

NM130302 Mathematically Connected Communities (MC2) Project

I. MSP Project Information

A. Project

1. Partnership title:

Answer: Mathematically Connected Communities (MC²) Project

2. MSP project director:

Answer: Wanda Bulger-Tamez

3. Project director phone number:

Answer: (575) 646-2755

4. Project director email address:

Answer: wguzman@nmsu.edu

5. Sources of Funding for this MSP project for the 12-month reporting period. (DO NOT include dollar values of in-kind contributions.)

MSP Grant Funded through Title II, Part B (\$):

Answer: 1169441

Other State Funds(\$):

Answer: 465000

LEA Funds (\$):

Answer: 300,000

B. Lead Organization

1. Number of partner organizations/institutions (including the lead organization):

Answer: 23

2. Name of lead organization/institutions:

Answer: New Mexico State University

3. Type of lead organization/institution:

Answer: Institution of Higher Education (IHE)

C. Partner Organizations

Answer:

Partner 1

1. Name of participating organization/institution:

Answer: Wagon Mound Public Schools

2. Type of participating organization/institution:

Answer: Local education agency (LEA)

Other (Please Specify):

Answer:

Does this partner meet your state's definition of a high-need LEA? (This definition may be included in Section X of this APR. Otherwise, it is the definition that was listed in the RFP)

3. Partner's Roles on MSP Project:

Answer:

Identify and recruit teachers for professional development and/or comparison group

Participate in/receive professional development

Provide mentors/coaches/teacher leaders

Collect and/or provide data

Analyze data

Provide technical assistance to teachers and/or project

Provide teacher support (e.g., substitute teachers, release time, planning time, teacher leaders)

Partner 2

1. Name of participating organization/institution:

Answer: Socorro Consolidated Schools

2. Type of participating organization/institution:

Answer: Local education agency (LEA)

Other (Please Specify):

Answer:

Does this partner meet your state's definition of a high-need LEA? (This definition may be included in Section X of this APR. Otherwise, it is the definition that was listed in the RFP)

3. Partner's Roles on MSP Project:

Answer:

Identify and recruit teachers for professional development and/or comparison group

Participate in/receive professional development

Provide mentors/coaches/teacher leaders

Collect and/or provide data

Analyze data

Provide technical assistance to teachers and/or project

Provide teacher support (e.g., substitute teachers, release time, planning time, teacher leaders)

Partner 3

1. Name of participating organization/institution:

Answer: Roswell Independent Schools

2. Type of participating organization/institution:

Answer: Local education agency (LEA)

Other (Please Specify):

Answer:

Does this partner meet your state's definition of a high-need LEA? (This definition may be included in Section X of this APR. Otherwise, it is the definition that was listed in the RFP)

3. Partner's Roles on MSP Project:

Answer:

Identify and recruit teachers for professional development and/or comparison group

Participate in/receive professional development

Provide mentors/coaches/teacher leaders

Collect and/or provide data

Analyze data

Provide technical assistance to teachers and/or project

Provide teacher support (e.g., substitute teachers, release time, planning time, teacher leaders)

Partner 4

1. Name of participating organization/institution:

Answer: Loving Municipal Schools

2. Type of participating organization/institution:

Answer: Local education agency (LEA)

Other (Please Specify):

Answer:

Does this partner meet your state's definition of a high-need LEA? (This definition may be included in Section X of this APR. Otherwise, it is the definition that was listed in the RFP)

3. Partner's Roles on MSP Project:

Answer:

Identify and recruit teachers for professional development and/or comparison group

Participate in/receive professional development

Provide mentors/coaches/teacher leaders

Collect and/or provide data

Analyze data

Provide technical assistance to teachers and/or project

Provide teacher support (e.g., substitute teachers, release time, planning time, teacher leaders)

Partner 5

1. Name of participating organization/institution:

Answer: Los Lunas Public Schools

2. Type of participating organization/institution:

Answer: Local education agency (LEA)

Other (Please Specify):

Answer:

Does this partner meet your state's definition of a high-need LEA? (This definition may be included in Section X of this APR. Otherwise, it is the definition that was listed in the RFP)

3. Partner's Roles on MSP Project:

Answer:

Identify and recruit teachers for professional development and/or comparison group

Participate in/receive professional development

Provide mentors/coaches/teacher leaders

Collect and/or provide data

Analyze data

Provide technical assistance to teachers and/or project

Provide teacher support (e.g., substitute teachers, release time, planning time, teacher leaders)

Partner 6

1. Name of participating organization/institution:
Answer: Alamogordo Public Schools

2. Type of participating organization/institution:
Answer: Local education agency (LEA)

Other (Please Specify):
Answer:

Does this partner meet your state's definition of a high-need LEA? (This definition may be included in Section X of this APR. Otherwise, it is the definition that was listed in the RFP)

3. Partner's Roles on MSP Project:
Answer:

Identify and recruit teachers for professional development and/or comparison group

Participate in/receive professional development

Provide mentors/coaches/teacher leaders

Analyze data

Provide technical assistance to teachers and/or project

Provide teacher support (e.g., substitute teachers, release time, planning time, teacher leaders)

Partner 7

1. Name of participating organization/institution:
Answer: Artesia Public Schools

2. Type of participating organization/institution:
Answer: Local education agency (LEA)

Other (Please Specify):

Answer:

Does this partner meet your state's definition of a high-need LEA? (This definition may be included in Section X of this APR. Otherwise, it is the definition that was listed in the RFP)

3. Partner's Roles on MSP Project:

Answer:

Identify and recruit teachers for professional development and/or comparison group

Participate in/receive professional development

Provide mentors/coaches/teacher leaders

Collect and/or provide data

Analyze data

Provide technical assistance to teachers and/or project

Provide teacher support (e.g., substitute teachers, release time, planning time, teacher leaders)

Partner 8

1. Name of participating organization/institution:

Answer: Belen Consolidated Schools

2. Type of participating organization/institution:

Answer: Local education agency (LEA)

Other (Please Specify):

Answer:

Does this partner meet your state's definition of a high-need LEA? (This definition may be included in Section X of this APR. Otherwise, it is the definition that was listed in the RFP)

3. Partner's Roles on MSP Project:

Answer:

Identify and recruit teachers for professional development and/or comparison group

Participate in/receive professional development

Provide mentors/coaches/teacher leaders

Collect and/or provide data

Analyze data

Provide technical assistance to teachers and/or project

Provide teacher support (e.g., substitute teachers, release time, planning time, teacher leaders)

Partner 9

1. Name of participating organization/institution:

Answer: Carrizozo Municipal School District

2. Type of participating organization/institution:

Answer: Local education agency (LEA)

Other (Please Specify):

Answer:

Does this partner meet your state's definition of a high-need LEA? (This definition may be included in Section X of this APR. Otherwise, it is the definition that was listed in the RFP)

3. Partner's Roles on MSP Project:

Answer:

Identify and recruit teachers for professional development and/or comparison group

Participate in/receive professional development

Provide mentors/coaches/teacher leaders

Collect and/or provide data

Analyze data

Provide technical assistance to teachers and/or project

Provide teacher support (e.g., substitute teachers, release time, planning time, teacher leaders)

Partner 10

1. Name of participating organization/institution:

Answer: Corona Public Schools

2. Type of participating organization/institution:

Answer: Local education agency (LEA)

Other (Please Specify):

Answer:

Does this partner meet your state's definition of a high-need LEA? (This definition may be included in Section X of this APR. Otherwise, it is the definition that was listed in the RFP)

3. Partner's Roles on MSP Project:

Answer:

Identify and recruit teachers for professional development and/or comparison group

Participate in/receive professional development

Provide mentors/coaches/teacher leaders

Collect and/or provide data

Analyze data

Provide technical assistance to teachers and/or project

Provide teacher support (e.g., substitute teachers, release time, planning time, teacher leaders)

Partner 11

1. Name of participating organization/institution:

Answer: Deming Public Schools

2. Type of participating organization/institution:

Answer: Local education agency (LEA)

Other (Please Specify):

Answer:

Does this partner meet your state's definition of a high-need LEA? (This definition may be included in Section X of this APR. Otherwise, it is the definition that was listed in the RFP)

3. Partner's Roles on MSP Project:

Answer:

Identify and recruit teachers for professional development and/or comparison group

Participate in/receive professional development

Provide mentors/coaches/teacher leaders

Collect and/or provide data

Analyze data

Provide technical assistance to teachers and/or project

Provide teacher support (e.g., substitute teachers, release time, planning time, teacher leaders)

Partner 12

1. Name of participating organization/institution:

Answer: Espanola Public Schools

2. Type of participating organization/institution:

Answer: Local education agency (LEA)

Other (Please Specify):

Answer:

Does this partner meet your state's definition of a high-need LEA? (This definition may be included in Section X of this APR. Otherwise, it is the definition that was listed in the RFP)

3. Partner's Roles on MSP Project:

Answer:

Identify and recruit teachers for professional development and/or comparison group

Participate in/receive professional development

Provide mentors/coaches/teacher leaders

Collect and/or provide data

Analyze data

Provide technical assistance to teachers and/or project

Provide teacher support (e.g., substitute teachers, release time, planning time, teacher leaders)

Partner 13

1. Name of participating organization/institution:

Answer: Gadsden Independent School District

2. Type of participating organization/institution:

Answer: Local education agency (LEA)

Other (Please Specify):

Answer:

Does this partner meet your state's definition of a high-need LEA? (This definition may be included in Section X of this APR. Otherwise, it is the definition that was listed in the RFP)

3. Partner's Roles on MSP Project:

Answer:

Identify and recruit teachers for professional development and/or comparison group

Participate in/receive professional development

Provide mentors/coaches/teacher leaders

Collect and/or provide data

Analyze data

Provide technical assistance to teachers and/or project

Provide teacher support (e.g., substitute teachers, release time, planning time, teacher leaders)

Partner 14

1. Name of participating organization/institution:

Answer: Hatch Valley Public School

2. Type of participating organization/institution:

Answer: Local education agency (LEA)

Other (Please Specify):

Answer:

Does this partner meet your state's definition of a high-need LEA? (This definition may be included in Section X of this APR. Otherwise, it is the definition that was listed in the RFP)

3. Partner's Roles on MSP Project:

Answer:

Identify and recruit teachers for professional development and/or comparison group

Participate in/receive professional development

Provide mentors/coaches/teacher leaders

Collect and/or provide data

Analyze data

Provide technical assistance to teachers and/or project

Provide teacher support (e.g., substitute teachers, release time, planning time, teacher leaders)

Partner 15

1. Name of participating organization/institution:

Answer: Mora Independent Schools

2. Type of participating organization/institution:

Answer: Local education agency (LEA)

Other (Please Specify):

Answer:

Does this partner meet your state's definition of a high-need LEA? (This definition may be included in Section X of this APR. Otherwise, it is the definition that was listed in the RFP)

3. Partner's Roles on MSP Project:

Answer:

Identify and recruit teachers for professional development and/or comparison group

Participate in/receive professional development

Provide mentors/coaches/teacher leaders

Collect and/or provide data

Analyze data

Provide technical assistance to teachers and/or project

Provide teacher support (e.g., substitute teachers, release time, planning time, teacher leaders)

Partner 16

1. Name of participating organization/institution:

Answer: Taos Municipal School District

2. Type of participating organization/institution:

Answer: Local education agency (LEA)

Other (Please Specify):

Answer:

Does this partner meet your state's definition of a high-need LEA? (This definition may be included in Section X of this APR. Otherwise, it is the definition that was listed in the RFP)

3. Partner's Roles on MSP Project:

Answer:

Identify and recruit teachers for professional development and/or comparison group

Participate in/receive professional development

Provide mentors/coaches/teacher leaders

Collect and/or provide data

Analyze data

Provide technical assistance to teachers and/or project

Provide teacher support (e.g., substitute teachers, release time, planning time, teacher leaders)

Partner 17

1. Name of participating organization/institution:

Answer: Truth or Consequences Municipal Schools

2. Type of participating organization/institution:

Answer: Local education agency (LEA)

Other (Please Specify):

Answer:

Does this partner meet your state's definition of a high-need LEA? (This definition may be included in Section X of this APR. Otherwise, it is the definition that was listed in the RFP)

3. Partner's Roles on MSP Project:

Answer:

Identify and recruit teachers for professional development and/or comparison group

Participate in/receive professional development

Provide mentors/coaches/teacher leaders

Collect and/or provide data

Analyze data

Provide technical assistance to teachers and/or project

Provide teacher support (e.g., substitute teachers, release time, planning time, teacher leaders)

Partner 18

1. Name of participating organization/institution:
Answer: Des Moines Municipal Schools

2. Type of participating organization/institution:
Answer: Local education agency (LEA)

Other (Please Specify):
Answer:

Does this partner meet your state's definition of a high-need LEA? (This definition may be included in Section X of this APR. Otherwise, it is the definition that was listed in the RFP)

3. Partner's Roles on MSP Project:
Answer:

Identify and recruit teachers for professional development and/or comparison group

Participate in/receive professional development

Provide mentors/coaches/teacher leaders

Collect and/or provide data

Analyze data

Provide technical assistance to teachers and/or project

Provide teacher support (e.g., substitute teachers, release time, planning time, teacher leaders)

Partner 19

1. Name of participating organization/institution:
Answer: Cimarron Municipal Schools

2. Type of participating organization/institution:
Answer: Local education agency (LEA)

Other (Please Specify):
Answer:

Does this partner meet your state's definition of a high-need LEA? (This definition may be included in Section X of this APR. Otherwise, it is the definition that was listed in the RFP)

3. Partner's Roles on MSP Project:

Answer:

Identify and recruit teachers for professional development and/or comparison group

Participate in/receive professional development

Provide mentors/coaches/teacher leaders

Collect and/or provide data

Analyze data

Provide technical assistance to teachers and/or project

Provide teacher support (e.g., substitute teachers, release time, planning time, teacher leaders)

Partner 20

1. Name of participating organization/institution:

Answer: Maxwell Municipal Schools

2. Type of participating organization/institution:

Answer: Local education agency (LEA)

Other (Please Specify):

Answer:

Does this partner meet your state's definition of a high-need LEA? (This definition may be included in Section X of this APR. Otherwise, it is the definition that was listed in the RFP)

3. Partner's Roles on MSP Project:

Answer:

Identify and recruit teachers for professional development and/or comparison group

Participate in/receive professional development

Provide mentors/coaches/teacher leaders

Collect and/or provide data

Analyze data

Provide technical assistance to teachers and/or project

Provide teacher support (e.g., substitute teachers, release time, planning time, teacher leaders)

Partner 21

1. Name of participating organization/institution:
Answer: Western New Mexico University

2. Type of participating organization/institution:
Answer: Institution of Higher Education (IHE)

Other (Please Specify):
Answer:

Does this partner meet your state's definition of a high-need LEA? (This definition may be included in Section X of this APR. Otherwise, it is the definition that was listed in the RFP)

3. Partner's Roles on MSP Project:
Answer:

Design professional development

Provide professional development

Provide technical assistance to teachers and/or project

Advise project

Partner 22

1. Name of participating organization/institution:
Answer: New Mexico State University

2. Type of participating organization/institution:
Answer: Institution of Higher Education (IHE)

Other (Please Specify):
Answer:

Does this partner meet your state's definition of a high-need LEA? (This definition may be included in Section X of this APR. Otherwise, it is the definition that was listed in the RFP)

3. Partner's Roles on MSP Project:
Answer: Lead organization

Project management and administration

Design professional development

Identify and recruit teachers for professional development and/or comparison group

Provide professional development

Provide mentors/coaches/teacher leaders

Evaluate the MSP

Collect and/or provide data

Analyze data

Provide technical assistance to teachers and/or project

Advise project

Partner 23

1. Name of participating organization/institution:

Answer: University of New Mexico - Center for Education Policy and Research

2. Type of participating organization/institution:

Answer: Institution of Higher Education (IHE)

Other (Please Specify):

Answer:

Does this partner meet your state's definition of a high-need LEA? (This definition may be included in Section X of this APR. Otherwise, it is the definition that was listed in the RFP)

3. Partner's Roles on MSP Project:

Answer:

Evaluate the MSP

Advise project

II. MSP Project Abstract

A. Project Abstract

Answer:

The Mathematically Connected Communities (MC²) implementation and research model is

designed in partnership with mathematicians, math educators, and researchers from three universities (New Mexico State University, Western New Mexico University, and University of New Mexico) and teacher leaders, teachers, and principals from twenty school districts across New Mexico that represent the demographic of the state. Research districts include six rural districts, four small districts, and ten mid-size districts. The goal of MC² is to improve the mathematics learning for students in grades K-12 through professional learning experiences that 1) build teachers' mathematics knowledge and pedagogical skills for effective teaching and 2) promote district capacity for creating support systems and structures for educators' ongoing, job-embedded professional learning. This year, we adopted a research protocol to study the impact of partnership activities on principal, teacher, and student learning. The research data includes teacher surveys and focus groups, classroom observations, and teachers and student assessment of mathematics knowledge.

The MC² model builds the capacity of partner school districts in the state to effectively implement Common Core State Standards for Mathematics (CCSS-M). Effective implementation means: a) all students have the opportunity to learn the CCSS-M through actively engaging in rich mathematics content and the CCSS-M Standards for Mathematical Practice; b) all K-12 teachers of mathematics in our research districts develop the mathematics needed for effectively teaching and study their teaching practices through collaboration with other teachers; c) the members of the system (district administrators, principals, teachers, students, and parents) are able to articulate the shared expectations of their district K-12 mathematics program; and d) stakeholders actively assess and monitor progress towards shared goals of student and teacher learning.

In order to realize full and effective implementation of CCSS-M, the MC² partnership provides structures and processes for professional learning in three areas: (1) building teacher mathematics content knowledge of CCSS-M and developing pedagogical skills in implementation of Math Practices to improve students' mathematics learning; (2) building leadership capacity to establish and support high quality mathematics instruction and coherent K-12 math programs in districts/schools; and (3) providing on-site support including district-wide professional learning for mathematics teachers, school-based professional learning communities, and classroom-based follow-up to ensure students' mathematics learning and achievement.

All partner research districts will participate in:

- Summer Institutes with both one- and two-week options. The focus of the institutes is to develop teachers' mathematics content knowledge of CCSS-M and cultivate pedagogical practices for improved classroom learning.
- Mathematics Leadership Academies for district leadership teams which consist of district administrators, principals, instructional coaches, and teacher leaders. The purpose is to build district capacity in developing structures needed for on-going professional learning within each district.
- Development of district K-12 mathematics implementation plans to ensure district professional learning structures and opportunities to build professional knowledge needed to teach CCSS-M effectively are in place for all math teachers.
- Ongoing professional learning at district and school sites during the school year. The purpose is to provide classroom-based support for teachers in the implementation of CCSS-M through a standards-based learning environment (SBLE) that engages all students in learning mathematics.
- Math Virtual Learning Communities to provide additional math content development in CCSS-M content strands and to provide K-12 teachers in rural or isolated situations with a connection to colleagues for professional learning.

The research and evaluation design for the MC² project provides for the collection and analysis of both quantitative and qualitative data. The analysis of the data will include an examination of the relationships between student achievement and 1) teacher content and pedagogical knowledge for teaching mathematics; 2) the amount and type of professional development teachers and school/district leaders receive, and 3) documented changes in district policies and classroom practices.

III. Responsibilities

A. Administer Overall Program

1. % Provided by K-12 Institutions:

Answer: 20

2. % Provided by IHE faculty (Institutions of Higher Education):

Answer: 10

3. % Provided by Other (Please specify): Project Staff

Answer: 70

B. Design Professional Development

1. % Provided by K-12 Institutions:

Answer: 20

2. % Provided by IHE faculty (Institutions of Higher Education):

Answer: 40

3. % Provided by Other (Please specify): Project Staff

Answer: 40

C. Deliver Professional Development

1. % Provided by K-12 Institutions:

Answer: 20

2. % Provided by IHE faculty (Institutions of Higher Education):

Answer: 40

3. % Provided by Other (Please specify): Project Staff

Answer: 40

D. Evaluate MSP

1. % Provided by K-12 Institutions:

Answer: 20

2. % Provided by IHE faculty (Institutions of Higher Education):

Answer: 20

3. % Provided by Other (Please specify): Project Staff

Answer: 60

IV. Professional Development

A. Number of University Faculty Involved in MSP Project

1. Number of Mathematics faculty:

Answer: 7

2. Number of Science faculty:

Answer: 0

3. Number of Engineering faculty:

Answer: 0

4. Number of Education faculty:

Answer: 2

5. Number of Technology/Computer Science faculty:

Answer: 0

6. Number of other faculty involved:

Answer:

(Please specify discipline):

B. Indicate the Primary Goal for the Intervention

1. Please select the main goal of the MSP project:

Answer: Both - Improving individual teacher's content knowledge and training teacher leaders are equally important aspects of our program

C. Total Number of Participating Educators

1. Total number of teachers and/or administrators receiving MSP professional development in

Math or Science: (Do not double-count teachers for this figure).

Answer: 364

D. Elementary School Teachers

1. Total number of elementary school teachers:

Answer: 257

A. Regular core content teachers: Elementary school:

Answer: 207

B. Gifted and talented teachers: Elementary school:

Answer: 0

C. Special education teachers: Elementary school:

Answer: 12

D. Teachers of English language learners: Elementary school:

Answer: 26

E. Non-teaching math teacher coaches (full or part time):Elementary school:

Answer: 12

F. Non-teaching science teacher coaches (full or part time):Elementary school:

Answer: 0

G. Paraprofessionals: Elementary school:

Answer: 0

2. Total number of elementary school teachers who primarily work in a high-need school, as defined by your state:

Answer: 257

E. Middle School Teachers

1. Total number of middle school teachers:

Answer: 61

A. Regular core content teachers: Middle school:

Answer: 47

B. Gifted and talented teachers: Middle school:

Answer: 0

C. Special education teachers: Middle school:

Answer: 6

D. Teachers of English language learners: Middle school:

Answer: 2

E. Non-teaching math teacher coaches (full or part time): Middle school:

Answer: 6

F. Non-teaching science teacher coaches (full or part time): Middle school:

Answer: 0

G. Paraprofessionals: Middle school:

Answer: 0

2. Total number of middle school teachers who primarily work in a high-need school, as defined by your state:

Answer: 61

F. High School Teachers

1. Total number of high school teachers:

Answer: 42

A. Regular core content teachers: High school:

Answer: 35

B. AP/IB: High school:

Answer: 1

C. Special education teachers: High school:

Answer: 2

D. Teachers of English language learners: High school:

Answer: 0

E. Non-teaching math teacher coaches: High school:

Answer: 4

F. Non-teaching science teacher coaches: High school:

Answer: 0

G. Paraprofessionals: High school:

Answer: 0

2. Total number high school teachers who primarily work in a high-need school, as defined by your state:

Answer: 42

G. Administrators

1. Total number of administrators:

Answer: 4

A. Administrators: Elementary school:

Answer: 2

B. Administrators: Middle school:

Answer:

C. Administrators: High school:

Answer:

D. Other (please describe): District Level Administrator

Answer: 2

H. Participant Students

1. Number of elementary school students taught by participating teachers:

Answer: 4100

2. Number of middle school students in math and/or science classes taught by participating teachers:

Answer: 3680

3. Number of high school students in math and/or science classes taught by participating teachers:

Answer: 2720

4. TOTAL number of students in math and/or science classes taught by participating teachers. (This should be the sum of the number of students in elementary school plus middle school plus high school, as reported above):

Answer: 10500

V. Professional Development Models

A. Contact Hours

Answer: 51

B. Type of Professional Development Activities

Answer: Summer Institutes with additional or follow up activities

B. i. Summer Institutes

1. Total duration in HOURS per participant (on average):

Answer: 40

B. ii. Academic Year Professional Development

1. Duration on average of HOURS per participant for all academic year professional development activities. (Do not include hours for the summer institute): 11

Answer: On-site professional development

C. Description of Professional Development Model

Answer: Summer professional learning experiences were designed and facilitated by seven research mathematicians, two math educators, 35 teacher leaders from partnering districts, and project staff. The focus of the summer professional development (PD) was algebraic concepts across grades kindergarten-Algebra I and classroom implementation of CCSS-M.

The 2014 Summer PD included a one- and two-week options: Week 1 – Math Lab and Week 2 – Math Institute. 53 teachers participated in both Math Lab and Math Institute for a total of 70 hours of summer professional development. An additional 311 teachers participated in Math Institute only for a total of the 35 hours. The weighted average of summer professional development hours for both groups combined (364 teachers) is 40 hours.

Two-day Math Leadership Academies for district administrators, principals, and instructional coaches were designed to understand how to create a school infrastructure to grow professionally in the implementation of CCSS-M. In addition to four principals who attended the full one-week academy, 39 attended the leadership academy (13 hours) in summer 2014.

Follow-up professional learning included school- and classroom-based support for implementation; online learning communities; and district-wide professional development; and leadership support.

A more detailed description of the PD model is uploaded in supplemental documentation.

VI. Professional Development Content and Practices

A. Mathematics Content and Practices

1. Did your MSP project provide training in math content or processes in the MSP professional development during this 12-month reporting period?

Answer: Yes

2. Please indicate the major content, topics, or practices of mathematics taught to teachers in the MSP activities during this 12-month period. Select all that apply and indicate the GRADE

LEVELS OF TEACHERS to whom each topic was taught.

2.1 Mathematical Practices:

Answer: Elementary School Teachers Middle School Teachers High School Teachers

2.2 Number and Operations:

Answer: Elementary School Teachers

2.3 Ratios and Proportional Relationships:

Answer:

2.4 Algebra:

Answer: Middle School Teachers High School Teachers

2.5 Geometry:

Answer: Middle School Teachers

2.6 Measurement and Data:

Answer: Middle School Teachers

2.7 Probability and Statistics:

Answer:

2.8 Problem Solving:

Answer: Elementary School Teachers High School Teachers

2.9 Reasoning and Proof:

Answer:

2.10 Modeling and Functions:

Answer:

2.11 Calculus:

Answer:

2.12 Other (Please Specify):

Answer:

B. Science Content and Practices

1. Did your MSP project provide training in science content or processes in the MSP professional development during this 12-month reporting period?

Answer: No

2. Please indicate the major content, topics, or practices of science taught to teachers in the MSP activities during this 12-month period. Select all that apply and indicate the GRADE LEVELS OF TEACHERS to whom each topic was taught.

2.1 Scientific Practices:

Answer:

2.2 Physical Science/Physics:

Answer:

2.3 Chemistry:

Answer:

2.4 Life Science/Biology:

Answer:

2.5 Earth and Space Science:

Answer:

2.6 Technology:

Answer:

2.7 Engineering:

Answer:

2.8 Other (Please Specify):

Answer:

VII. Program Evaluation

A. Type of Evaluator

Please select from the list below the best description of your project's evaluator. (Select all that apply.)

Answer: Hired external evaluator - Name of organization & contact information: UNM - Center for Education Policy and Research

Answer: MSP partnership organization staff (regardless of whether the staff conducting evaluation are also involved in the implementation of MSP activities, include staff from the partnership IHE)

B. Evaluation Design

Answer: Matched comparison group design

B. ii. Matched Comparison Group Design

Answer: External Evaluation: Matched Comparison Group
MC² has partnered with the Center for Education Policy Research project to assess the overall effectiveness of the MC² professional development by establishing a control group of students

who have not had teachers that have recently participated in MC² professional development, and compare outcomes on high-stakes assessment. The Center for Education Policy Research will use propensity-score matching techniques to create a control group of like students and compare outcomes on the Standards-based assessment and end of course assessments. Student achievement data for the 2014-15 is expected to be available in fall of 2015. The comparison study will be completed once the data is available.

Internal Evaluation Measures

In addition to the matched comparison, further evaluation of the project is conducted through our internal evaluation. Data is collected and analyzed to describe 1) the leadership and culture of the partner schools and districts, 2) the level and quality of teacher collaboration and learning, 3) the nature of classroom practice, and 4) student mathematics achievement (assessment data). These data are collected by the MC² Field Specialists and the Internal Evaluator. The data is analyzed by the Internal Evaluator and the MC² Research Team. Below are the measures are used:

Quality Mathematics Education Model (QMEM) – This is a questionnaire that provides data about the state of implementation of the MC² Capacity Building Model (CBM) model in each district. (Collected 3 times per year)

District Leadership Team (DLT) Meeting Participant Evaluations – These evaluations provide data to inform the MC² Research Team about the usefulness of the DLT meetings in advancing the implementation of the MC² capacity building model. (Collected after each DLT meeting - 3 times per year)

Activity/Professional Development Records – These records provide data about the types and amount of professional development (PD) provided by MC² to the partner districts. They will also indicate how many district personnel participate in MC² PD. (Collected once per month.)

Collaborative Teaching and Learning Cycle (CTLTC) Documentation – This documentation provides data about what transpires during the planning, enactment, and review of specific teacher lessons. (Collected after each CTLTC - at least 2 times per year)

CTLTC Participant Feedback Form – These evaluations provide data about the usefulness of the CTLTC process, and any challenges which were encountered during the process. (Collected after each CTLTC - at least 2 times per year)

Observation of Learning Environments and Pre/Post Interview Form – This instrument provides data to describe teaching and learning in mathematics classrooms and to try to determine if what is shared in PD sessions is reflected in what is happening in classrooms. Thirty classrooms will be observed. (To be collected once in the fall and once in the spring each year)

Assessments (Short Cycle, PARCC, End-of-Course) – These assessments will provide data to support teachers instructional decisions based on student data and to inform plans for future PD. (To be collected as test results become available)

C. Phase of Implementation

1. Indicate your MSP project's stage of implementation.

Answer: Fully Developed: All components of the planned MSP model are fully operational.

2. Current year of implementation:

Answer: 1st year of this grant cycle

3. Is this the final report that you will submit for this grant (i.e., this is the last APR you will complete to report on the funds you received for this MSP)?

Answer: No

D. Teacher Assessment Measures

Assessment Measure 1

Assessment of Teacher Content Knowledge-Math

Other (Please specify): Summer Pre/Post Math Assessment

1. Description of the assessment measure/test:

Answer: Locally developed test, not tested for validity and reliability

2. Were the results of this measure used in the reporting of GPRA indicators for participants in section VIII (Findings for MSP Participants and Their Students) of this APR?

Answer: Yes

E. Analysis of Changes in Teacher Practice

1. How are you measuring the extent to which teachers are applying lessons from the MSP PD to their classroom instruction?

Answer: Classroom observation Questionnaire/Self-report

Other (Please specify):

F. Teacher Findings

Answer: Seven sources of data were triangulated to respond to Teacher Findings: Summer 2014 On-Line Demographic Questionnaire Results for All Participants; Participant Evaluation Report for MC² Institutes (Summer 2014); Participant Evaluation Report for MC² Math Lab (Summer 2014); Partner Principal Survey (Spring 2015); CTLC Participant Feedback Reports (September 2014-May 2015); Field Specialists Activity/PD Reports (July 2014-May 2015); and classroom observations using Observations of Learning Environments/ OLE2 (April-May 2015). These data inform our findings for the 364 educators who attended the Summer 2014 Math Institutes/Math Lab. These educators were from 86 different schools in 20 school districts throughout New Mexico.

Findings indicate that MC² professional learning opportunities 1) positively impacted teacher pedagogy and math content knowledge; 2) positively impacted classroom instruction; and 3) contributed to an increase in student mathematical achievement.

1. Impact on Teacher Pedagogy and Math Content Knowledge

Participant Evaluations indicated that the Institute enhanced participant math content knowledge [mean rating of 3.5 out of 4 (1= strongly disagree—4=strongly agree)], and their knowledge of

pedagogy (mean rating of 3.6 out of 4).

Participant Evaluations indicated that the Math Lab enhanced participant math content knowledge [mean rating of 3.7 out of 4 (1= strongly disagree—4=strongly agree)], and their knowledge of pedagogy (mean rating of 3.8 out of 4).

72% of Partner Principal Survey Responses indicated that MC² professional development impacted teacher's professional knowledge for teaching math (content and pedagogy) either "Quite a Bit" or "To a Great Extent." (Scale: 1= Not at All, 2=Very Little, 3=Somewhat, 4=Quite a Bit, and 5= To a Great Extent)

Select Principal Comments:

"Through a consistent relationship with our district, our teachers have gained valuable knowledge shared through MC² consultants on CCSS-M, Math Practices, and effective instruction in math."

"Teachers have been given an opportunity to reflect and critically question their own practices in the framework provided by MC²."

"The CTLC process has had the greatest impact on teacher understanding of key grade level content and implementation of effective teaching strategies."

"(CTLC) One of the greatest educational experiences I have ever been involved with in education. The sharing of knowledge, support, low stress and then application of ideas is what I always thought education was supposed to be about."

2. Impact on Classroom Instruction

Both Institute and Math Lab participants indicated that they would use what they learned at the Institute in their classrooms, schools, or districts (Institute--mean rating of 3.7 out of 4; Math Lab--mean rating of 3.9 out of 4).

68% of Partner Principal Survey Responses indicated that MC² professional development impacted classroom instruction either "Quite a Bit" or "To a Great Extent."

Select Principal Comments:

"Teachers used many strategies learned during the summer academy and implemented them right away in the classrooms, including norm development."

"The way our teachers instruct their student during math has changed significantly."

"I have observed teachers using high yield strategies and increased awareness levels of effective teaching."

"Teachers are understanding how to look at student work evidence and utilize it appropriately for better instructional impact."

"With the MC² team coming in to provide training, teachers have incorporated what they have learned into the classroom. This is evident through the walkthroughs the principal has made."

"More emphasis has been placed on emphasizing number talks and having students explain their thinking."

"I have observed increased student engagement."

"Teachers are applying information discussed at CTLC in their daily instruction."

"Overall, teachers scored higher in Domains 2 and 3." (Teacher Effectiveness Rubric: Domain 2=Creating an Environment for learning; Domain 3=Teaching for Learning.)

"The CTLC sessions have helped the teachers a great deal, and it is evident in the teaching and in the strategies."

Select Teacher Comments (after attending Summer Institute and/or Math Lab)

"I plan to begin having discussions and make my students responsible for their learning. I plan on using entry and exit tickets as well as math talks. I also plan on not jumping in and helping my students. They need to be able to try and work through it before I ask appropriate questions to help lead and guide them."

"I plan to incorporate the ideas/strategies of others into my lesson plans and instruction. I will purposefully allow more student directed activities and more math talk discussion among students."

"I plan to take more time when planning my lessons so I can include opportunities for my students to question and share their reasoning."

"I will be mindful of the process students use and strategies they choose to solve problems. In addition, I will practice number talk daily in my classroom to ensure everyone has a voice and check for understanding."

"Be more aware of student thinking, and work with grade level teachers to come up with strategies to implement what we learned."

3. Increase in Student Math Achievement

In meeting with principals to discuss student math achievement, many of the MC² field specialists have observed improved math achievement on district short cycle assessment over the course of the year. Several principals confirmed this in their comments on the Partner Principal Survey (Spring 2015).

Selected Principal Comments:

"Discovery short cycle assessments increased from fall to winter. Teacher implementing Math Practices during this instruction and lesson preparation."

"Teachers have implemented their learning into math instruction. Short Cycle Assessment data shows that we have continued to make gains in student proficiency in mathematics."

"Evidence in DEA data overall this school year."

"Less failure rates in Algebra I and Geometry compared to last year."

"Teachers have expressed that the relationship with MC² and the instructional activities/strategies that were implemented in the classroom benefited the students within the Common Core as well as on the PARCC assessment."

G. Student Findings

Answer: See file #2 in supplementary documents for a preliminary summary of findings.

H. Impact on the Partnership

Answer: The MC² project partners with 20 research districts to study a model of capacity building of teachers and leaders to improve the mathematics learning of children in New Mexico. The project model builds the capacity of districts to establish a system of continuous improvement in mathematics. This capacity building model has had significant impact on the types, coherence and consistency of professional learning experiences provided within schools for educators in research districts.

School-Based Professional Learning and Classroom Research:

Schools within a research district whose teachers participated in the summer institute receive school and classroom based support for implementation of CCSS-M aligned lessons and instructional strategies that promote student engagement in the mathematical practices. At school sites, teachers engage in the Collaborative Teaching and Learning Cycle (CTLC) and usually invite all teacher at their grade level to participate in this school based professional learning (whether or not they attended the summer institute). The CTLC provides a 3-hour structure for teachers to study the expectation of the standards, choose or design a lesson that addresses the standard conceptually, and implement the lesson as classroom research. One teacher implements the lesson designed by the group while others observe and gather data on the impact of the lesson on student learning. Teachers then reconvene to discuss the observation and data to modify the lesson for others to implement in their classrooms. The impact of the CTLC has been to establish a stance of professional collaboration and research of student learning in schools. Participating schools have engaged in at least two CTLC cycles this school year with MC² staff. The majority of schools report that the process has impacted their classroom practice by providing a structure to test out new instructional strategies and lessons with the support of colleagues.

Customized Professional Learning for Teachers:

Through the partnership approach, district teams and MC² staff also co-design mathematics professional learning experiences during the school year that address the particular needs of the district teachers. This customized design ensures that site-based support is timely for teachers and has the greatest potential for impact in the classroom. For example, middle schools teachers in a southeast New Mexico school district were working to establish and district-wide curriculum sequence classroom-based assessments. MC² staff facilitated grade level planning meetings for district teachers to agree on a common curriculum and assessment tasks. The team went further to organize district CTLCs to co-design lessons and work towards common expectations of student learning across the district.

The ability for each district leadership teams to customize professional learning ensured that district leaders were invested in the professional learning activities provided in the district. For example, in another southeast New Mexico district, the district leaders wanted all elementary teachers in the district to implement Number Talks, an instructional process for building number sense and confidence with mathematical operations. The district then chose to use its district-wide professional development days to convene all K-5 teachers in grade level teams to experience

Number Talks and begin planning of implementation at school sites. Districts administrators and principals attended the professional learning to show their support and commitment to this agreed upon district wide professional focus.

Supporting Needs of Districts:

Through the involvement of both administrators and teachers, districts have taken systemic actions to improve mathematics teaching and learning. In collaboration with MC², partner districts develop an action plan that takes into account the various resources and initiatives already in place in the districts to create a coherent professional learning plan the meets district teachers' needs. For example, this year the PARCC assessment and a relatively new teacher evaluation system was implemented across the state. Districts drew on the partnership with MC² to prepare teachers for the expectations of PARCC and the teacher evaluation system. Workshops were designed at the district level to provide professional learning structures for teachers to study the CCSS-M standards and learn instructional strategies for teachers to engage students in the mathematical practices. MC² designed several structures based on district request: (1) Five Agreements, (2) The Thinking Protocol, and (3) MC² Countdown to PARCC Webinars.

The "Five Agreements" protocol provided a process for school teams to decide on a focus for professional learning based on the changes they wanted to see in classrooms. Within the protocol, teachers and principals decide on their goals for classroom practice that will improve student math learning. These goals are based on research, teachers own beliefs about student learning, and the NM teacher evaluation system. By using different viewpoints to develop agreed up on goals, the potential for buy-in and impact on all teachers is increased. These agreements then become an organizing tool for choosing professional learning structures and activities that support teacher growth and change in classroom practice.

The "Thinking Protocol" was designed to support teachers in increasing student engagement in the CCSS-M standards for mathematical practice. The protocol which is highlighted in the MC² Countdown to PARCC, provides a classroom structure for using PARCC practice items and rich mathematical tasks to build students competence and confidence in tackling complex math tasks. Teacher in all partner districts are reporting that the use of the Thinking Protocol is promoting richer mathematical conversations in daily math lessons. Countdown to PARCC and the Thinking Protocol can be found on the MC² website at <http://mc2.nmsu.edu>.

Reported Increase in Student Learning:

While test data from the statewide administration of PARCC will not be available until fall 2015, partner districts are reporting increase in student learning based on short cycle assessments that are administered in early fall, winter, and late spring. All districts are choosing to continue the partnership with MC² in the coming year based on impact of student learning. For example, two northern New Mexico school districts noted greater gains in short cycle assessments in schools that fully participated in MC² compared to non-participating schools. Similarly, a central New Mexico district has requested that all their schools participate based on the impact of both teacher and student learning in the six elementary schools that fully participated in summer institutes and school-based CTLCs.

I. Other Impacts (Optional)

Answer: Teacher Leader Cadre and Math Lab Professional Learning Design:

MC² is working in partnership with a grant funded by the NM Higher Education Department to develop teacher leadership in mathematics across the state. The Teacher Leaders Cadre, modeled after MC²-LIFT (NSF #0928867) to build leadership skills and strong pedagogical knowledge in K-12 mathematics, builds leadership capacity of highly effective teachers to design and facilitate

professional learning for colleagues in their schools and throughout the state. Thirty-eight teachers meet once a month with five mathematicians and ten math educators to study their own practice and develop skills in adult leadership. The teacher leaders are also charged with designing professional learning experiences for others. They are integral part of Summer Math Lab and Institute design. In spring 2015, they partnered with mathematicians and staff to pilot test and refine lessons designed for increasing student engagement and conceptual development of selected CCSS-M standards and practices.

Expansion of Math Lab:

Reports from teachers and preliminary data from classroom observations indicate a greater impact on classroom practice from Math Lab than Math Institute alone. As a result, other granting agencies in New Mexico have requested an expansion of Summer Math Lab to include additional schools and teacher in summer 2015. Math Labs are now being offered in six locations across the state and open to an additional 200 teachers beyond the MC² research districts.

The Math Labs, in partnership with teacher leaders, are week-long professional learning experiences to provide novice and experienced teachers with a rich opportunity to engage in mathematics teaching and learning in real time. Participants observe as the teacher leaders from the cadre and mathematicians instruct 20 students in the deep conceptual math required for proficiency in Common Core State Standards for Mathematics. They also model how to establish a learner driven environment and model instructional strategies that ensure that all students are engaged and learning. Participants also deepen their own mathematical understanding as well as develop pedagogical knowledge by engaging in mathematics learning themselves and considering the experiences students need to develop an understanding of the concepts. Math Lab is run concurrently with children's summer Math Camp that provides mathematics foundational support and enrichment for students to better prepare them for the upcoming school year.

Data will be gathered through teacher surveys and student achievement data in 2016 to analyze change in classroom practice and student learning as a result of teacher participation in Math Lab.

J. Upload Report

Attachment: Evaluation_Reports_May_2015.pdf

VIII. Findings for MSP Participants and Their Students

A. MSP Participants

i. Total number of participants receiving MSP professional development in math: (If a participant receives PD in more than one discipline within Math, count that participant only once.)

Answer: 364

ii. Total number of participants receiving MSP professional development science: (If a participant receives PD in more than one discipline within Science, count that participant only once.)

Answer: 0

Mathematics

1. Number of participants receiving MSP professional development in math (participants can be counted multiple times if they participate in multiple sets of independent professional development

courses, particularly in different topics):

Answer: 364

2. Among those participants reported in 1 above, number of participants with both pretest and posttest scores in math content knowledge:

Answer: 316

3. Among those participants reported in 2 above, number of participants who showed significant gains in math content knowledge:

Answer: 0

Science

4. Number of participants receiving MSP professional development in science (participants can be counted multiple times if they participate in multiple sets of independent professional development courses, particularly in different topics):

Answer: 0

5. Among those participants reported in 4 above, number of participants with both pretest and posttest scores in science content knowledge:

Answer: 0

6. Among those participants reported in 5 above, number of participants who showed significant gains in science content knowledge:

Answer: 0

B. Students

Mathematics

1. Number of students taught math by MSP teachers:

Answer: 10500

2. Number of students from question 1 with state assessment data in math:

Answer:

3. Number of students from question 2 who scored at basic or below in math:

Answer:

4. Number of students from question 2 who scored at proficient or above in math:

Answer:

Science

5. Number of students taught science by MSP teachers:

Answer:

6. Number of students from question 5 with state assessment data in science:

Answer:

7. Number of students from question 6 who scored at basic or below in science:

Answer:

8. Number of students from question 6 who scored at proficient or above in science:

Answer:

IX. Lessons Learned

A. MSP Implementation

Answer: In summer 2014, MC² established a research team and data gathering protocols to gather data from each research district. In this new cycle of funding, the project limited participation of school districts to no more than twenty. The purpose of downsizing the number of partner districts was to be able to provide summer professional learning and a minimum of two days of follow-up support for participating teachers at district sites each month with our current staff. The successes and challenges in our research districts include the following:

Success – Math Lab:

The 2014 Math Lab proved highly effective in changing teacher mindsets about student learning and how to engage students in high level questioning and rigorous math tasks. Teachers reported greater relevance of the professional learning to their own practice and could articulate specific strategies they would implement in their classroom as a result of their participation in Math Lab. The lesson learned from piloting Math Lab in one location is that the lab setting could have greater impact on student learning throughout the school year than math institute alone. Math Lab provided a collaborative setting for teachers to serve as researchers of instructional practice and student learning. As “action researchers”, participants considered the importance of the CCSS-M Mathematical Practices, developing a standards-based learning environment that is learner driven and values student thinking as a source for mathematical discussion, and implementing rich mathematical tasks aligned to CCSS-M. Informal observation data shows teachers who attended 2014 Math Lab were more likely to make significant changes in their regular math teaching practice than those who only attended 2014 Summer Institute.

Quotes from teachers when asked what aspects of the Math Lab experience they found most useful include:

“The connection between the math and the pedagogy. The shift from teacher-led to student-led. The strategies I loved and positive encouragement from the staff. The availability of the staff as resources after math lab.”

“Watching the SBLE in action was a wonderful experience. I have been waiting for an opportunity to see something like this for a long time.”

“When you see it with real kids - like when I saw them create an SBLE in one week with kids they didn’t know – you can’t make excuses anymore. If they can do it, I can do it.”

Success – CTLC:

MC² developed the Collaborative Teaching and Learning Cycle (CTLC) that was implemented in all partner districts in the 2014-2015 school year. This protocol was based on education research (e.g., Joyce & Showers, 2002) which indicates professional learning that includes peer coaching and/or collegial support is the only way to have significant impact on classroom instructional practice. The intent was to include aspects of Math Lab, such as conducting a lesson with and observing students and debriefing about the impact of the lesson on student learning with study the CCSS math content and practice standards. The result was that teachers collaborated about teaching and learning math with colleagues in their school/district and saw their ideas enacted with their own students. Feedback from the CTLCs has been overwhelmingly positive, with some teachers making statement like, “It’s the first time we’ve got to observe another teacher teaching in 23 years!” The CTLC Feedback data also suggest that teachers’ thinking about instructional practice are deepening, as reflected by the evolution of their comments and questions in the evaluation data.

Success - Fewer districts/Partnership with schools / Relationship Building:

The shift in focus to only 20 Research Districts for the 2014-2015 year (as opposed to 37 in the previous year) made it possible for MC² Field Specialists to develop deeper relationships with teacher participants, building principals, instructional coaches, and district-level leaders. Previous Lessons Learned taught us that it’s the “behind-the-scenes” work, the relationship building, the continuous communication, and consistency that allow us to build the trust necessary to do impactful work in schools. The MC² Activity Records and records of communication show that MC² Field Specialists were able to spend much more time both in schools and communicating with participants than in the past two years.

Challenge - School as the Unit of Change (Not Districts):

While the model shows signs of having impact on the teaching and learning of mathematics in our first year, we are limited by working with only some of the schools in our partner districts and building “pockets of excellence”. In some districts the results in partner schools have been so visibly positive that the district has asked MC² to expand to non-partner schools in the upcoming year. Additionally, the disadvantage of working only with certain schools is that the success of the implementation is largely determined by the building principal and their commitment to the work. Data from this year has shown that principal involvement is sporadic over the project as a whole as well as by district. MC² Field Specialists report that there is a noticeable difference in the implementation of the model in schools where the principal 1) regularly attends MC² professional learning, 2) maintains communication with their Field Specialists, and 3) takes an active partnership role in the implementation of the model, as opposed to looking on MC² as “those people who come in and do math with my teachers.”

Challenge - Teacher Content Knowledge:

Through the CTLC process the MC² Field Specialists observed a common theme across all partner districts and at all grade levels: teacher mathematics content knowledge in relation to the CCSS-M was lacking. While the Math Lab and Summer Institute provided numerous experiences for teachers to deepen their math content knowledge, they weren’t enough to sustain teachers for the entire year. Most teachers in the project informally reported that they relied on the district-adopted textbook resource to be aligned with CCSS-M and guide them in how and what to teach their students. In nearly all cases, these resources were woefully inadequate for this task. This challenge has led the project to develop more CCSS-M content-based workshops for the coming year.

B. MSP Evaluation

Answer: One major success of the project evaluation was creating a research model and uniform data gathering plan for each research school. The data collected for every school included Activity Logs with hours and type of professional learning activities conducted at each site, CTLC feedback forms to gather teacher perception of the value of the professional learning in classrooms, evaluation forms for any professional development event with questions about what teachers would implement as a result of the event, and Quality Mathematics Education Model survey to gain insight into teachers and principals perception of the strengths and areas to grow in terms of instruction, curriculum, and leadership in mathematics. By having a more structured data gathering plan for all research districts, staff can more accurately compare the strengths and weaknesses of implementation at school sites and staff are better able to support one another and collaborate in the implementation of the project activities.

The partnership with the UNM- Center for Education Policy and Research (CEPR) as an external evaluator has also strengthened the project research in two ways:

1. CEPR has been able to scrutinize the project evaluation plan and offer support in developing common data gathering tools for staff.
2. CEPR also has the technical capacity to process large sets of student achievement data and match student data to participating teachers. They are also able to use propensity-score matching techniques to create a control group of like students and compare outcomes on high stakes tests.

The partnership with CEPR is allowing MC² to create a more rigorous evaluation and research plan than in previous years that will help to refine and improve professional learning opportunities for teachers.

Another success this year in regards to evaluation has been the establishment of a memorandum of agreement with the Public Education Department to access achievement data under FERPA guidelines. Access to data and the partnership with CEPR provide the necessary information to assess the effectiveness of MC² professional development on student achievement in mathematics.

A challenge of data analysis this current year is the change in state testing to PARCC. A new test will create challenges of comparing data to previous years. Also, data will not be available for student achievement in 2014-2015 until fall of 2015. While challenges exist with a new test, the MC² evaluation team is pleased that the PARCC test assesses reasoning, mathematical, and problem solving as described in the CCSS-M standards for mathematical practices as well as the content standards. The focus on mathematical practices helps teachers see the need to deepen mathematical reasoning in the classroom and, therefore, creates greater interest in improving classroom practice.

Another success this year is the amount of data we are able to collect from each school site. Since the project has decreased the number of school districts to twenty, more consistent professional development is provided to each site and data gathered of this professional development is well documented.

A challenge of evaluation includes gathering reliable data on classroom observations. In the fall 2014, five field staff were selected to conduct classroom observations in districts in which they did not provide professional support. While the staff were well qualified to provide professional learning experiences for teachers, they did not necessarily have a researchers lens when setting up and conducting observations – even in a different school district where they did not know the

teachers. The project had to rethink the observation protocol and designate only two observers for the spring to ensure inter-rater reliability and consistent messages to partner districts on the purpose of the observations. Because of the change in protocol, fewer numbers of observations with reliable data were conducted this past year than originally intended. However, the data we currently have is useful in establishing some baseline data and analyzing the initial impact of the professional development on the classroom practice. Also the project now has a reliable protocol for classroom observation in the coming year.

Finding or creating a test that aligned with the content of the summer mathematics institute proved very challenging because project mathematicians and staff designed content sessions on “big ideas” across grade levels in the CCSS-M. The content sessions were divided into three groups: K-3, 4-6, and 7 – high school. After looking at the Learning Mathematics for Teaching (LMT) out of University of Michigan, groups decided to either use the test as is or create their own test.

Grades K-3: The institute developers chose to create an assessment aligned to the content of the session. The end result is that the pre-/post- tests were not challenging enough for teacher participants to show any gains.

Grades 4-6 and Grades 7-12: The institute developers chose to use the LMT because they did not feel capable of designing a reliable assessment while also developing content for the institute. The 4-6 group chose to use the elementary LMT and grades 7-12 chose to use the high school LMT. As a result, we administered a test that was not aligned to the content of the institute and no significant changes were noted between the pre- and post-test.

Our biggest lesson learned from the summer 2014 teacher assessment data was that we needed invest more time and energy into creating assessments that aligned to the content of the sessions. In the fall of 2014 the project contracted with mathematicians to choose the content for the following summer (2015) and to design assessments concurrently with the content. Mathematicians worked closely with the project evaluator to work towards a reliable assessment of teacher pedagogical content knowledge.

X. State Review

A. Awards

A high-need LEA in New Mexico is defined as a school or district in which at least 20% of the students receive free or reduced price lunches.

XI. Attached Supplementary Documents

File 1: Description_of_Mathematically_Connected_Communities_PD_Model.docx

File 2: MC2_Annual_Report_STUDENT_FINDINGS.docx

File 3:

File 4:

File 5: