



Math Teacher Recruitment and Retention Efforts

Signs of Success in Rural Colorado



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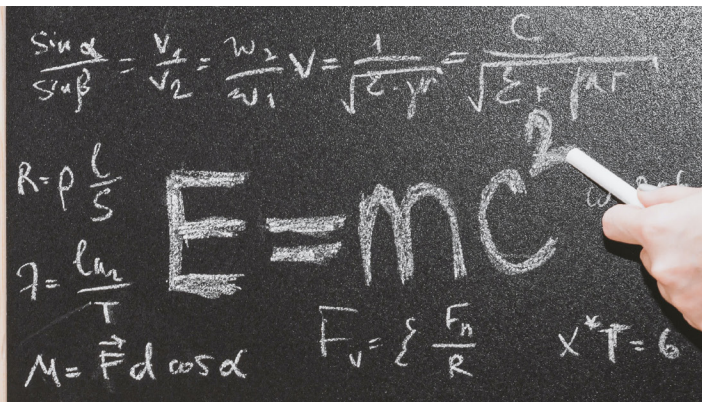
I. Executive Summary

This report demonstrates the collaborative impact of efforts by partners Generation Schools Network (GSN)/the Colorado Rural Education Collaborative (CREC), the Colorado South Central Board of Cooperative Educational Services (SC BOCES) and member districts, and the University of Colorado Colorado Springs (UCCS), to reduce math teacher shortages and improve math instructional quality across rural Colorado from 2017-2020. The work targeted 13 South Central BOCES school districts, which enroll almost 34,000 students across 10,000 square miles in Crowley, Custer, Fremont, Huerfano, Las Animas, Otero and Pueblo Counties.

The project goal was to reduce math teacher shortages and enhance teaching quality through professional development/coaching, continuing education, and community building for current and pre-service teachers.

Through a commitment by the Colorado Rural Education Collaborative to address three high needs areas in rural schools identified by Superintendents (Teacher/Leader Efficacy, Teacher Recruitment & Retention and STEM Integration), funds were secured from the Colorado Department of Education (CDE) for a Math/Science Partnership (MSP) grant (2017-2018) and from a Colorado Department of Higher Education (CDHE) Plan into Action grant (2018-2020) to support the work. During each grant period, approximately 25 teachers and pre-service teaching candidates participated in grant activities.

Of the Math/Science Partnership grant participants, 90% planned to remain in the teaching profession the following year. For the Plan into Action (PIA) grant, 91% of teachers planned to continue teaching in the upcoming school year. For both grants, the only participants leaving the profession were those planning to retire. Participants also reported improvements in their math content knowledge and teaching ability, and at least 90% of participating teachers indicated that their confidence and capacity to take on leadership roles increased after participating in the grant activities; a positive indicator that participating teachers may go on to serve as mentors for other teachers, sustaining and expanding the beneficial impact of the grants. The outcomes described in this report provide a promising roadmap for developing and retaining high-quality rural teachers and maximizing the potential for student success.



II. Problem Statement: Teacher Shortages and Need for Improved Instructional Quality

Although many factors inside and outside of the classroom impact student outcomes, teachers are the element of education that has the greatest effect on student performance¹ making recruiting, developing, and retaining high quality teachers essential.

Teacher Recruitment Challenges

In recent years, there have not been enough Colorado-trained teacher candidates graduating from higher education institutions to fill open teaching jobs in Colorado, particularly in content specializations such as math². Filling open teaching positions can be more challenging in rural districts due to limitations in: 1) their ability to offer a supportive network of colleagues in job-alike roles, 2) access to professional development opportunities, and 3) competitive salaries impacted by state funding formulas.

Additionally, rural districts located farther away from colleges with educator-preparation programs (EPPs) may have difficulty competing with urban and suburban districts for newly graduated teachers due to reduced visibility to candidates³. Individuals living in rural areas who have interest in teaching may choose not to enter EPPs due to the lack of college programs within close proximity. As a result, rural districts can benefit from developing additional outreach efforts to educator preparation programs to attract pre-teaching candidates and encourage EPPs to provide distance learning opportunities for potential teacher candidates in rural locations. Teacher immersion experiences for pre-teaching candidates and dedicated funding and resources to incentivize student teaching opportunities also positively impact recruitment⁴.

Teacher Retention and Teaching Quality Challenges

In a survey sent to South Central BOCES principals and superintendents in Spring 2016, districts reported existing or upcoming vacancies in 50% of all math and science teaching positions. In addition, at that time, 50% of teachers needed to improve instructional quality as evidenced by interim and state assessment results. Teacher turnover and low teaching quality are often interconnected issues; teachers who feel less prepared to lead a classroom are three times more likely to leave the profession than their colleagues who feel better prepared, while novice teachers who participate in teacher induction programs are two times less likely to leave teaching².

Unfortunately, most rural south-central Colorado school districts lack resources to provide strong teacher induction programs. The lack of professional development opportunities combined with low salaries, high costs of living, and challenging working conditions lead to higher rates of teacher turnover in rural areas². In 2013, the national attrition

rate for rural teachers was 8.4%, compared to 7.3% and 7.9% for suburban and urban teachers, respectively³. These factors influencing teacher retention and teaching quality highlight two key objectives for districts: 1) establish strategies to motivate teachers to remain in their current positions, and 2) empower teachers to recognize and improve the quality of their instruction.

Impact on Students

Due to teacher shortages, districts may be forced to fill classrooms with substitute or early-career teachers, who often lack specialization in content areas such as math^{2,5}. Student performance is negatively affected by both teacher turnover and by having less-experienced teachers who lack subject matter expertise⁶. Studies also suggest that students are negatively affected by high school-wide rates of teacher turnover, even if they are in classrooms without teacher attrition. This impact is due to the effect of teacher turnover on the sense of community and the accumulation of institutional knowledge within schools⁷. In addition, teacher turnover is costly for schools. The funds required to replace departing teachers represent resources that could otherwise fund activities and additional resources for students⁸. For these reasons, there is an urgent need for school districts to focus on reducing the rate of teacher turnover and increasing the number of long-term teachers with subject matter expertise who are well prepared to deliver high-quality instruction.



III. Addressing the Challenge: Strategies For Success

To address teacher recruitment and retention, GSN, SC BOCES, UCCS and districts prioritized community building activities to create a support system for math teachers and professional development to empower math teachers to enhance and refine their instructional approach and domain-specific knowledge.

Grant Goals

The common goals of the Math/Science Partnership (MSP) and Plan Into Action (PIA) grants included: A) improving teacher recruitment and retention and B) improving instructional quality. The table below compares and contrasts activities intended to address recruitment, quality, and retention goals across the contiguous grant efforts.

Math/Science Partnership Grant 2017-2018	Plan into Action (Math Mentors) Grant 2018-2020
<i>Virtual coaching by a highly distinguished math teacher with emphasis on content understanding and pedagogy to increase teacher confidence</i>	<i>Use of technology to develop a system to support more experienced math teachers in mentoring early career and pre-service math teachers</i>
<i>Professional learning communities to build capacity for experienced teachers to become teacher mentors</i>	<i>Virtual and in-person professional development opportunities</i>
<i>Support and assistance for teachers to obtain math / science licensure through higher education scholarships</i>	<i>Training to help math teachers gain confidence and capability to mentor novice math teachers</i>
<i>Rural recruitment immersion experiences for pre-service teacher candidates</i>	<i>Strengthening the recruitment pipeline between rural school districts and the UCCS Education Preparation Program</i>

Strategies for Achieving Grant Goals

- **Mentoring:**

Teacher mentorship plays a key role in student academic success, as well as the job satisfaction and success of new educators⁹. Grant efforts aimed to cultivate current teachers to serve as mentors for both novice teachers and pre-service teachers completing student teaching.

- **Professional Learning Communities (PLCs):**

PLCs provided opportunities for current teachers to build collegial relationships and collaborate with more experienced colleagues. Video conferencing technology enabled teachers to interact virtually despite significant physical distance. PLCs also provided opportunities for rural student teachers to engage and interact with current rural teachers increasing exposure to available professional development opportunities for novice teachers. While both grants included facilitated professional learning communities, the MSP grant featured only full group PLCs, while the Plan into Action grant featured two PLC types.

Full group PLC: Partner facilitated full group PLCs included organizing group work, supporting community building, promoting teacher reflection, and providing access to relevant resources. During the initial PLC's, capacity was built in mentor teachers to take over PLC facilitation. Topics included: students' mathematical understanding and discourse, data-driven instruction, a book study of *Mathematical Mindsets* by Jo Boaler, low-floor, high-ceiling math tasks and teacher-generated problems of practice with discussions led by mentor teachers.

Mentor PLCs: Five experienced SC BOCES math teachers participated in monthly virtual mentor PLCs during the PIA portion of the grant work. Mentors studied Hudson's (2009) *Five Factors of Effective Mentors: personal attributes, system requirements, pedagogical knowledge, modeling, and feedback*. Mentors put their learning into action through conversations with mentees (paired through the grant) as well as by supporting early career teachers in their school district and co-facilitating monthly group PLCs.

- **Professional Development:**

In-service, early career, and pre-service teachers came together in person for relationship building and professional learning activities each summer facilitated by UCCS professors. Summer Institutes provided: 1) a focus on increased math content knowledge, 2) instructive insights and group activities to learn and practice pedagogical strategies with a focus on specific techniques and activities that could be used directly in the classroom, and 3) opportunities to get to know other Colorado math teachers and teacher candidates.

Twenty-four educators attended the five-day MSP Summer Institute in June 2017 and 15 teachers attended the four-day Plan into Action Summer Institute in June 2019. In addition, 12 pre-teaching UCCS students attended the SI for a “speed-dating” session to learn from current teacher attendees about the advantages and challenges of teaching in rural areas.

- **Individual Coaching:**

A highly distinguished math teacher provided individualized coaching tailored to the topics discussed in the PLCs and the needs of individual teachers for coaching feedback on the design and implementation of their lesson plans. A bank of coaching hours was made available and 12 teachers elected to receive additional one to one coaching.

- **Strengthening the pipeline from educator preparation programs (EPP) to full-time teaching in rural districts:**

The grants provided for partners to strengthen the EPP pipeline through:

- Placing UCCS pre-service teachers in rural SC BOCES school districts for student teaching experiences
- Stipends supporting student teachers for teaching in rural schools
- Improving the pre-service teaching curriculum at UCCS
- Providing pre-service teachers with speed-dating and immersion experiences that led to student teaching placements in rural communities.



IV. Outcomes

Teachers and communities were positively impacted by this effort as demonstrated through the data summary provided below. In order to make the outcomes easily readable, further details are provided in the Research Appendix (instruments used, statistical analysis, recommendations for further study, etc).

Efforts to Improve Teaching Quality

Did grant participants exhibit increases in math content knowledge?

- Pre and post testing using the Learning Mathematics for Teaching (LMT) assessment indicated a statistically significant increase in the mathematical knowledge of secondary teachers on the geometry assessment.
- MSP teachers who participated in a survey answering the question: "*How would you rate your mathematics CONTENT knowledge?*" demonstrated statistically significant results suggesting their mathematics content knowledge at the end of the grant activities had increased.
- Answers to the same question pre and post question regarding the PIA Summer Institute saw 40% of respondents indicating that their content knowledge was higher at the end of the institute than at the beginning.

“

This has been by far the best PD I have had the pleasure of attending. I feel as though my knowledge base in several areas has jumped off the charts due to your training and efforts; THANK YOU for this!

– Early career elementary school teacher participating in MSP grant

”

Did grant participants exhibit increases in their confidence in their teaching abilities?

- Participation in the MSP Summer Institute and other grant activities was correlated with a positive increase in teachers' confidence in their teaching abilities suggesting that the professional development sessions and community building activities such as mentoring, coaching, and interactive PLCs may have helped increase teacher's pedagogical knowledge and confidence in the level of instruction they are delivering. This may also translate into improved instructional quality in the classroom.

“

My confidence in teaching math to my own students has increased. I had difficulty with that my first year. I could not explain things very well, I didn't ask enough questions to guide my students thinking and I wasn't sure how to provide that extra level of thinking to my students. Now, I have lots of ideas and have put them to use, even during the distance learning we are doing currently and my students are successful...and I really believe it is because I have acquired these new skills.

– Early career elementary school teacher participating in Plan into Action grant

”

Did the grant help teachers feel more confident in their ability to support other teachers?

- 90% or more of survey participants from both grants indicated that their confidence and capacity to take on leadership roles increased after participating in the grant activities.
- On the Plan into Action Summer Institute exit survey, the current teachers were asked if they would be interested in serving as a mentor teacher for a UCCS pre-service teacher candidate in the future. Of teacher respondents, 40% agreed that they were interested in serving as a mentor teacher and 53% of teachers indicated that they might be interested in serving as a mentor teacher for a UCCS pre-service teacher candidate in the future.

“

My confidence to take on a leadership role has increased as a result of some of the MSP activities. I now have information and knowledge to share with other education professionals about the pedagogy of math. I have tips that can help others become more in-tune math teachers. What I mean by that is to help them understand how to create a growth mindset atmosphere in their classroom.

–Early career elementary school teacher participating in MSP grant

”

What was the impact of professional development and community building components on teacher participants?

- At the conclusion of the Plan into Action grant, teachers responded to questions regarding the mentor/mentee relationships that were established as part of the grant. The responses were extremely positive and emphasized the benefits of having other teachers to talk to who understand your experiences and can give advice and be an experienced thought partner. Many participant responses were very similar to this representative response: *"The most beneficial element about the mentor/mentee relationship and conversations was the camaraderie and exchange of ideas"* (experienced elementary school teacher participating in Plan into Action grant).
- Overall, 84% of PLC participants found the PLC activities "useful" or "very useful".
- Through Summer Institute daily exit surveys, participants indicated enthusiasm for the material and activities and excitement about applying concepts in their own classrooms. "STEM Engineering Design" and "Active Thinking and Participation" sessions received the most positive feedback, with 87% of teachers ranking these sessions as "very useful".
- Current teachers also reported that the "speed-dating" sessions at the SI with pre-service teachers were fun and rewarding and served as a good reminder of the satisfaction associated with teaching in rural areas.

“

This experience was AMAZING!!! The friendships and connections I made from people who I never even met before in real life were wonderful. Then to have the opportunities to come together face-to-face and talk about what we love (teaching!) together was great. I loved all the different websites and resources we learned about and I will continue to use those in my classroom in the future. Thank you again for all your hard work to make this PLC possible and I will miss our monthly Wednesday meetings!

– Early career elementary school teacher participating in Plan into Action grant

”

“

This was really wonderful. Although there is still a ton to do and learn, I feel much more prepared going into my first year. I had many of my questions answered here, and it was so great to meet my colleagues.

– Novice high school teacher participating in MSP grant

”



Efforts to Improve Teacher Recruitment and Retention

What steps were taken to help recruit teachers to rural districts?

MSP Grant recruitment activities:

- SC BOCES Facebook page development to post job openings and relevant events.
- A three-day rural teacher immersion program attended by sixteen teacher candidates.

Plan into Action Grant recruitment activities:

- 12 UCCS pre-teaching candidates were offered the opportunity to participate in Summer Institute as well as a speed-dating event to ask questions and interact with current rural teachers. This resulted in one student teaching placement in Hoehne School District.
- A pipeline between EPPs and teachers in the south-central Colorado school districts who are now well-trained as mentors was established.

Additional Factors:

- GSN/CREC created a tab for rural teacher recruitment at: www.coruraledcollab.org. Open positions were posted and a monthly broadcast sent of open positions to 140 higher education institutions with educator preparation programs.
- In a previous grant, the SC BOCES benefited from a marketing package designed by an external firm (Battelle for Kids) to help recruit teachers.

What were the retention rates of grant participants?

- 90% of MSP grant participants remained in the teaching profession the following year, with 85% staying in the same school, and none of the participants leaving their positions due to a specific desire to leave the profession completely, outside of retirement.
- 91% of the teachers intended to continue teaching in the following school year, with one participant leaving the field due to retirement.

Further detail in regard to teacher retention can be found in the Research Appendix.



“

The program renewed my love for teaching math and showed me new ways in which to reach my students and hopefully show them that math is not scary or bad. This has me wanting to continue my education and even look at teaching other math classes in the future. I am excited to possibly have the opportunity to take college classes and improve my upper level math skills.

– Experienced secondary teacher participating in Plan into Action grant

”

V. Lessons Learned

What would motivate teachers to participate in similar professional development and community-building activities in the future?

- Of MSP, 95% participants and 92% of Plan into Action participants indicated that they would be interested in participating in similar future activities indicating a strong desire for content specific support through a learning community.
- Factors influencing teacher participation included “connection to other teachers” and “math content/ activities” (59%) followed closely by “university partners” and “support from their school or district” (50%). A table in the Research Appendix further delineates influences on teacher participation.
- The grant activities received high ratings for being professionally relevant, enhancing pedagogy and content knowledge, and providing opportunities to connect with other teachers. A chart of teacher ratings regarding the usefulness of each grant activity can be found in the research appendix.

“

You will never know the difference you made in my career and my life. As facilitators, you gave me the confidence to be the best educator I could be and not be afraid to advocate for myself or my students. This was such amazing math insight, but the inspiration you gave me will not be forgotten. How amazing it is that I got to spend so much time growing with this amazing collaboration. You are so appreciated!

– Early career elementary school teacher participating in Plan into Action

”

VI. Summary of Key Findings

- Teachers found tremendous value in the grant activities.
- Teachers benefitted from a variety of discussion forums such as small group, large group, and one-on-one mentoring. Participant feedback indicated that some teachers had questions about content they learned in the Summer Institutes but felt hesitant to ask follow-up questions in front of the large group. These participants were more comfortable raising questions in small breakout group sessions or through a coaching session.
- Recruiting participants for grant activities was challenging, despite extensive efforts by grant partners. It may be useful to survey grant participants to learn about the variables preventing teachers from participating in grant activities. Identifying variables may help improve recruitment for future activities.
- The main challenge to building mentor/mentee relationships was finding time to connect since mentors and mentees were frequently geographically separated due to the size of the BOCES.
- The grant likely increased the longevity of the participating teachers in the profession as well as improved their ability to deliver math instruction.
- Relationships with Educator Preparation Programs need to be established and nurtured over time to realize the full potential benefit of recruiting teachers as initial results of immersion experiences, the job fair and speed dating events were positive.
- Offering scholarships to higher education institutions where teachers can complete coursework for mathematics licensure or endorsement can increase math qualifications and likely longevity among teachers (5 teachers added degrees or credentials).
- Activities that helped increase the exposure of pre-teacher candidates to rural teaching opportunities correlated with the successful recruitment of some of the pre-teacher candidates to teach or student teach in rural districts.
- Having Backbone organizations/partners (BOCES + GSN) and a university partner come alongside the districts provided the critical support needed to acquire the grants and implement them successfully.

VII. Sustainability and Opportunities for Growth

- Participants frequently requested more grade level specific content. A strategy for future grants could include general concepts while also incorporating additional grade level specific content.
- Maintaining and expanding mentor/mentee relationships may also represent an opportunity for mentors to share grade level-specific insights in mentor/mentee pairings that are matched by grade level.
- Though many participants indicated satisfaction with the end-of-year e-portfolio, some participants indicated the need for more guidance and structure with this activity.
- A critical supporting component of the project was expanding the use of technology in interactions with fellow teachers, administrators and students. Technology (Zoom/Google/GoReact) played a fundamental role in facilitating virtual PLCs, networking and coaching opportunities. Technology skills can be built further among participants to encourage their own use of technology for maintaining a collegial community and better serving students.

“

I absolutely wish every math teacher in the state could be here. This is SO AMAZING! This is definitely grant money well spent and should be expanded / continued. BRAVO.”

– A MSP participant wrote after an in-person professional development event

”

VIII. Conclusions

Recent events have created unexpected and unprecedented challenges for educators making it more important than ever that teachers have resources to connect to their peers in service of their students. The use of technology to facilitate virtual interactions and alternate tools for learning will be imperative for the foreseeable future. In addition, ensuring that teachers feel well-trained and equipped with resources will be extremely valuable, as a teachers' mastery of math content and pedagogy will be crucial for teaching as methodologies continue to evolve.

The challenges of teacher well-being, instructional quality and teacher retention are likely to be on-going given the uncertainty and additional stress associated with teaching in these unpredictable times. Yet the outcomes from the work presented here suggest that there is cause for hope and optimism. The work completed in the Math/Science Partnership and Plan into Action grants demonstrated that teachers can find support and connection in virtual communities and individualized mentor/mentee connections aided by in-person connection opportunities.

Empowering teachers with additional content knowledge and pedagogy training appears to increase teacher satisfaction and enthusiasm for teaching, which helps protect against teachers leaving their jobs and/or the profession. These tools should also improve instructional quality. As teachers receive facilitated opportunities and resources and are trained as mentors, they can then pass on these skills to other teachers to strengthen and expand the interconnection between their districts increasing confidence and reinvigorating them in their work.

Although teacher recruitment and retention challenges continue, the efforts described here paint a picture of impactful strategies for supporting and retaining high-quality rural teachers in hard to fill subjects. Continuing similar efforts has the potential to truly benefit the teachers, students and rural communities.



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Research Appendix

Did grant participants exhibit increases in math content knowledge? Yes.

Learning Mathematics for Teaching (LMT) assessment:

Fifteen teachers in the MSP grant completed a pre and post test using the Learning Mathematics for Teaching (LMT) assessment. The LMT is designed to measure the mathematical teaching knowledge of groups of teachers, assessing changes in knowledge over time in response to professional development activities. Eight of the teachers were elementary school teachers and the other seven secondary teachers. Depending on grade level taught, teachers completed either the elementary or secondary algebra and geometry assessments. When assessed with a Wilcoxon signed rank test, the LMT scores increased from a group average of 0.21 to 0.63 with a statistically significant p-value of 0.02 (t-statistic=-2.2, p-value=0.04, Wilcoxon W=17.5, p-value=0.05).

MSP Pre/Post Survey Instrument Results

16 MSP teacher survey participants answered the question "*How would you rate your mathematics CONTENT knowledge?*" The average response on a Likert scale increased 1 point from 6.9 to 7.9 over a year-long period. The positive value of these scores suggests that the group of teachers started with above average understanding of secondary geometry math knowledge and exhibited an additional increase in their knowledge of this topic at the conclusion of the MSP grant. This suggests that the professional development activities in the MSP grant likely correlated with an increase in math content knowledge for some teachers. A future pre post analysis of a larger group of teachers participating in similar professional development activities would be useful for determining whether these professional development activities are beneficial for improving math content knowledge, and potentially improving the quality of math instruction. This difference was statistically significant on both a paired t-test and a non-parametric Wilcoxon signed-rank test.

Twenty-three MSP teacher participants completed surveys at the beginning and end of the MSP Summer Institute which included the same question as above: "*How would you rate your mathematics CONTENT knowledge?*" On a Likert scale with options from 1-10, the average response from participants increased slightly from 6.7 to 7.1. Although the increase was not statistically significant, approximately 40% of respondents scored their content knowledge higher at the end of the PD as compared to before the Summer Institute.

Did grant participants exhibit increases in their confidence in their teaching abilities?

MSP Pre/Post Survey Instrument Results:

Participants answered the question "*How would you rate your math TEACHING ability?*" on a Likert scale with options from 1-10. The average response from participants increased 2 points from 6.3 to 8.3. This difference was statistically significant on both a paired t-test and a non-parametric Wilcoxon signed-rank test (t-statistic=-3.1, p-value=0.01, Wilcoxon W=16, p-value=0.01). Results suggest teacher participants gained confidence in their teaching ability.

MSP Summer Institute Survey:

Teacher participants answered the question "*How would you rate your math TEACHING ability?*" on a Likert scale with options from 1-10. The average of the responses of the 23 MSP teacher participants was 6.5 at the start of the SI and 7.5 at the conclusion of the Summer Institute, a statistically significant increase (t-statistic=2.81, p-value=0.01). These results indicate that teachers felt more confident in their teaching ability after participating in the MSP Summer Institute. On the MSP end of grant survey, 18 of 20 teachers (90%) indicated that their confidence or capacity to take on leadership roles had increased. Similarly, 11 of 12 teachers (92%) who responded to the Plan into Action end of grant survey stated that their confidence and/or capacity to take on leadership roles had increased.

Did the grant help teachers feel more confident in their ability to support other teachers?

On the MSP end of grant survey, 18 of 20 teachers (90%) indicated that their confidence or capacity to take on leadership roles had increased. Similarly, 11 of 12 teachers (92%) who responded to the Plan into Action end of grant survey stated that their confidence and/or capacity to take on leadership roles had increased.

What was the impact of professional development and community building components on teacher participants?

MSP Pre/Post Survey Instrument Results:

In the MSP grant, for participants who filled out end of grant surveys, 17 out of 20 indicated that the professional learning communities (PLCs) were either "useful" or "very useful". The remaining three survey participants reported that the PLCs were "moderately useful". In the Plan into Action grant, 10 out of 12 survey respondents indicated that the professional learning communities (PLCs) were either "useful" or "very useful". The remaining two survey participants reported that the PLCs were "moderately useful".

The table below shows teacher ranking as to how useful they found various sessions of the Plan into Action Summer Institute.

Teacher Evaluations of the Plan into Action Summer Institute Activities			
	Very Useful	Useful	A Little Bit Useful
<i>Mathematical Frameworks & Mindsets</i>	73%	27%	---
<i>Learning Theories (3-act Math)</i>	60%	40%	---
<i>Speed Dating with Pre-Service Teachers</i>	80%	13%	7%
<i>5 Practices (Anticipating & Monitoring)</i>	80%	20%	---
<i>STEM Engineering Design</i>	87%	6.5%	6.5%
<i>Breakouts for Mentors & Novice Teachers</i>	80%	20%	---
<i>Collaborative Work Time</i>	80%	20%	---
<i>5 Practices (Selecting, Sequencing, Connecting)</i>	73%	20%	7%
<i>Active Thinking & Participation</i>	87%	13%	---

Plan Into Action Summer Institute Exit Survey:

Current teachers were asked if they would be interested in serving as a mentor teacher for a UCCS pre-service teacher candidate in the future. Six teachers agreed that they were interested in serving as a mentor teacher and 8 teachers indicated that they might be interested in serving as a mentor teacher for a UCCS pre-service teacher candidate in the future.

What were the retention rates of grant participants?

MSP retention rates:

Following the conclusion of the MSP grant, 17 of the 20 teachers who completed the end of year survey stayed at their current school in the same or in a similar teaching role. Of the remaining three teachers, one teacher was planning to retire, one teacher was taking parental leave, and one teacher was looking for a teaching position closer to home. Overall, this indicates that 90% of participants remained in the teaching profession the following year, with 85% staying in the same school, and none of the participants leaving their positions due to a specific desire to leave the profession completely, outside of retirement.

Plan into Action retention rates:

Of the 12 teachers who completed the Plan into Action end of year survey, nine planned to stay at their current school in the same or in a similar teaching role, two had accepted teaching positions at different schools, and one teacher was retiring. Overall, this indicates that 91% of the teachers intended to continue teaching in the following school year, with one participant leaving the field due to retirement.

What would motivate teachers to participate in similar professional development and community-building activities in the future?

Of the participants, 19 of 20 (95%) and 11 of the 12 Plan into Action participants (92%) who completed the end of grant survey indicated that they would be interested in participating in similar future activities. The table lists factors influencing their desire to participate in future activities.

Importance of Factors in Motivating Future Participation in Professional Development and Community-building Activities				
	Very Important	Important	Moderately Important	Slightly Important
<i>Stipend</i>	17%	33%	42%	8%
<i>Math Content / Activities</i>	59%	33%	8%	---
<i>Interaction with university partners</i>	50%	25%	17%	8%
<i>Support from school / district</i>	50%	33%	17%	---
<i>Connection with other teachers</i>	59%	33%	8%	---
<i>Teaching supplies</i>	25%	33%	33%	8%
<i>Opportunity to attend conferences</i>	33%	33%	17%	17%

Teachers also evaluated the usefulness of the MSP and Plan into Action grant activities and Summer Institute activities. The activities received high ratings for being professionally relevant, enhancing pedagogy and content knowledge, and providing opportunities to connect with other teachers.

Teacher Ratings of the Usefulness of Grant Activities			
	Very Useful	Useful	Moderately Useful
<i>MSP Coaching</i>	80%	20%	---
<i>MSP PLCs</i>	50%	35%	15%
<i>MSP Summer Institute</i>	88%	6%	6%
<i>MSP In-person PD</i>	79%	21%	---
<i>Math Mentors Mentor PLCs</i>	80%	20%	---
<i>Math Mentors Full Group PLCs</i>	67%	16.5%	16.5%
<i>Math Mentors Summer Institute</i>	91%	---	9%
<i>Math Mentors In-person PD</i>	90%	10%	---
<i>Math Mentors Mentoring Conversations/Check-ins</i>	58%	42%	---