their created artifacts (such as lesson plans and video-recordings of classroom instruction).

Teachers identified the real-world math application as another key element of the RMIN project. They perceived the math taught within the auspices of RMIN should be a functional, realistic, and applicable type of mathematics involving real-world application of knowledge. Specific teacher comments include:

- “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.”

Facilitating and Challenging Factors

To determine what factors are serving as facilitators and/or challenges to the RMIN project, findings are presented from the teacher and project staff interviews, and the teacher summer training institute feedback form.

Facilitating factors. There was a high degree of consensus among project staff and teachers in identifying common facilitating factors. One such factor was the RMIN project staff and consultants. Project staff noted that the project consultants are in constant communication and they are not only “accommodating to work with project staff” but also have done “way beyond what was expected” in terms of their engagement in the project. Teachers were also quick to note the project staff as a facilitating factor. One teacher commented, “The VASS staff is definitely willing to work with us and they’re very encouraging.” Another said, “The support from [project staff] and their willingness to answer questions is really important to have.”

Project staff and teachers were also in agreement that the project activities served as another facilitating factor. While project staff called out the modified face-to-face DACUM session that was held in four locations for convenient teacher access, teachers identified the webinars and group discussions as well as the DACUM sessions. Specific teacher comments include:

- “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.”

The third common facilitating factor was the virtual platform (Torsh Talent). One project staff member suggested that the vendor chosen turned out to be “an excellent choice.” Teachers also viewed the platform as a facilitator for communicating and sharing, yet at least one teacher viewed it also as a challenge in terms of learning how to use it. This individual stated, “The Torsh platform that you all use, it serves as both [facilitator and barrier]. It aids in sharing of information, but it’s also been a barrier to have to learn how to navigate the platform.” Other facilitating factors noted by project staff include having the right mix of technology and people, the teacher selection process, and having timely evaluation results.

Challenging factors. There was much less consensus between project staff and teachers in identifying impediments to the project. In fact, only one common challenge emerged across both groups—the lesson plans. Project staff perceived that teachers were still “unclear” about how to embed self-efficacy and growth mindset strategies into lesson plans, and then how to promote those in the classroom. Teachers focused more on construction of the lesson plans, and this topic emerged as a challenge both at the beginning of the year at the summer training institute, as well as at the end of the year during the group interviews. Specific teacher comments include:

- “Some of the barriers would be the confusion between teachers as to what exactly we are supposed to be doing with lesson plans.”
- “We’re not getting enough instruction with the lesson plans.”
- “I’m a little hesitant to actually jump in there and do one. I’m afraid it won’t be very good.”
- “Writing lesson plans incorporating self-efficacy and growth mindset.”
- “The only thing that makes me a little anxious [is the lesson plans]. I want to design lessons to enlighten and help my students.”
- “The format of the lesson plan may be challenging in terms of adapting my current lesson planning style.”
- “My biggest personal challenge will be the lesson plans and becoming more mindful of self-efficacy and growth mindset on a daily basis.”
- “Creating the long lesson plans.”

A more loosely associated barrier focuses on collaboration. Project staff reflected that teachers may not be used to the type of collaboration required for the nature of this development project. One staff said, “It’s not about reflection and creating/developing something” but “more about sharing a practice they know and are already using.” One teacher specifically mentioned the lack of small groups for sharing and discussing ideas, which may reflect that different perception of the collaboration required. This individual noted, “I feel alone in doing my lesson plans and not having an example to go on or not having ideas to immediately bounce off of somebody else.”

During the summer training institute, another common challenge identified by teachers focused on the real-world application aspect. Specific teacher comments include:

- “Being able to apply the real world to the content more than I already do.”
- “My biggest challenge is relating some Algebra lessons to real-world context.”
- “I do have concerns about finding real world math problems within Algebra B that fits into the time restraints that we have.”
- “Integrating real world lessons with materials [so] that students would see that what they are studying in the classroom will be used to make them prepare for their targeted job in the future.”

Project staff also noted challenges such as technology issues and how to ensure principals are providing adequate support for teachers. Teachers noted other challenges, such as limited time, other obligations, and the traditional lack of appreciation for math by rural communities. One commented “It’s just the fact that we are in rural counties and math in school is not necessarily appreciated from the get-go, so just the nature of the project is hindering the project.”

Level of Implementation Fidelity

In order for teachers to have the knowledge and skills to use the virtual platform; to develop and implement the lesson plans that integrate self-efficacy, growth mindset, and real-world math; and to function within a NIC, they must first be trained in these areas and then have ongoing support. And, their principals need training and support as well, in order to provide the support their participating teachers need to succeed in this innovative work. Therefore, the evaluation team worked with the technical assistance liaison and the RMIN project staff to identify three key project components that map onto project activities depicted in the RMIN logic model: (1) principal training/support, (2) teacher training/support, and (3) teacher cohort development work. Within each component, a set of indicators have been developed that depict the important activities related to each. A scoring rubric was developed for generating unit-level (principal or teacher) scores depicting implementation levels. These scores are aggregated across indicators within each component to determine whether each participant met a predetermined threshold for “adequate” fidelity. Individual results are then rolled up to denote program-level fidelity scores, which are compared against prespecified definitions of what constitutes “high” fidelity for each component.

Table 1 depicts the key components, the indicators within each component, and whether each component was implemented with “high” fidelity as determined by at least 80% of the participants having component scores that reach an adequate level of implementation. Findings reveal that the first two key components were implemented with high fidelity in Year 1 (principal training/support and teacher training/support), while the third key component (teacher cohort development work) did not quite meet the 80% benchmark required for high implementation).

For the principal training/support component, 80% of the participants met the threshold for adequate fidelity (a score of 2 or higher on a scale of 0-3 across both indicators). The main reason for less than 100% meeting the established threshold was that not all principals responded to the item on the summer training institute feedback form about their level of preparation to support their teachers after participating in the institute.

For the teacher training/support component, 82% of the participants met the threshold for adequate fidelity (a score of 3 or higher on a scale of 0-4 across all three indicators). The main reason for less than 100% meeting the established threshold was that six of the teachers joined the project after the summer training institute, so they were unable to receive a score for the item on the institute feedback form about their readiness to begin participating or for the follow-up video calls with project staff after the institute.

For the teacher cohort development work component, 68% of the participants met the threshold for adequate fidelity (a score of 18 or higher on a scale of 0-25 across all 15 indicators). The main reason for less than 100% meeting the established threshold was due to the project staff modifying teacher activities related to the lesson plan by extending the timeline beyond Year 1 for the development work, which was the precursor for three additional indicators (providing peer critiques of the lesson plans, video-recording implementation of a lesson plan, and providing peer critiques of those recordings). As a result, most teachers had scores of 0 for these four indicators.

Table 1. Implementation Fidelity Matrix

<p>Key Components and Indicators</p>	<p>Scoring (#/% meeting threshold for adequate fidelity on component based on indicator scores)</p>	<p>High Fidelity of Implementation Achieved for Year 1 (80-100% of participants met adequate fidelity threshold)</p>
<p>#1: Principal Training/Support 1A: Principal/school leader training 1B: Principal/school leader level of preparation</p>	<p>20 of 25 80%</p>	<p>YES</p>
<p>#2: Teacher Training/Support 2A: Teacher training 2B: Teacher supports 2C: Teacher level of preparation</p>	<p>28 of 34 82%</p>	<p>YES</p>
<p>#3: Teacher Cohort Development Work 3A: Development of lesson plans 3B: Critical friend/peer feedback on lesson plans 3C: Video-record classroom instruction 3D: Critical friend/peer feedback on instruction 3E: Participation in modified DACUM session <i>Note:</i> The remaining indicators focus on various educational beliefs and instructional practices related to: 3F: Peer collaboration/feedback 3G: Virtual platform for collaboration 3H: Develop effective lesson plans 3I: Integrate self-efficacy in plans 3J: Deliver lessons with self-efficacy 3K: Integrate growth mindset in plans 3L: Deliver lessons with growth mindset 3M: Integrate real-world applied math in plans 3N: Deliver lessons with real-world applied math 3O: Influence of rural context on student interest in math</p>	<p>23 of 34 68%</p>	<p>NO</p>

Conclusions and Recommendations

Conclusions pertaining to the RMIN project's overall performance in Year 1 are organized below into eight sections that align with the formative and implementation evaluation questions. These conclusions are derived from analysis of available data sources from the Year 1 evaluation activities. Bulleted recommendations follow each section, as appropriate, for project staff's consideration as Year 2 implementation gets underway. These recommendations emerge from the evaluation data, and are offered merely as suggestions for RMIN project staff as they continue their planning and decision-making related to project implementation.

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 of participants, 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 itself 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.

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.

- Project staff may want to consider the ways in which they are keeping principals updated about the project and engaged in providing necessary support for their participating teachers. Maintaining some type of regular communication with and amongst the principals should help foster a system of support, but determining what level of support is necessary for principals seems to be an area that project staff still need to resolve. Once those decisions are made, then possible communication strategies might include individual or group follow-ups so that principals can interact and share with one another how they are supporting their participating teachers.
- Continuing intensive work with teachers on all areas related to the lesson plan is suggested, i.e., the format and development, the collaborative interaction/feedback, and how to explicitly integrate the self-efficacy, growth mindset, and real-world math applications into the plans. The lesson plan is a linchpin around which the teacher network centers; therefore, helping teachers mitigate their concerns in this area should help ensure their success in Year 2, as lesson plans are developed and implemented. For example, staff might consider creating a tentative schedule for Year 2 project activities and deadlines, to help teachers better understand the scope of their involvement in the coming year.

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.

- Ongoing thinking about how to best support participants in Year 2 should help ensure they continue to increase their knowledge and skills, sustain the progress they have made, and begin translating new knowledge and skills into their instructional practices. Specifically, as teachers get more involved in the lesson plan development work, it appears they may need additional support related to requesting and providing feedback on lesson plans and video-recorded classroom instruction.

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.

- Project staff might want to consider how to maintain the high levels of engagement amongst participating teachers. Suggestions might include identifying teacher "champions" of the project who could help support less-engaged teachers and holding periodic "check-ins" to identify any specific areas of need.
- Project staff might also want to focus their support early in Year 2 on the observation component of the project. That might include various aspects, such as the mechanics of using the virtual platform, how to work within their small groups, how to use the technology to record and upload videos, and how to provide meaningful feedback on lesson plans and classroom instruction videos.

Project Sustainability

As Year 1 ended, the project has started laying the groundwork for future sustainability by creating the teacher and principal networks, and providing the infrastructure for supporting the teacher collaboration (i.e., the project itself and the virtual platform supporting it).

- As the project continues in Years 2-4, project staff could work with teachers and principals to identify other possible funding opportunities that could cover costs associated with network infrastructure supports after the project closes. And, as teachers become more self-actualized in terms of innovatively solving their own problems of practice throughout their NIC participation, they may have ideas and suggestions for how teacher involvement in such a network could be supported within their schools and divisions.

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.

- Project staff might consider having participating teachers implement some quick assessment activity to informally capture students' feedback about these aspects of teachers' classroom practices, as well as their beliefs related to growth mindset and self-efficacy. The evaluation team will administer a pre/post student survey in subsequent project years to capture students' perceptions about their own growth mindset and self-efficacy, but having continual feedback from students throughout the classroom period (semester or year) may provide teachers with real-time insights that could more immediately shape their instructional practices.

Key Components of Project

Project staff and teachers were in agreement that two key components of the RMIN project are the lesson plans and the network. Both of these components map onto one of the main key components identified for the implementation study, i.e., the teacher cohort development work. However, in order for work to move forward in the project's NIC and lesson plan efforts, a level of foundational knowledge was necessary for both principals and teachers. Therefore, principal training/support and teacher training/support were also identified as key components.

- As project staff plan for the Year 2 summer training institute, they might consider adding sessions on topics that principals and teachers identified as being of primary importance; for example, time for principals to share with each other particular strategies or tactics they are employing to provide support and time for teacher sessions focusing on the observation activities related to providing and receiving feedback on lesson plans and the implementation of those plans.

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.

- Project staff might consider how they can further clarify and solidify for teachers the concept of the RMIN project as an opportunity for the teachers themselves to collaboratively operate within the NIC environment for their own development efforts. Fostering such an environment of empowerment, within a safe space for taking risks and being vulnerable amongst peers, is a tenant of the RMIN project, and teachers need to “get” this philosophical shift from perhaps more typical collaborative sharing experiences.

Level 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.

- The evaluation team and project staff should discuss how to better ensure that participants fully complete data collection instruments, such as the institute feedback form and the teacher survey, so that there is less chance of losing indicator data by nonresponses.
- The evaluation team should meet with project staff early in Year 2 to determine the indicator language for the first five activities in the teacher cohort development work component. These indicators should mirror the major activities the teachers will be engaging in during Year 2, i.e., the number of lesson plans to be developed, the number of peer critiques of lesson plans, the number of video-recorded implementations of the lesson plans, the number of peer critiques of lesson plan implementation, and any activity that might replace the modified DACUM session from Year 1.

Appendix A

Principal Summer Institute Feedback Form Evaluation Brief

EVALUATION BRIEF: JULY 24, 2017

PRINCIPAL FEEDBACK SUMMARY FROM RMIN YEAR 1 SUMMER TRAINING INSTITUTE

A total of 25 principals (or their representatives) attended the July 2017 training institute, representing all 26 participating schools. A total of 21 completed feedback forms were received (84% response rate).

School level (n = 21): 48% Middle school 48% High school 5% Both
 Locale (n = 19): 58% Southside VA 42% Southwest VA

Engagement and Relevance	Response Option Percentages* (Items re-ordered by highest-to-lowest mean scores)					Statistics	
	Not at all	Not much	Somewhat	Pretty much	Very much	Mean	Std. Dev.
To what degree:							
Do you believe it will be worthwhile to apply what you learned? (n = 20)	0%	0%	0%	40%	60%	4.60	0.50
Did you actively participate in the institute activities? (n = 21)	0%	0%	5%	43%	52%	4.48	0.62
Do you understand the purpose of the RMIN project? (n = 21)	0%	0%	14%	38%	48%	4.33	0.73
Do you understand the purpose of the RMIN external evaluation? (n = 21)	0%	0%	14%	38%	48%	4.33	0.73
Do you believe the institute's content is important for success in the project? (n = 20)	0%	5%	15%	30%	50%	4.25	0.91
Will the training materials help you support your teacher(s) in project participation? (n = 19)	10%	0%	5%	47%	37%	4.11	0.94
Will you be able to use immediately what you learned in the institute? (n = 20)	0%	0%	20%	55%	25%	4.05	0.69
Was the institute structure conducive for your learning about the project? (n = 21)	0%	5%	29%	33%	33%	3.95	0.92
Did the institute sessions enhance your learning about the project? (n = 21)	0%	14%	29%	24%	33%	3.76	1.09
Do you understand how to apply what you learned? (n = 21)	14%	0%	10%	52%	24%	3.71	1.27
Are you clear about what is expected of you in supporting your participating teacher(s)? (n = 20)	5%	5%	25%	45%	20%	3.70	1.03

*Percentages may not total 100% due to rounding.

Satisfaction	Response Option Percentages*					Statistics	
	(Items re-ordered by highest-to-lowest mean scores)					Mean	Std. Dev.
Level of agreement:	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree		
I anticipate the project will be a worthwhile investment of my teacher's time. (n = 21)	0%	0%	10%	43%	48%	4.38	0.70
The institute confirmed the importance of the principal's role in supporting an innovative teacher. (n = 21)	0%	5%	0%	52%	43%	4.33	0.73
I now feel adequately prepared to support my participating teachers. (n = 21)	0%	5%	10%	67%	19%	4.00	0.71
I believe the institute was a high-quality event. (n = 21)	5%	5%	24%	24%	43%	3.95	1.16
The training institute was a worthwhile investment of my time. (n = 21)	5%	5%	19%	33%	38%	3.95	1.12

*Percentages may not total 100% due to rounding.

Knowledge

- 1 = No understanding of the topic** **4 = Pretty much understand the topic**
2 = Not much understanding of the topic **5 = Very much understand the topic**
3 = Somewhat understand the topic

BEFORE Response Option Percentages*					Statistics		TOPICS
1	2	3	4	5	Mean	SD	
0%	20%	30%	35%	15%	3.45	1.00	Principal support of teacher innovation (n = 20)
0%	10%	5%	70%	15%	3.90	0.79	Principal leadership practices (n = 20)
0%	0%	40%	45%	15%	3.75	0.72	Principal support and math achievement (n = 20)

*Percentages may not total 100% due to rounding.

AFTER Response Option Percentages*					Statistics		TOPICS
1	2	3	4	5	Mean	SD	
0%	0%	5%	50%	45%	4.40	0.60	Principal support of teacher innovation (n = 20)
0%	0%	0%	50%	50%	4.50	0.51	Principal leadership practices (n = 20)
0%	0%	5%	50%	45%	4.40	0.60	Principal support and math achievement (n = 20)

*Percentages may not total 100% due to rounding.

TOPICS	COMMENTS
Principal support of teacher innovation	<ul style="list-style-type: none"> - Much of the expectation from DOE in school improvement stifle innovation and make teachers feel that the only thing that matters is passing SOL. - Understand the importance and the concept, but still don't know what this looks like day to day. - More confirmation of beliefs
Principal leadership practices	<ul style="list-style-type: none"> - This presentation was absolutely EXCELLENT!!! AWESOME PRESENTATION. - Only in the area of innovation.

	- Always on the learning curve
Principal support/ math achievement	- Mark Wilson was a wonderful speaker with great information. - Don't know how RMIN will make this different.

How could your involvement/engagement in the institute activities have been increased?

- Can't think of any ways at the moment - this was so well-planned, organized, and well-thought. It's obvious that time was put into the planning.
- I don't feel that my involvement was an issue. Involvement was very sufficient.
- Monday was too long. Research shows that students are more engaged when given breaks more often.
- Have more roundtable discussions.
- We had a lot of information/conversations about leadership, but not about what the activities will be.
- I remain unclear on my expectations, as principal, in support of the teachers in this program.
- N/A - participated often.
- N/A
- It would be nice to see ideas/work with teachers to discuss ways to implement the program.
- Maybe, some prep work before the conference to help me better understand the project.
- Better presenters.
- I needed more specifics on the psychology of motivation.
- This is a difficult project because it is brand new. We do not have a definite structure, the process will develop in time.

What additional information should be included in future RMIN trainings to help you understand your role in supporting your participating teacher(s)?

- (Would probably be able to suggest needed topics once actual implementation begins.)
- I think knowing up front the expectations of the program for the teachers will help administration to more adequately provide support.
- Have powerpts. ahead of time.
- It would help to see the project's mission and vision statements and goals. Most of Monday's training was informative but did not all seem to tie together to a common vision. Would have liked to hear more information about the grant's purpose and anticipated outcomes.
- The logistical how of support.
- More on motivational techniques.
- What are the teachers doing? What support will they need from us? What is innovative about this project? We heard the word repeatedly, but not sure what it will actually look like in our math classes.
- A brief intro to what info and web pages the teachers will be utilizing.
- (1) What will the teachers actually be doing? (2) What makes this program different? (3) What should I actually do as principal to support my teachers beyond the support already provided?
- More teacher/administrator time together (in future).
- I would have liked to participate in some of the training sessions that the teachers had. I would like to see some of the specifics that they are required to complete.
- Give more examples of support.
- More information that describes the program. Feedback from former attendees.
- Stronger presentations.

Please share any additional comments you would like to make about the institute.

- This was the best conference I have attended in reference to worthwhile and much needed information. Dr. Shannon was Awesome!! Location was great - atmosphere was great!! The session on "Principal Relationships and Leadership in Practices" should be repeated at the next session for updates and sharing of ideas and just an opportunity for administrators to learn from each other. Breaks were spaced in excellent places - and sessions were timed effectively. Wonderful 3 day (Sun-Tue) learning and sharing experience.
- It was somewhat distracting at times when 2 presenters were side by side in room locations in the breakout sessions. I found myself listening to the other presenter.
- I had special dietary needs during this conference. Due to the fact that there were speakers during meals I was unable to eat until 4:00. It would be nice if consideration would be made for folks that may need time during lunch and dinner. In the long run I feel that you would have a happier and more productive audience. Also, would be a great time to network with others from region and take care of _____ items at our schools.
- Very worthwhile, looking forward to the project and implementation at school. Being a constructivist, this just reaffirms my philosophy.
- Thank you, looking forward to going forward.
- What will this project look like? It is a 4 year commitment, but I still don't know what the project really is. I learned about leadership styles in my graduate classes, I wanted to learn about this project.
- Very excited for this program and its implementation.
- More dynamic presenters. Schedule could be more specific. Food could be much better. Overall a good experience and a very worthwhile project. I hope we see great results. Dorothea Shannon is a superior presenter. The gentleman from GA was excellent as well. The teacher from California was great as well.
- I am glad I had the opportunity. It can be difficult and intimidating to accept a brand new challenge. This has been a process in thinking outside of the box.

KEY POINTS

- Overall, principals viewed the institute positively, with all Engagement/Relevance and Satisfaction item ratings at or above 3.70 on a 5-point scale. Less than 15% gave any ratings of 1 or 2 to any of these items.
- Both rated items and comments indicate that principals wanted more information about the RMIN project purpose, mission/vision, goals/objectives, and outcomes (in addition to Hobart's brief video and Veronica's coverage of objectives)—and what makes this project "innovative."
- Principals wanted more concrete suggestions/strategies/actions they should be doing to support their teachers in the RMIN project; the "how-to's."
- Principals wanted more information about what specific activities the teachers would be undertaking, and the expectations for their teachers; they also wanted more joint time with their teachers during the institute.

Appendix B

Teacher Summer Institute Feedback Form Evaluation Brief



EVALUATION BRIEF: JULY 26, 2017

TEACHER FEEDBACK SUMMARY FROM RMIN YEAR 1 SUMMER TRAINING INSTITUTE

A total of 30 teachers attended the July 2017 training institute, representing 25 of the 26 participating schools (one teacher was unable to attend the institute). All 30 participating teachers completed a feedback form for a 100% response rate.

School level (n = 29):	66%	Middle school	31%	High school	3%	Both
Locale (n = 29):	59%	Southside VA	41%	Southwest VA		
Subjects taught (n = 29):	31%	Pre-Algebra	41%	Algebra 1	28%	Both

Engagement and Relevance	Response Option Percentages*					Statistics	
	(items re-ordered by highest-to-lowest mean scores)					Mean	Std. Dev.
To what degree:	Not at all	Not much	Somewhat	Pretty much	Very much		
Do you believe it will be worthwhile to apply what you learned? (n = 30)	0%	0%	3%	23%	73%	4.70	0.54
Do you believe the institute's content is important for success in the project? (n = 30)	0%	0%	3%	33%	63%	4.60	0.56
Do you understand the purpose of the RMIN project? (n = 30)	0%	0%	7%	33%	60%	4.53	0.63
Did you actively participate in the institute activities? (n = 30)	0%	0%	7%	40%	53%	4.47	0.63
Do you understand the purpose of the RMIN external evaluation? (n = 30)	0%	0%	7%	43%	50%	4.43	0.63
Did the institute sessions enhance your learning about the project? (n = 30)	0%	0%	7%	47%	47%	4.40	0.62
Was the institute structure conducive for your learning about the project? (n = 30)	0%	0%	7%	50%	43%	4.37	0.62
Will the training materials help you succeed in the project? (n = 30)	0%	0%	7%	50%	43%	4.37	0.62
Are you comfortable partnering with a peer group to collaboratively develop math lesson plans? (n = 30)	3%	0%	10%	33%	53%	4.33	0.92
Are you now familiar with the RMIN project website and resources? (n = 30)	0%	0%	13%	40%	47%	4.33	0.71
Did the institute help you build working relationships with your project peers? (n = 30)	3%	3%	7%	43%	43%	4.20	0.96
Are you ready to begin using what you learned in the institute? (n = 30)	0%	0%	10%	60%	30%	4.20	0.61
Did you increase your understanding of how to integrate growth mindset strategies into math lesson plans? (n = 30)	0%	0%	30%	43%	27%	3.97	0.77
Do you understand how to apply what you learned? (n = 30)	0%	0%	27%	53%	20%	3.93	0.69
Are you clear about what is expected of you as a participant in the project? (n = 30)	0%	0%	33%	43%	23%	3.90	0.76
Did you increase your understanding of how to integrate self-efficacy strategies into math lesson plans? (n = 30)	0%	3%	30%	50%	17%	3.80	0.76

*Percentages may not total 100% due to rounding.

How could your involvement/engagement in the institute activities have been increased? (n = 24)

- When I actually get into the art and the practice of these ideas, I will be better able to answer this question.
- I felt that many of the presenters were rushed through their material and not enough time was allotted for some of the presentations.
- I suppose if we had more time (longer institute) - everyone got a chance to share, but we simply didn't have time to get to everyone. I don't think you could've improved this, though. The institute was a perfect length for us all - learned so much!
- I believe having the books ahead of the institute would have helped in further understanding of some of the topics and we could have come more prepared to discuss that in terms of our lesson plans.
- I'm a hands-on person - I know it would have been costly, but I would have liked to have printed PowerPoints.
- Smaller groups when presenting information
- List/poster of jobs and skills that are directly linked to math objectives.
- Very informative but it should be more movement and/or active involvement of participants.
- I think any feedback from other fellow math teachers will always help you grow as an educator.
- One thing we preach is the need for movement, sitting and listening for 60-90 minutes is exhausting.
- I can't think of a way to improve it.
- Through different activities and strategies learned on how to deal/encourage students using growth mindset to love/appreciate math; giving feedback and sharing thought with other colleagues.
- More hands on work with group and presenters. More strategies and applications given to add value for students.
- I felt as if the level of engagement/involvement was great. I liked that we had whole group/teacher groups/small project groups.
- More time and practice.
- I know there are things we need to know. But, I do not need to sit in an hour meeting about technology. I think another option would be useful during some of the presentations.
- I really don't know.
- Quite truthfully: more time, 5 days, or maybe to have had a 2-day session on a week after school, mid June, and then the 4-day in July. This could have given us an insight to the program.
- I know there was lots of information we needed in a short amount of days, but sitting for long periods of time diminished my involvement.
- My engagement/involvement in the activities were decent. Questions I had were asked by others in my group. I had asked for assistance in breakout sessions to clear up misunderstandings.
- I have gained insights on how I can participate/implement certain activities to a certain extent.
- The first day was simply too long. It did not make sense to me to have an hour and a half break and return for supper/speaker either.
- More forums?
- Because of the very accommodating, knowledgeable, and friendly staff and willing to help co-participants, I was engaged.

What additional information should be included in future RMIN trainings to help you fulfill your responsibilities in the project? (n = 21)

- Maybe some more actual examples of "what" or "how" GM and SE is and are used.
- I would like to have had more opportunities to practice with the lesson plan template. More detailed and clearer ways to show using growth mindset and self-efficacy in the classroom.
- Maybe "break-away sessions" per group, with one trainer speaking with each group. This would be helpful for the lesson plan process.
- A typed document of everything that is expected over the five years
- Motivational song/chant/theme etc. to encourage students in the classroom.
- More precise timeline w/ deadlines.
- More of the expectations as we go through this process - practice and feedback.
- Outcome of expectations in calendar format when it is available.
- Classroom management to successfully implement the strategies learned.
- Concrete timelines and expectations.
- I would have said clear expectations, but the expectations for year 1 were clearly explained this morning (Thursday).
- More detailed information and step-by-step check lists.

- Have a checklist on day 1 of what we need to do during the project with "due" dates.
- We shall see.
- Clear directions from speakers about expectations concerning the project. A clear timeline or listing of when plans are due and timeframe of when video comments are expected from the time the video is uploaded
- My principal will need to understand that all of the students will need to participate in activities created by the teachers in the program, not just the 8th grade students in the pre-algebra class and Algebra, but also the 7th grade students in the pre-algebra class.
- The templates could have been available on the website to avoid writing on the original documents.
- Maybe some specific activities done in my grade level so I can see how I can implement a given lesson.
- I am unsure at this time.
- More resources (real world) and materials, and websites we can use to support us, connect our lessons to bridge the gap between classroom mathematics to the needs of the students.
- Nothing, everything was well presented!

Satisfaction	Response Option Percentages*					Statistics	
	(Items re-ordered by highest-to-lowest mean scores)					Mean	Std. Dev.
Level of agreement:	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree		
I anticipate the project will be a worthwhile investment of my time. (n = 30)	0%	0%	0%	37%	63%	4.63	0.49
The training institute was a worthwhile investment of my time. (n = 30)	0%	3%	0%	37%	60%	4.53	0.68
I look forward to networking with my peers in this project. (n = 30)	0%	0%	3%	47%	50%	4.47	0.57
I believe the institute was a high-quality event. (n = 30)	0%	0%	3%	47%	50%	4.47	0.57
I feel ready to begin participating in this project. (n = 29)	0%	0%	7%	66%	28%	4.21	0.56
The institute confirmed the importance of the principal's role in supporting an innovative teacher. (n = 30)	0%	3%	20%	43%	33%	4.07	0.83

*Percentages may not total 100% due to rounding.

Knowledge

- 1 = No understanding of the topic** **4 = Pretty much understand the topic**
2 = Not much understanding of the topic **5 = Very much understand the topic**
3 = Somewhat understand the topic

BEFORE Response Option Percentages*					Statistics		TOPICS
1	2	3	4	5	Mean	SD	
0%	7%	43%	37%	13%	3.57	0.82	Math learning in a rural context (n = 30)
57%	37%	7%	0%	0%	1.50	0.63	The Expectancy-Value-Cost model of motivation (n = 30)
20%	20%	43%	10%	7%	2.63	1.13	A principal's role in supporting teacher innovation (n = 30)
3%	17%	52%	21%	7%	3.10	0.90	Math motivation (n = 29)
13%	43%	30%	13%	0%	2.43	0.90	Student self-efficacy (n = 30)
23%	47%	30%	0%	0%	2.07	0.74	Student growth mindset (n = 30)
0%	3%	40%	40%	17%	3.70	0.79	Real world math (n = 30)
7%	17%	43%	27%	7%	3.10	1.00	Teachers and principals working together to foster teacher innovation (n = 30)

*Percentages may not total 100% due to rounding.

AFTER Response Option Percentages*					Statistics		TOPICS
1	2	3	4	5	Mean	SD	
0%	0%	3%	47%	50%	4.47	0.57	Math learning in a rural context (n = 30)
0%	3%	37%	33%	27%	3.83	0.87	The Expectancy-Value-Cost model of motivation (n = 30)
0%	3%	27%	43%	27%	3.93	0.83	A principal's role in supporting teacher innovation (n = 30)
0%	0%	7%	59%	34%	4.28	0.59	Math motivation (n = 29)
0%	3%	17%	53%	27%	4.03	0.76	Student self-efficacy (n = 30)
0%	0%	17%	47%	37%	4.20	0.71	Student growth mindset (n = 30)
0%	0%	3%	50%	47%	4.43	0.57	Real world math (n = 30)
0%	0%	20%	50%	30%	4.10	0.71	Teachers and principals working together to foster teacher innovation (n = 30)

*Percentages may not total 100% due to rounding.

TOPICS	COMMENTS
Math learning in a rural context (n = 3)	<ul style="list-style-type: none"> - I've always understood rural learning is different, this training helped! - I am from an area of the country (New England) where learning is taken much more seriously than here, so it is obvious that the concept of students not wanting to learn was foreign to me, so I have seen how the unwillingness to want to learn - PDs on the topic are given each year
The Expectancy-Value-Cost model of motivation (n = 2)	<ul style="list-style-type: none"> - I would like to see/discuss more examples of this - I am interested and have begun reading the given book
A principal's role in supporting teacher innovation (n = 1)	<ul style="list-style-type: none"> - Given
Math motivation (n = 0)	
Student self-efficacy (n = 3)	<ul style="list-style-type: none"> - I understand what self-efficacy is but not sure how to show with the lessons. - Have heard terms but now have ideas of how to add into classroom/lesson - Learned a lot here!
Student growth mindset (n = 4)	<ul style="list-style-type: none"> - Anxious to begin implementation - Have heard terms but now have ideas of how to add into classroom/lesson - Learned a great deal! - I was using practices but didn't know a name for it
Real world math (n = 2)	<ul style="list-style-type: none"> - My thought was making math relevant but the focus wasn't on stem H technical careers - Always known the importance of real world math
Teachers and principals working together to foster teacher innovation (n = 1)	<ul style="list-style-type: none"> - Given

What challenges do you anticipate in applying what you have learned, and how could those challenges be lessened?

(n = 24)

- The challenge for me will be the tendency to reverting to what I have been comfortable doing, should I encounter any stumbling blocks.
- Writing lesson plans incorporating self-efficacy and growth mindset.
- I think everything will be fine - the program is designed for us to practice and collaborate with each other so our lesson plans will be successful - that is really the only thing that makes me a little anxious. I want to design lessons to enlighten and help my students, but I know with the support of everyone here, we will do just fine.
- Again, I am a hands-on learner. I need to apply my new skills to see where the challenges lie. I do have concerns about finding real world math problems within Algebra B that fits into the time restraints that we have.
- Being able to apply the real world to the content more than I already do. Give me examples.
- Deadlines based on lesson I want to complete when it is in my pacing guide.
- Just nervous, so practice will help tremendously!
- I think it will be a learning curve to gain momentum and support, but once the practice is proven, it should gain fast growth.
- Implementation of the strategies/project concerning discipline issues. It can be lessened by reinforcing class rules.
- Time for lesson planning that does not take up a lot of personal/family time.
- The format of the lesson plan may be challenging in terms of adapting my current lesson planning style. However, these challenges are lessened because I was given templates, examples, and training on the lesson plan expectations.
- Time, resources such as Wi-Fi, bandwidth, and support from other teachers in the building.
- I understand having groups in different areas. However, I think working with our own districts would work better. Or at least picking our own groups. That way we are working with people who have better ideas about how our kids relate.
- I don't see any particular hurdles to implementing the vision of RMIIIN. My biggest personal challenge will be the lesson plans and becoming more mindful of self-efficacy and growth mindset on a daily basis.
- One of the challenges would be having clear expectations and timelines (frames) to go by. Another would simply be having the time to properly look at the information and give feedback.
- My biggest challenge is already my principal only wanting the other teacher's classes to participate. I don't feel like I have support from him.
- Possible challenges are parental consent and assistance from the tech department and connecting to the school's server on a personal iPad.
- Application of math in the industry where we teach. I think through working with my peers/group, I may be able to lessen the challenges.
- My biggest challenge is relating some algebra lessons to real-world context.
- Creating the long lesson plans.
- I think just getting started and working with the new app will be the challenge. Once I get the hang of everything, I think it will be better.
- Getting bogged down with all the "costs" of a school system. All the added responsibilities.
- Integrating real world lessons with materials that students would see that what they are studying math in the classroom will be used to make them prepare for their targeted job in the future.
- No challenges at this time.

Skills

1 = Little to no understanding of the skill

2 = Basic understanding of the skill, but cannot perform it

3 = Understand the skill, and can perform it with assistance

4 = Can perform the skill without assistance

5 = Can perform the skill and teach others to do it

BEFORE Response Option Percentages*					Statistics		TOPICS
1	2	3	4	5	Mean	SD	
13%	23%	20%	37%	7%	3.00	1.20	Collaboratively develop a math lesson plan using a common template (n = 30)
43%	33%	20%	3%	0%	1.83	0.87	Collaboratively develop a lesson plan that integrates self-efficacy strategies (n = 30)
47%	30%	23%	0%	0%	1.77	0.82	Collaboratively develop a lesson plan that integrates growth mindset strategies (n = 30)
3%	23%	47%	17%	10%	3.07	0.98	Collaboratively develop a lesson plan that incorporates real-world context (n = 30)
37%	28%	14%	14%	7%	2.24	1.30	Critique peer math instruction using a rubric (n = 29)
36%	21%	25%	11%	7%	2.32	1.28	Use virtual platform technology (n = 28)
28%	31%	28%	3%	10%	2.38	1.24	Record videos of classroom lessons for self and peer critiques (n = 29)
14%	28%	24%	21%	14%	2.93	1.28	Use technology for project-related purposes (n = 29)
46%	18%	25%	11%	0%	2.00	1.09	Participate in a facilitated Networked Improvement Community (n = 28)

*Percentages may not total 100% due to rounding.

AFTER Response Option Percentages*					Statistics		TOPICS
1	2	3	4	5	Mean	SD	
0%	0%	33%	40%	27%	3.93	0.78	Collaboratively develop a math lesson plan using a common template (n = 30)
0%	10%	50%	30%	10%	3.40	0.81	Collaboratively develop a lesson plan that integrates self-efficacy strategies (n = 30)
0%	13%	43%	27%	17%	3.47	0.94	Collaboratively develop a lesson plan that integrates growth mindset strategies (n = 30)
0%	0%	21%	48%	31%	4.10	0.72	Collaboratively develop a lesson plan that incorporates real-world context (n = 29)
0%	0%	45%	34%	21%	3.76	0.79	Critique peer math instruction using a rubric (n = 29)
0%	4%	30%	37%	30%	3.93	0.87	Use virtual platform technology (n = 27)
0%	10%	24%	41%	24%	3.79	0.94	Record videos of classroom lessons for self and peer critiques (n = 29)
0%	3%	28%	38%	31%	3.97	0.86	Use technology for project-related purposes (n = 29)
0%	0%	46%	36%	18%	3.71	0.76	Participate in a facilitated Networked Improvement Community (n = 28)

*Percentages may not total 100% due to rounding.

TOPICS	COMMENTS
Collaboratively develop a math lesson plan using a common template (n = 1)	- I already do it
Collaboratively develop a lesson plan that integrates self-efficacy strategies (n = 4)	<ul style="list-style-type: none"> - Still not sure about the self-efficacy strategies - Will still be working to incorporate self-efficacy - Still learning about growth mindset and self-efficacy - With practice, my comfortability should increase
Collaboratively develop a lesson plan that integrates growth mindset strategies (n = 5)	<ul style="list-style-type: none"> - Still not too sure but will try and continue to develop the skill - Feedback and practice - Still learning about growth mindset and self-efficacy - With practice, my comfortability should increase - So excited to integrate new ideas.
Collaboratively develop a lesson plan that incorporates real-world context (n = 1)	- Still a little confused you want math tasks not just word problems, right?
Critique peer math instruction using a rubric (n = 2)	<ul style="list-style-type: none"> - I have some practice from my grad school work - Had practice during math spec. program
Use virtual platform technology (n = 1)	- I have used similar platforms
Record videos of classroom lessons for self and peer critiques (n = 1)	- I already record my class for self-reflection. Peer critiques are a benefit.
Use technology for project-related purposes (n = 1)	- I already do it.
Participate in a facilitated Networked Improvement Community (n = 1)	- I already do it.

What skill are you most excited about implementing, and why? (n = 24)

- I am most excited about the use of technology in my teaching and the ability to be critiqued in a low stakes manner.
- The growth-mindset. I already try to get my students to believe in their abilities and think this will enhance what I already do in my classroom.
- Of course, I'm excited to implement all of the skills we've learned this week, but I'm especially hoping to become proficient in integrating growth mindset strategies. I want all of my students to believe in themselves, learn from mistakes, and know they can learn mathematics.
- I love my group - excited to get their input!
- Motivation and self-efficacy; I am very excited for how it may transfer to my students.
- Motivation strategy to increase self-efficacy. Sharing growth mindset.
- Real world context. My students need to learn how the math relates to everyday life.
- New ideas, plans, and strategies because I think this will help me grow as an educator.
- I am most excited about the tech. I have wanted to implement several of the strategies (tech-wise) discussed, but have not had the resources.
- The development of a classroom that reflects a growth mindset atmosphere.
- More real world/vocational examples to implement in my classroom.

- Real-world context. It will help students see that they do need to know basic skills and will not waste a whole class period explaining it to them.
- I'm much better for technology than I am at writing lesson plans. Therefore, I'm excited about Torsh as a technical platform.
- Real world
- Growth mindset
- Growth
- Working on my growth mindset vocabulary.
- I am most excited about implementing the growth-mindset and self-efficacy aspects of the institute because I see the benefit of students changing the mindset will have a positive impact on their learning in the classroom and in them becoming a more conducive citizen.
- Growth mindset strategies - I'm excited to see how this will affect students' performance.
- Developing and implementing lesson plans with growth mindset and self-efficacy.
- The technology aspect and collaborating with others.
- Growth mindset on the 1st day. I know I do some but I am most excited about building and improving.
- Videoing the lesson with my students. It will be my first time to do it and I'm quite nervous.
- To collaboratively develop a math lesson plan.

Which skill are you least sure about implementing, and why? (n = 23)

- I am a bit apprehensive about the self-efficacy and growth mindset components, because I am not familiar with the way in which these attributes can be best implemented.
- Self-efficacy. Still not too sure how to put it into practice into the classroom. But will go back and watch the PowerPoint presentations.
- The same as above - growth mindset. I am the most excited, but of course, a little nervous, because I want to make sure that my students feel comfortable and believe they can be successful in math. This is so important, so I really am happy to be a part of this program.
- Critiquing others.
- Real world; I am struggling in finding ways to incorporate it.
- Self-efficacy.
- Growth mindset because I don't feel confident in that right now.
- Honestly, I'm not worried or apprehensive about any implementation. I have never cared/been scared of failure, I am usually the one who volunteers as tribute (Hunger Games ref.).
- Lesson plan - I am still learning how to develop each part of the plan.
- Lesson plan template, but I feel I can do it with support. The reason I feel this way is the level of detail needed for the lesson plan.
- Project-related technology. Technology is not always at hand and finding time to teach the student how to use the technology they will be using it.
- Again, the lesson plan writing that fits the growth mindset dynamic will be the most challenging so I am not very confident with it.
- Nervous about G.M. and efficacy.
- Critique of peer videos. It is difficult to identify some of the skills and you want it to be done correctly.
- Writing the lesson plan/format
- I am least sure about implementing the lesson plans to include real world math that focuses on the Stem H technical jobs.
- Lesson plan - I need practice on this one.
- Recording videos of the lessons being implemented.
- Putting growth mindset and self-efficacy into words on the lesson plans.
- The four page lesson plan.
- None.
- Using technology for project-related purposes, because I might mess it up.
- Using virtual platform technology.

Confidence	Response Option Percentages*					Statistics	
	Not at all	Not much	Somewhat	Pretty much	Very much	Mean	Std. Dev.
To what degree:							
Do you feel confident about applying what you have learned so far, overall? (n = 30)	0%	0%	33%	63%	3%	3.70	0.54
If participants selected Not at all , Not much , or Somewhat , they selected all of the relevant reasons why they were less confident.	10% (n = 3) 3% (n = 1) 7% (n = 2) 0% (n = 0) 0% (n = 0) 17% (n = 5)	I don't have the necessary knowledge and skills. I don't understand what is expected of me. I have other more pressing priorities. I don't have the necessary resources/support to apply what I learned. I don't think what I learned about will work in my school setting. Other: - I'm just unsure of myself – I'll get there! - Just finding time! - Practice the skills - I am a work in progress – I need to practice to get to where I should be. - Simply nervous about trying to implement everything.					
Do you feel confident you will be able to carry out your project tasks with additional RMIN support throughout the year? (n = 30)	0%	0%	13%	57%	30%	4.17	0.65

*Percentages may not total 100% due to rounding.

Follow Up	Response Option Percentages* (items re-ordered by highest-to-lowest mean scores)					Statistics	
	Yes, right away!	Important, but not urgent	Add this when you can	At some point in the future	No need for more support	Mean	Std. Dev.
Guided practice on video recording (n = 29)	3%	10%	10%	17%	59%	4.17	1.20
Uploading videos and resources to the virtual platform (n = 30)	3%	13%	7%	33%	43%	4.00	1.17
Using the virtual platform to communicate and share ideas (n = 30)	3%	7%	27%	27%	37%	3.87	1.11
Commenting on instructional videos (n = 30)	3%	7%	37%	13%	40%	3.80	1.16
Providing feedback using a rubric (n = 30)	10%	20%	17%	33%	20%	3.33	1.30
Effectively carrying out self-efficacy and growth mindset strategies in classroom instruction (n = 30)	17%	23%	20%	37%	3%	2.87	1.20
Understanding what "good" looks like in RMIN math lesson plans (n = 30)	23%	23%	20%	27%	7%	2.70	1.29
Other (n = 1): - Taking time to make it work.	0%	100%	0%	0%	0%	2.00	0.00

*Percentages may not total 100% due to rounding.

Please share any additional comments you would like to make about the institute. (n = 13)

- I enjoyed the institute and the connections that were made. It is always good to be around likeminded people, that have similar interests and share common goals. The institute facilitators were welcoming, forthcoming with information and willing to support and be supportive. I found the presenters to be engaging, and good communicators. Even though, I am still unsure or not quite as confident of being effective in the implementation of the strategies discussed. I in no way attribute this to the presenters. My lack of confidence stems from the fact that these ideas are completely new to me and I have not had much time to get immersed in the literature of these ideas. I look forward to further face to face meetings with the groups.
- I have learned critical new knowledge to take back to my school. I wish we had more time for discussions and feedback. Some of the presentations were rushed through. My thoughts for future institutes would be to break it into 2 sessions, one in the early spring and one in the fall before schools start. The travel distance was farther than I would have liked.
- I know I've said it before - I'm excited! I'm thankful for this opportunity and want to do a good job - I know how amazing this is going to be! Thank you!
- Overall I have enjoyed the institute and am very excited about the future and the sharing of ideas! I don't really know how it could have worked but more getting out of seats and interaction would have been helpful, especially the first couple of days. I look forward to our next interaction, have a great rest of your summer!
- I would like written directions for Torsh Talent.
- Please let me know of any additional ways I can support this movement. I would love to assist in any way. My specific three areas of awesomeness are activities/stations, content "life hacks," and training/development. Yes, I am one of the "new" teachers (2 yrs),but I have two decades of "coaching" exp. (athletics, military, business). I'm also so full of confidence I'm borderline cocky! Thank you for allowing me to be part of this!
- Great project. I am excited about getting started.
- The institute was long, but necessary. I feel as if all we learned was needed except the technology for me in particular. I had spent a little time before the institute on the platform so I had a great understanding and didn't need guidance on this at the institute. However, I understand the need of the "technology day" for the group.
- Have everybody on the same page before introducing an idea. That way any questions can be answered once with no doubt as opposed to getting a different answer to the same question. Do not "learn" with us. Know what you are trying to get across.
- Monday was a very long day. More breaks were needed. The institute has a great expectation and view. One of the expressions a coworker used was that they were building the plane as they flew, in reference to a program they were in charge of. I realize that this grant is a major undertaking and has to be fast paced to get the project underway, however parts of the institute have been unclear. If possible, could we have clear expectations with examples and a timeframe of when those expectations are due. I understand what you want as an outcome of the grant but I am not sure which road to take to achieve this goal. Also we are listening to the speakers giving different information. I would love for us all to be on the same page with clear instructions with step by step directions.
- The institute was informative in regards to the changes in where the jobs will be in the future. The change back to the increase in STEM H technical job was astonishing. I plan to apply what I've learned to working with my daughter in the 10th grade, my students, and colleagues.
- Some suggestions: (1) A bag with RMIN logo would be good - to put stuff that were given and also a remembrance of the project. (2) A shirt with RMIN logo as remembrance for the project.
- Have a group picture with the consultants, a t-shirt with "RMIN" printed on it, and a big bag to put all the materials you gave us. Lastly, actual technicians that would work with us either personally or through webinar. Looking forward for another excellent job from the staff (RMIN). Thank you soooooo much!

KEY POINTS

- Overall, teachers viewed the institute positively, with all Engagement/Relevance and Satisfaction item ratings at or above 3.80 on a 5-point scale. Less than 10% gave any ratings of 1 or 2 to any of these items. Teachers took the time to complete this detailed feedback form at the end of the last day.
- For all of the Knowledge and Skill items, mean scores increased from the Before to the After ratings.
- Rated survey items and open-ended feedback indicate the need for clarity about expectations around timelines and lesson plans.
- Rated items also suggest that some additional explanation around the application of self-efficacy and growth mindset strategies would be beneficial. Reinforcing this is the fact that nearly half of the teachers indicated these are the most important topics for follow-up support.
- Comments reflect that although teachers want additional explanations about self-efficacy and growth mindset, they are excited to implement these strategies.
- Teachers indicated they are less confident about implementing lessons plans, which is confirmed by the rated item for which 30% of the teachers indicated that follow-up is necessary for understanding what “good” looks like in RMIN math lesson plans.

Appendix C
Teacher Group Interview Evaluation Brief



EVALUATION BRIEF: NOVEMBER 2017

RMIN TEACHER GROUP INTERVIEW SUMMARY YEAR 1

The purpose of the teacher group interview sessions was to provide teachers an opportunity to share their thoughts about their experiences with the RMIN project throughout the year. The external evaluation team conducted four 1-hour sessions via GoToWebinar between October 30 and November 2, 2017. Thirty-two of the teachers (94%) participated in one of the four sessions. The sessions were audio recorded, and transcripts were generated for analysis. Key themes and illustrative comments are summarized below.

1. What are your overall reactions to your RMIN project experience?

- Overall, teachers are excited to be part of the project and report it has been a positive experience in general, both “inspiring” and “challenging.” Teachers especially valued the initial summer institute training, as well as the subsequent support provided. One teacher shared “The summer session was some of the best professional development I’ve ever received.”
- A few teachers noted the project has been “slow to start” and that some confusion still remains (everyone “not on the same page”) on project expectations, especially related to the lesson plans. And, some teachers expressed uncertainty about creating a lesson plan; one reported, “I’m a little hesitant to actually jump in there and do one. I’m afraid it won’t be very good.”
- There was consensus among those teachers who had participated in a DACUM session that they found that activity helped them move forward with developing a lesson plan. One teacher commented that it “really helped settle my fears about my own inability to frame and to follow that process.” Another stated, “I wrote my first lesson plan the next day” after attending 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.”
- Teachers also reflected on the importance and value they saw in focusing on growth mindset and real-world math. One teacher noted the project was “helping me to become more mindful of those things” [connection between jobs and math, having students think about how math is used] as lesson plans are developed. Another said it was “exciting and helpful” to share real-world life examples with the students. Yet another commented it was “easy for me to incorporate [growth mindset] into my classroom,” adding it was “really neat to see the kids engage with it.” One teacher concurred, noting “the children are responding well to it.” One individual believed the project “has grabbed some cutting edge educational pieces in self-efficacy and growth mindset and brought them into the math world . . . and into Virginia.”
- Finally, one teacher remarked, “The program is making me a better teacher and my students better learners . . . learning from peers has been great.” Another teacher shared, “I think the best is yet to come. I’m thankful to be a part of RMIN.” Another noted, “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.”

2. Tell me how the RMIN project is affecting your knowledge and beliefs.

- Overall, teachers perceived the RMIN project is increasing their knowledge and beliefs about growth mindset and self-efficacy. One teacher noted “[the RMIN project reminds me] to be always mindful of what I’m doing, what’s in the classroom, poster- and bulletin-wise...it challenges me to think about what I say to students as I model growth mindset.”
- For some teachers, the project is reaffirming what they have been doing and challenging them to think outside the classroom and connect to the real world by pulling in outside resources from websites such as YouTube. One teacher noted, “I'm finding myself not only searching for the one lesson plan to write for the project, but I'm thinking about it as I'm teaching other things as well and trying to find other ideas and concepts so they can apply to real life. It's kind of changed my mindset . . . to try to make it a little bit more authentic for the students.”

3. How is the RMIN project affecting your instructional practices?

- Overall, teachers reported more consistent language throughout their lessons, and the inclusion of more real-world problems when teaching. One teacher observed, “It’s helping me in changing the way I talk to my kids.” Another stated, “I think it's also challenging us to really think outside of our mathematical classroom, and really find ways to link this to the real world in a different format than just a basic word problem.” One teacher added, “I think this one is really challenging us to find new, inventive ways to help our instruction to reach our kiddos.”
- One teacher remarked, “I’ve been collaborating more with other teachers in my school” so that “instead of just focusing on the advanced students to be algebra-ready for next year, we are incorporating what we call the algebra-essential skills . . . across the board.”
- Several teachers spoke to their ability to give better feedback on what students are doing well and what they need to work on. One teacher said, “I’m becoming more of a cheerleader for my students... I feel like I'm giving a little bit better feedback on specifically what they're doing well and what they need to work on.”

4. What do you think are the most important aspects of the RMIN project?

- Across the sessions, teachers noted the importance of focusing on real-world application and how students can use math in jobs in their communities. One teacher commented, “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.” Another noted, “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.” One teacher added, “Making those real world connections because students are more engaged when they find meaning and applications to concepts being learned in the classroom.”
- The project has created a network that links teachers with similar challenges and provides an opportunity for them to collaboratively address those challenges. One teacher noted, “I think the creation of the network where we will be linked with teachers from other communities,



especially communities that have similar challenges ... once we get comfortable with it, I think that will really be great. It'll give us a lot of resources and just shared problem solving that we really need." Another added, "Having others to collaborate with is a great asset."

- All four groups mentioned the focus on growth mindset as being crucial. One teacher highlighted that powerful learning happens from mistakes: "Teaching students to analyze their own errors and learn from their mistakes is the most important part." Another stated, "I think that the growth mindset for the students is very important because it lets the students know and tries to get them to challenge themselves, to believe in themselves."

5. Describe any factors you believe are serving as facilitators to the RMIN project. What factors are serving as barriers?

- Teachers offered several facilitating factors, one of which was the VASS RMIN project staff themselves. . One teacher shared, "the VASS staff is definitely willing to work with us and they're very encouraging." Another commented, "The support from Sandy and Jennifer and their willingness to answer questions is really important to have."
- RMIN project activities were identified as other facilitating factors, including the DACUM sessions, webinars, and group discussions. For example, "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"; and "I'd say the DACUM session was a big facilitator in helping me get started."
- The Torsh Talent platform was identified as both a facilitating factor and as a barrier. As one teacher put it, "The Torsh platform that you all use, it serves as both. It aids in sharing of information, but it's also been a barrier to have to learn how to navigate the platform."
- Teachers identified several other barriers. Limited time seemed to be most common. One teacher expressed, "Time has been my largest barrier." Another commented, "I think that barriers are other obligations we have for like, our schools and families and things like that. Sometimes those are things that we can't help."
- Confusion around lesson plans also emerged as a barrier. One teacher reported, "The barriers I think are, we're not getting enough instruction with the lesson plans." Another said, "Some of the barriers would be the confusion between teachers as to what exactly we are supposed to be doing with lesson plans, etc." At a broader level, one teacher expressed "unknowns" about the project, i.e., "What is going to end up and am I going to do the right thing?"
- One teacher also noted the traditional lack of appreciation of math by rural communities: "I think one of the barriers is just the nature of the project for developing the appreciation of math between the school and the real world. For rural counties, it's just the fact that we are in rural counties and math in school is not necessarily appreciated from the get-go, so just the nature of the project is hindering the project."
- Finally, one teacher mentioned the lack of small groups for sharing and discussing ideas: "I feel alone in doing my lesson plans and not having an example to go on or not having ideas to immediately bounce off of somebody else. I think that that's part of a barrier."

6. How are you integrating growth mindset into your teaching practices? What does that look like in the classroom?

- Many teachers include weekly activities and daily incorporation of growth mindset language, as well as displaying posters throughout the classroom. One teacher shared, “I know some of the verbiage like if a kid's struggling, [saying] ‘I don't understand this,’” then the teacher responds “not yet” or “you’re working at it.” This individual added, “Those encouraging words that just tell them to keep on keeping on, things of that nature, I use those a lot.” One teacher shares quotes with her students; they then discuss the meaning of those quotes and connect them to growth mindset on a weekly basis.
- Another teacher explained the use of online resources: “I've been using this website called TrackStar. It's from 4teachers.org. When we introduce a new unit . . . they'll play all these games that I go online and find, and as they're playing the game, it's hard for them at first but then it gets easier for them because they understand what the game is asking them to do. Then the next day, I'll introduce the unit and I'll show them how the games that they were playing the day before . . . used the skills that we were going to learn. It shows them that even though they weren't really good at first, they were able to build up that confidence and that success, and shows them that they can learn this stuff even though it's going to be hard to do.”
- A few teachers mentioned that they do not accept failure by “correcting students when they say something negative and letting students correct their mistakes on their assignments,” and introducing new lessons with growth mindset. Another teacher added, “I think a huge piece of it is making mistakes, knowing that it's okay, but also having the opportunity to fix them.”

7. How are you integrating self-efficacy into your teaching practices? What does that look like in the classroom?

- A few teachers appeared less sure about the concept of self-efficacy. One teacher expressed, “[I'm] still having some difficulty in pinpointing what is, or an example of, self-efficacy.” Another teacher remarked, “I struggle with that a little bit, but it's basically the student's belief that they can do something.” This individual continued by providing an example, “When we had our last benchmark test, I rate their performance down by Standard of Learning (SOL). Usually you'll find a couple SOLs that they did exceptionally well on, others not so well, but you can show them that they can do [those] because they've shown it on certain tasks and, if you can do this, then I know you can do that.”
- With regard to changing students' perceptions about errors, one teacher shared, “Growth mindset has really aided in building self-efficacy in that they look at mistakes differently. And because they realize that mistakes are just a building block in their education, when they make a mistake it doesn't seem to tear them down the way it did before. They seem to try harder because they know, ‘It's okay if I mess up.’ It's not the same fear of failure that they had before.”
- Some teachers mentioned changing student language to help increase their self-efficacy. One teacher shared, “Changing the students' language from ‘I can't' to ‘I can' is very important and proper praise on what they have done. ‘Light bulb’ moments are key.”

8. How are you integrating real-world applied math strategies into your teaching practices? What does that look like in the classroom?

- Several teachers mentioned having monthly speakers from the community to explain math in daily jobs in common vocations. One example shared includes inviting a local restaurant to do a catering lesson using equations and proportional reasoning. One teacher explained, “We have a career and technical center on site so when we did a lesson on slope, I got with the building trades instructor and he did a lesson with the kids on how to cut out step stringers.”
- Teachers also use external resources such as YouTube videos for sharing relevant examples. One commented, “I’ve used YouTube videos and things like that for construction sites . . . where we talk about slope that may be occurring or different angles that are used on a job site, things of that nature.”

9. How are your students reacting to inclusion of these strategies in your classroom?

- Overall, teachers report that students have been receptive to the strategies and are asking for more hands-on activities. One teacher shared, “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 teacher noted, “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.”
- Another observed, “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.” Another teacher added, “Students are encouraging each other more, which is awesome.”
- In two of the groups, teachers mentioned they have not heard their students ask, “Why do I need to learn this math?”

10. What challenges are you facing in trying to integrate these strategies and how are you addressing those obstacles?

- Time was unanimously noted as an obstacle, e.g., time to incorporate new materials or practices, time to get kids to look at their mistakes and redo work, and time to find resources. One teacher said, “Probably the biggest challenge for me is just time because it takes time to either contact people or find material on the internet, things of that nature.”
- One teacher commented that some students are obstinate about changes, explaining, “I’ve got several kids in the one block that I’m really, really interested in making sure this works who are just totally obstinate about anything that I try.”
- Another teacher pointed out the difficulty in finding technical careers related to Algebra I.

11. How supportive is your principal regarding your participation in the RMIN project?

- According to the teachers, most principals have been very supportive in providing technology, giving leeway on some classroom items, and with scheduling. One teacher noted, “Our principal has been very supportive. I needed a piece of technology or a plug to actually work my iPad with my Elmo and he made sure that I had it. I mean, pretty much, he's told me that anything we need, just let him know and if he can possibly get it, make it happen, he will.”
- Another mentioned, “My principal has a very strong math background, but I'm not sure she sees validity quite yet.” It seems that some principals are not unsupportive, but do not fully understand the program. One teacher suggested, “I think it's more that they kind of look at it as something extra, or extra thinking that I'm doing, and not really looking at it as an integral part of the math curriculum.”
- Teachers reported some ambiguity about principal roles and how principals can support teachers in the project. As one teacher pointed out, “I don't know if he really knows what he should do to be supportive. And I guess I don't really know exactly at this point what I need him to do.”

12. What suggestions do you have for improving the RMIN project?

- A few teachers noted that the summer training institute was too much to cover in just four days. Teachers suggested that five days would have enabled a better pace. One teacher commented, “I believe four days wasn't enough during the summer. I think it needed to be the week, all five days.” Another teacher added, “It was so jam packed with various things that I actually was overwhelmed by a few things.”
- Some teachers believed that it would be more helpful if the DACUM sessions were held earlier. One suggested “Maybe having those sooner would've helped, maybe feeling a little bit more prepared on the lesson plan aspect.” Another commented, “I think it would've been nice to have the DACUM sessions a little sooner, but I know the beginning of the school year is crazy, and they have all their things that they're working on, too. I get how hard it is to schedule something like that, but I think it would've been nice to have it a little bit sooner.”
- Teachers suggested that having a resource bank of videos and sample lesson plans would be helpful. One teacher said, “Creating this bank of real-world lessons, it creates this teacher toolbox that you all can access at any point. I really like that one.”
- Other suggestions include changing the format of the lesson plans and creating small groups for teachers for sharing and discussing ideas. One teacher reported, “I would sacrifice a day in the classroom to get together with four or five of us who could sit down and say, ‘This is what I'm doing. These are the ideas I have.’ Going back to that real usable information that can be gathered from when teachers get together to learn math.”

Appendix D
Project Staff Interview Evaluation Brief

EVALUATION BRIEF: NOVEMBER 2017

RMIN KEY PROJECT STAFF INTERVIEW SUMMARY YEAR 1

During the week of Oct 30, 2017, the ICF evaluation team conducted individual phone interviews with five key RMIN project staff to reflect on their experiences with the project implementation in Year 1. These staff members included Hobart Harmon, Veronica Tate, Jennifer Stevens, Sandy Wilborn, and Dorothea Shannon. The interview recordings were transcribed for analysis. Key themes and patterns emerging across respondents are summarized below.

1. In your opinion, how is the RMIN project going?

The respondents unanimously felt that the project was going well and that it was off to a good start. For example:

- Facilitators are doing well, “adjusting to needs of teachers . . . being flexible and learning on their own too.”
- Consultants are doing “way beyond” what was expected of them (with the lesson plans).
- Staff is “thrilled” with how the project is going; “happy” with how well they’re “developing relationships with the teachers”
- The virtual network is “the heart of the project” and having it “up and running . . . has been critical” for getting the project “off to a smooth start.”
- The project has a “palpable excitement” about it.
- Having “the right mix of teachers” was also a catalyst for the project’s start up.
- Teachers are making “substantial progress” in becoming involved with their peers and developing an “initial grasp” of the lesson plans.
- Lesson plans are going “a little bit slower than what we thought.”

2. Tell me your perceptions of how participating teachers are experiencing the project.

The general consensus among the respondents was that, as expected, some teachers were excelling (early adopters), some were moving along at a typical pace (average), and there were a few who could use a little extra support (stragglers).

- For the most part, the project is getting “great positive feedback from the teachers.”
- Project staff are developing good relationships with the teachers.
- The project provided additional teacher support via webinars after the summer training institute (on technology, the Torsh platform, lesson plans).
- The majority of teachers are “enthusiastically participating” and “very involved and interested.”
- Some teachers have naturally emerged as “teacher-leaders.”

- Those teachers who are not moving forward as quickly as others may not be struggling so much with the technology as with “their desire to be outside of their norm,” or with circumstances within their school divisions or in their personal lives.

3. How are the principals supporting the teachers?

According to project staff, about 75% of the principals are making a good effort to provide support to participating teachers:

- Initially, principals helped teachers with technical aspects, e.g., getting permission slips from parents and getting technology support.
- As the project moves forward, the majority of the principals are touching base with teachers on a regular basis and help them connect with the IT department, as well as coordinating teachers’ time off for participating in a DACUM session.
- Some principals had discussions with their teachers about growth mindset and self-efficacy concepts.
- Principals were cautious to not “put pressure on teachers.”

However, some principals were reported to be more hands-off and/or perhaps having less understanding of the purpose of RMIN project:

- Most teachers do not feel like their principals have “a large role.”
- A few teachers initially expressed concerns that their principals were “more involved than they need to be.”
- The project is trying to focus on what it intends to accomplish rather than “becoming a vehicle for whole school reform.”
- Principals may not have left the training institute with “concrete ways” that they can support teacher innovation.
- There appears to be some ambiguity among project leadership in terms of their visions for the principals—on the one hand, feeling a need to “provide more clarity” but on the other hand, trying not to be overly “directive” with principals.

4. What do you view as the key components of the RMIN project?

All of the respondents identified the Torsh platform, lesson plans incorporating growth mindset and self-efficacy, and the teacher network itself as key elements of the project. One individual suggested that the project would be well-served in remembering that the project “really was about each individual teacher and their journey to improvement.”

One individual also emphasized the importance of process: “The main goal of the project was to develop a process by which teachers can innovate solutions to their own problems of practice.” All of these key elements are to “fit into us evolving and developing a process where teachers in rural areas are able to, through this network approach, develop solutions to their own problems of practice.”

5. Describe whether these key components have been implemented as planned.

The consensus was that the majority of the key elements had been implemented “as planned”:

- Teachers have changed their language and are good with the platform in general.
- Lesson plans are moving ahead slowly.
- The project had to “back up a little bit” to make sure that teachers fully understood how to use the Torsh Talent platform to upload videos and lesson plans.

6. Tell me about any changes that occurred in how the RMIN project is being implemented. And, describe why those changes were made.

The project has not made major modifications from the original plans, but has been “evolving” in terms of the best support to give teachers in the network and how to enable them to engage, which was a “big unknown” in the beginning. The only modification was related to the lesson plan expectations in response to the “slower than expected” submission of these plans:

- The expectations were not quite clear in terms of the number of lesson plans and videos that had to be produced by the end of the year, so staff felt it was important to stop and figure out whether the expectations were realistic.
- The delay in submission may also have to do with the “structure” of the lesson plan template and teachers’ “comfort level.”
- Staff suggested the need to think through more ways to encourage “participation across the groups of teachers.”

7. Based on your experience, what factors have served as facilitators to the RMIN project?

Common facilitators were identified as follows:

- The technology, i.e., Torsh Talent platform, has turned out to be an “excellent choice.”
- The consultants are not only “accommodating to work with project staff” but also have done “way beyond what expected” in terms of their engagement in the project.
- Facilitators are committed to making sure that teachers “understand their expectations.”
- The right technology and right people are attributable to “significant prior preparation.”

Additional facilitators included:

- Constant communication
- The teacher selection process, i.e., applying rather than being selected
- The DACUM sessions
- Valuable and timely evaluation results from the external evaluation team (e.g., training institute evaluation feedback) and from the project staff (e.g., webinar feedback)

8. What factors have served as challenges to the RMIN project? How are those challenges being addressed?

The respondents identified somewhat different sets of challenges, some focused on logistics and others focused on mindsets, expectations, and approaches. For example:

- Staff noted that getting the Virginia Department of Education’s approval (paperwork) to secure the extant student achievement data on state math test scores was more of a challenge than anticipated.
- The project is a bit challenged organizationally since people are “scattered” geographically.
- Teachers may not be used to the type of collaboration required by the project. Even when they work together in a group, it is “not about reflection and creating/developing something” but “more about sharing a practice they know and are already using.”
- A few teachers are not as savvy with technology, which is further complicated by policy differences within school divisions, i.e., issues such as filtering systems, permission levels, video calls, etc.
- It is “still unclear what it looks like in a classroom setting to promote self-efficacy and growth mindset and what it means for lesson plans.” It is a constant balancing act between “giving teachers all the tools” and “letting teachers lead it.”
- Staff suggested the need to ensure principals are participating by providing support to innovative teachers without “hounding” them, and suggested more discussion is needed around what that principal support looks like in practice.

9. What are your perceptions about how sustainable the RMIN project components will be in the future? (during the project and beyond)

Respondents shared somewhat different perspectives in their views on sustainability:

- *Sustainability by practice.* The more teachers use the self-efficacy and growth mindset language, the more they are “incorporating this into their lessons, which is going to make a big difference in learning.” As teachers see success in sharing and talking across schools, the more likely they are to continue practicing it.
- *Sustainability by funding support.* The concept of a network and providing a space (e.g., platform and webinar system) for “genuine, authentic collaboration for teachers and doing it more regularly” is critical. For RMIN to be sustainable beyond its grant cycle, it has to identify a “funding stream” to support “the structures and undergirding support systems.”
- *Sustainability by self-independence.* Sustainability is inherent in how well teachers become comfortable with each other and how RMIN can evolve and enable facilitators to help them. Too many innovation projects are designed for future success to be “co-dependent on outside support rather than more self-independent.”

Appendix E
Teacher Survey Evaluation Brief



EVALUATION BRIEF: NOVEMBER 2017

RMIN TEACHER SURVEY SUMMARY YEAR 1

A total of 34 teachers (100%) completed the online annual teacher survey in November 2017, which focused on their educational beliefs and practices related to their experience in the RMIN project in Year 1.

School Level: 62% Middle school 38% High school

Locale: 59% Southside VA 41% Southwest VA

Table 1. Teachers' Beliefs/Perceptions

Survey Items (and Construct Subscales in Shaded Rows)	N	Response Option Percentages					Descriptive Statistics	
		Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Mean	Std. Dev.
Applied Math Subscale	33						3.98	0.48
Integrating real-world applied math strategies into my teaching will improve my instructional practices.	33	0%	0%	6%	64%	30%	4.24	0.56
Integrating real-world applied math strategies into my instructional practices will improve student learning.	34	0%	3%	9%	53%	35%	4.21	0.73
I know how to integrate real-world math applications into my lesson plans.	34	0%	6%	21%	56%	18%	3.85	0.78
Integrating real-world applied math strategies into my teaching will significantly change how I provide classroom instruction.	34	0%	6%	24%	53%	18%	3.82	0.80
I am good at delivering lessons that incorporate real-world applied math strategies.	33	3%	3%	27%	55%	12%	3.70	0.85
Collaboration Subscale	31						3.86	0.54
In the RMIN project, there is a culture of peer collaboration among teachers that includes sharing of ideas and resources.	33	0%	3%	12%	64%	21%	4.03	0.68
In the RMIN project, there is a culture of peer collaboration among teachers that includes encouraging individual growth.	33	0%	3%	18%	61%	18%	3.94	0.70
As a result of participating in the RMIN project, I have developed positive working relationships with my RMIN peers.	34	0%	3%	18%	65%	15%	3.91	0.67
In the RMIN project, there is a culture of peer collaboration among teachers that includes providing constructive feedback to one another.	33	0%	6%	18%	64%	12%	3.82	0.73
The structure of the RMIN Networked Improvement Community (NIC) effectively meets my needs related to the project.	34	3%	3%	35%	50%	9%	3.59	0.82

Note: Percentage totals may not equal 100% Growth Midue to rounding.

Survey Items (and Construct Subscales in Shaded Rows)	N	Response Option Percentages					Descriptive Statistics	
		Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Mean	Std. Dev.
Growth Mindset Subscale	33						4.20	0.42
All students can and should have a growth mindset in math.	33	0%	0%	3%	39%	58%	4.55	0.56
Fostering students' growth mindset in math is part of my job responsibilities.	34	0%	0%	6%	38%	56%	4.50	0.62
When a particular classroom strategy doesn't work, I will try something different.	33	0%	0%	0%	58%	42%	4.42	0.50
My involvement in the RMIN project may be challenging, but I will keep at it.	33	0%	3%	0%	55%	42%	4.36	0.65
I like to set challenging goals for myself.	33	0%	0%	3%	64%	33%	4.30	0.53
I know I can increase my level of talent in a given area.	33	0%	0%	9%	55%	36%	4.27	0.63
I know I can significantly change my intelligence level.	34	0%	0%	12%	50%	38%	4.26	0.67
Integrating growth mindset strategies into my teaching will improve my instructional practices.	34	0%	0%	6%	62%	32%	4.26	0.57
Integrating growth mindset strategies into my instructional practices will improve student learning.	33	0%	0%	9%	58%	33%	4.24	0.61
I know how to foster a growth mindset in my students.	33	0%	0%	18%	58%	24%	4.06	0.66
Integrating growth mindset strategies into my teaching will significantly change how I provide classroom instruction.	34	0%	9%	26%	41%	24%	3.79	0.91
I know how to integrate growth mindset strategies into my math lesson plans.	33	0%	3%	30%	52%	15%	3.79	0.74
I am good at delivering lessons that foster a growth mindset in my students.	33	0%	6%	21%	67%	6%	3.73	0.67
Innovation Subscale	33						4.04	0.42
As a RMIN teacher, I am encouraged by RMIN project staff/consultants to try new ideas.	34	0%	0%	3%	53%	44%	4.41	0.56
As a RMIN teacher, I am eager to try new ideas.	33	0%	0%	3%	58%	39%	4.36	0.55
As a result of participating in the RMIN project, I have increased my ability to innovate effective lesson plans.	33	0%	3%	36%	42%	18%	3.76	0.79
Being innovative is more possible in the RMIN NIC than in my home school environment.	34	0%	3%	47%	38%	12%	3.59	0.74

Survey Items (and Construct Subscales in Shaded Rows)	N	Response Option Percentages					Descriptive Statistics	
		Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Mean	Std. Dev.
Observation Subscale	32						3.79	0.58
I know how to record videos of my classroom instruction for critiquing by other RMIN teachers.	33	0%	3%	12%	67%	18%	4.00	0.66
I know how to request feedback from RMIN peers on my video-recorded classroom instruction.	34	0%	6%	24%	59%	12%	3.76	0.74
I know how to provide constructive feedback to my RMIN peers about their instructional practices using project rubrics.	33	0%	6%	30%	58%	6%	3.64	0.70
Self-Efficacy Subscale	31						4.11	0.42
Fostering students' math self-efficacy is part of my job responsibilities.	33	0%	0%	0%	67%	33%	4.33	0.48
I know that I can exert a positive influence on the academic development of my students.	34	0%	0%	3%	62%	35%	4.32	0.53
Integrating self-efficacy strategies into my teaching will improve my instructional practices.	33	0%	0%	0%	70%	30%	4.30	0.47
I know that I can exert a positive influence on the personal development of my students.	34	0%	0%	0%	71%	29%	4.29	0.46
I can motivate my students to value mathematics as necessary for success in life.	33	0%	0%	12%	58%	30%	4.18	0.64
Integrating self-efficacy strategies into my instructional practices will improve student learning.	33	0%	0%	6%	70%	24%	4.18	0.53
I am convinced that I will continue to become more capable of delivering lessons that address my students' motivational needs.	34	0%	0%	15%	53%	32%	4.18	0.67
I know how to integrate self-efficacy strategies into my math lesson plans.	33	0%	3%	12%	64%	21%	4.03	0.68
I believe I am able to successfully teach all relevant math content to even the most difficult students.	34	0%	3%	15%	59%	24%	4.03	0.72
I can carry out innovative projects even in a school culture with skeptical colleagues.	34	0%	3%	21%	65%	12%	3.85	0.66
I am good at delivering lessons that foster students' self-efficacy.	33	0%	0%	33%	48%	18%	3.85	0.71
Integrating self-efficacy strategies into my teaching will significantly change how I provide classroom instruction.	32	0%	6%	19%	59%	16%	3.84	0.77
I know how to foster students' self-efficacy.	34	0%	6%	35%	56%	3%	3.56	0.66

Survey Items (and Construct Subscales in Shaded Rows)	N	Response Option Percentages					Descriptive Statistics	
		Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Mean	Std. Dev.
Technology Subscale	33						4.15	0.52
I have been provided with appropriate technology (i.e., iPad and Torsh Talent platform) to fulfill my RMIN responsibilities.	34	0%	3%	0%	24%	74%	4.68	0.64
The RMIN technology tools (i.e., iPad and Torsh Talent platform) have made it possible for me to share my instructional practices with other RMIN teachers.	34	0%	0%	12%	53%	35%	4.24	0.65
The Torsh Talent platform is an effective tool for collaborating with other RMIN teachers.	33	0%	0%	24%	39%	36%	4.12	0.78
The RMIN technology tools (i.e., iPad and Torsh Talent platform) have made it possible for me to document my instructional practices.	33	0%	3%	18%	64%	15%	3.91	0.68
The use of the Torsh Talent platform as a critiquing tool increases my interest in reflecting on lessons taught to students.	33	0%	3%	30%	58%	9%	3.73	0.67
Miscellaneous Items								
I have the necessary support from my principal to successfully participate in the RMIN project.	33	0%	3%	15%	42%	39%	4.18	0.81
I understand how a rural context can influence a student's interest in learning mathematics.	33	0%	0%	6%	64%	30%	4.24	0.56

Table 2. Teachers' Practices/Behaviors

Survey Items (and Construct Subscales in Shaded Rows)	N	Response Option Percentages <i>At least once a . . .</i>						Descriptive Statistics	
		Never	Year	Semester	Month	Week	Day	Mean	Std. Dev.
Growth Mindset Subscale	33							5.41	0.47
I encourage students to value the process of learning and problem solving, not just the end product.	33	0%	0%	0%	0%	33%	67%	5.67	0.48
I encourage students' growth mindset with affirmation statements (everyday language that encourages growth mindset).	33	0%	0%	0%	3%	30%	67%	5.64	0.55
I include relevant growth mindset strategies in my classroom practices.	33	0%	0%	3%	9%	48%	39%	5.24	0.75
I utilize strategies to create a growth-oriented environment in my classroom.	33	0%	3%	3%	12%	45%	36%	5.09	0.95
Innovation Subscale	33							4.79	0.59
I take risks in trying new teaching techniques, ideas, and/or resources in my instructional practices.	33	0%	0%	3%	21%	64%	12%	4.85	0.67
I seek to create new ideas or ways of doing things based on my experiences in the RMIN NIC.	33	0%	3%	3%	30%	45%	18%	4.73	0.91
Lesson Plans Subscale	32							4.27	0.63
I develop math lesson plans that integrate growth mindset strategies.	33	0%	0%	6%	21%	55%	18%	4.85	0.80
I develop math lesson plans that integrate self-efficacy strategies.	33	0%	0%	6%	33%	39%	21%	4.76	0.87
I develop math lesson plans that integrate real-world math applications.	33	3%	0%	3%	48%	39%	6%	4.39	0.90
Using the Torsh Talent platform, I collaborate with one or more RMIN teachers to gain ideas for revising my RMIN lesson plans.	32	28%	0%	22%	38%	13%	0%	3.06	1.44
Observation Subscale	29							2.60	1.32
Using RMIN technology tools (iPad and Torsh Talent platform), I record and upload videos of my classroom instruction in which I am implementing an RMIN lesson plan.	33	33%	3%	30%	24%	6%	3%	2.76	1.46
Using the Torsh Talent platform, I request constructive feedback from my RMIN peers on my recorded video of classroom instruction.	31	32%	3%	32%	23%	10%	0%	2.74	1.39
Using the Torsh Talent platform, I provide feedback to other RMIN teachers on their videos of classroom instruction.	31	39%	3%	19%	35%	3%	0%	2.61	1.41

Survey Items (and Construct Subscales in Shaded Rows)	N	Response Option Percentages <i>At least once a . . .</i>						Descriptive Statistics	
		Never	Year	Semester	Month	Week	Day	Mean	Std. Dev.
Self-Efficacy Subscale	33							5.23	0.54
I encourage students' self-efficacy with affirmation statements (everyday language that encourages self-efficacy).	33	0%	0%	0%	3%	39%	58%	5.55	0.56
I utilize strategies to create an energized, yet low-risk classroom environment.	33	0%	0%	6%	15%	33%	45%	5.18	0.92
I help students set challenging, yet attainable, learning goals.	33	0%	3%	0%	18%	39%	39%	5.12	0.93
I include relevant self-efficacy strategies in my classroom practices.	33	0%	0%	3%	15%	55%	27%	5.06	0.75
Self-Efficacy/Growth Mindset Subscale*	32							5.72	0.33
I praise students for their effort.	33	0%	0%	0%	0%	6%	94%	5.94	0.24
I praise students for their use of learning strategies.	32	0%	0%	0%	0%	19%	81%	5.81	0.40
I encourage students who are already doing well to keep trying to improve.	33	0%	0%	0%	0%	21%	79%	5.79	0.42
I assist students in evaluating and choosing new strategies when they are struggling.	33	0%	0%	0%	0%	27%	73%	5.73	0.45
I encourage students to try new strategies when they are struggling.	33	0%	0%	0%	0%	42%	58%	5.58	0.50
I provide concrete, realistic feedback to students on what they did well.	33	0%	0%	3%	3%	33%	61%	5.52	0.71
Miscellaneous Items									
I work with my RMIN peers to seek knowledge, skills, and strategies for application in our work for planning and delivery of instruction.	32	3%	16%	0%	59%	22%	0%	3.81	1.06
I use the Torsh Talent platform to participate in the RMIN NIC.	31	3%	3%	10%	45%	39%	0%	4.13	0.96

*These items fit within both concepts of Self-Efficacy and Growth Mindset, so were included in this new combined subscale.