


## Missouri Title II.D Evaluation Report for 2010-11

Submitted to the U.S. Department of Education on behalf of the Missouri  
Department of Elementary and Secondary Education by:



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**Title II.D Technology Grants  
Missouri Department of Elementary & Secondary Education**

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## I. EXECUTIVE SUMMARY AND INTRODUCTION

### Missouri Department of Elementary and Secondary Education Title II.D Competitive Grant Program

*The impact the eMINTS project has had on our staff has been profound. Our staff speaks the data and they are student-focused. When a problem arises, the staff immediately collaborate with one another to search for solutions. --Carnahan High School*

In 2010-11, the federal Title II, Part D “Enhancing Education through Technology” (Ed-Tech or EETT) Program provided grants to states and schools with the primary goal of improving student achievement through the use of teaching and learning technologies. The State distributed program funds to districts via a competitive sub-grant program (districts that participated in this grant in the preceding year were reviewed, classified via a scoring system based on need and previous progress, and nine districts were selected). Districts used the funding primarily to secure and implement professional development and projects that promote effective integration of technology with teacher training and curriculum development, establishing successful research-based instructional methods and ensuring every student is technology literate by the end of the 8<sup>th</sup> grade.

In 2009 and 2010, the Title II.D competitive funds were used in Missouri to support two-year projects that improved instructional strategies and student achievement (including technology literacy) through school wide implementation of the eMINTS model. The *enhancing Missouri's Instructional Networked Teaching Strategies* (eMINTS) program provides professional development and support for educators as they integrate multimedia technology into inquiry-based, student-centered, interdisciplinary, collaborative teaching practices that result in higher levels of student performance. eMINTS began as a demonstration project in 1997 and is now a large scale program involving thousands of teachers in classrooms across Missouri, the United States, and New South Wales, Australia. Extensive research has been conducted throughout the life of the program, available on the eMINTS website at <http://www.emints.org>.

**eMINTS classrooms** include high levels of technology for students and teachers

- Computers (at least one Internet-connected computer for every two students at grades 3-12)
- Teacher laptop computer
- SMART Board (interactive whiteboard) and projector
- Peripherals: printer, camera, scanner
- Software limited to productivity and multimedia project software

**eMINTS teachers** receive two intensive years of professional development (more than 200 contact hours) and in-classroom coaching and mentoring to help them learn to use technology in transformative ways.

- Year 1 includes 130 hours of professional development delivered in 4 hour modules along with monthly classroom coaching visits
- Year 2 includes 76 hours of professional development delivered in 4-hour modules along with monthly classroom coaching visits

**eMINTS instructional strategies** focus on:

- Inquiry-based teaching that engages students in real-world projects and research
- Higher order thinking skills
- Cooperative learning and building

Participants in the FY11 Title II.D Program also had an opportunity to participate in a special series of professional development experiences called “eMINTS Data Teams: Helping Districts Use Data to Improve Instruction.” The professional development included seminars, webinars, and on-site coaching visits focused on:

- enhancing and supporting each district as it completed required Title II.D. End of Year 2 Project and Final Project Reports
- providing districts with a process they could use to sustain their eMINTS implementation after their Title II.D funding ended
- building district capacity to use assessment and data to initiate or improve their existing processes for using student assessment results to make instructional decisions

Title II.D Program funding for FY11 was significantly less than the previous year’s when Title II.D received additional funding through the American Recovery and Reinvestment Act (ARRA). In FY10, Missouri offered both formula and competitive grants in both programs (regular and ARRA-funded Title II.D) and with competitive funding, started ten new eMINTS grant projects. With only regular Title II.D funding available for 2010-11, Missouri elected to allocate all flow-through funding for the competitive sub-grant program, with that funding only sufficient to award continuation grants. Nine FY11 eMINTS continuation grants were awarded (one project ended in June 2010 when the district was closed and consolidated with another district). For more information about Missouri’s Title II.D and/or the FY10 Title II.D-ARRA programs, visit: <http://dese.mo.gov/divimprove/instrtech/federalfunded/TitleIID/index.htm>.

Six of the nine projects were evaluated by the Missouri Office of Social and Economic Data Analysis (OSED) and an abbreviated version of that report follow:

*The following Missouri Assessment Program (MAP) analysis compares eMINTS students' scores on MAP communication arts and mathematics tests taken at two points in time, 2009 and 2011. The organization of this report centers around three analytical foci. It begins with non-statistical contingency table reporting on the four MAP proficiency levels (Below Basic, Basic, Proficient, and Advanced) for each MAP test in communication arts and mathematics, by the five student characteristics: all students, minority and white students, male and female students, free and reduced lunch and non-free and reduced lunch students, and IEP and non-IEP students.*

*The OSED reports include a statistical test of the Missouri Assessment Program (MAP) levels shown on the contingency table below where the four MAP proficiency levels have been collapsed into the categories of: **proficient and non-proficient**. These categories are then compared to the five student characteristics that comprise the analysis. The **Chi-Square statistic** was used to test whether distributions of the categorical variables differ from one another. The alpha level of significance is .05.*

Also included is information from the scale score of each MAP (grade level) test in communication arts and mathematics. For this analysis, the scale scores were transformed into z-scores to overcome statistical bias resulting in the tests being tailor-made to grade level, which generally always guarantees improvement over time. A *paired samples, T-Test of statistical significance\** was used to test for significant differences in MAP scale scores between 2009 and 2011. The alpha level of significance is .05.

Group Divisions.	Communication Arts	Mathematics
All Students	Y,N,N*,N*,N*,N,N*,	Y, N,N*,N*,N,N*,Y,
Minority	N, N,N,N,N,N,N,N*,	N,--,N*,N,N,N,Y,
White	Y*,N,N*,N,N,Y,N*,N,	Y, N,N*,N,N,N*,N,
Female	N*,N*,N*,N*,N*,N*,N*,	N*, N, N*,N*,N,N*,Y,
Male	Y*,N, N*,N,N*,N,N,	Y*,N, N*,N,N,N,Y,
Non- F/R Lunch	N, N,N,N,N,N*,N,	Y, N,N,N,N,N,N*,
Free/Reduced Lunch	Y*,N,N*,N,N*,N,N*,	Y*,N,N*,N,N,N*,Y,
Non-Individual Education Plan	Y*,N,N*,N,N*,N,N*,	Y,N,N*,N,N,N*,Y*,
With IEP	N,N,N*,N,N,N, N,	N,N,N*,N,--,Y,Y,

Y= proficient; Y\*= no on scale scores; N= not proficient; N\*= yes on scale scores

- Cameron Middle Schools - two
- Gasconade County - Hermann High School
- Lebanon - Boswell & Hillcrest Elementary Schools
- Cameron - Parkview Elementary
- Sedalia - Heber Hunt Elementary
- Sikeston - 5th & 6th Grade Center
- St. Louis - Carnahan High School

Also, three projects were evaluated by Angela Hull, Ph.D. and an abbreviated version of those evaluations follow:

- Cassville Intermediate and Middle School
- Jefferson City - East Elementary
- North Kansas City - four elementary schools

Two districts, Jefferson City and North Kansas City, had instituted eMINTS projects in prior years. Cassville was a new program for 2010-11. These three districts began or expanded professional development activities of 87 teachers serving 1,795 students. While statistical data was collected, all districts measured changes in teacher/student behaviors with pre- and post-tests and observed changes in teaching and student learning practices. Classrooms have become less teacher-directed and more student-centered. Grade level collaboration has increased and students have improved their interpersonal skills and abilities.

DISTRICT	READING IMPROVEMENT	STUDENT TECHNOLOGY LITERACY	TEACHER INTEGRATED TECHNOLOGY	GAINS IN TEACHER PROFICIENCY
Cassville -new	Slight improvement ↔↔	Some improvement ↔↗	Self-reported ↑	Tech surveys show↑
Jefferson City - expanded	71-81% improvement ↔↗	Statistically ↔↗	Self-reported ↑	Tech surveys show↑
North Kansas City - expanded	Inconclusive ↔↔	Inconsistent Data ↔↔	Self-reported ↑	Tech surveys show↑

## II. STATE EDUCATION TECHNOLOGY CONTEXT

Missouri Department of Elementary & Secondary Education  
 Title II.D Competitive Grant Program -- Program Evaluation Report 2010-11

### District Participants

Name of School District	County/District Code	Contact Person
Cameron R-I School District	025-011	Delyn Bogle
St. Louis Public Schools - Carnahan High School	115-115	Bruce Green
Cassville School District	005-123	Jill LeCompte/Richard Asbil
Jefferson City Public Schools	026-006	Dawn Berhorst
Lebanon R-3 School District	053-113	Deborah Moore
North Kansas City School District	024-093	Tricia Scott
Sedalia School District	080-125	Wade Norton
Sikeston R-6 School District	100-063	Michelle Gilmer
Gasconade County R-1	037-039	Gary Leimkuehler

### Project Information - Building Information -- Building Teachers and Students

	K-2	305	6-8	9-12	Total
Teachers	25	130	7	23	185
Students	703	3753	382	766	5604

### Project Design - Professional Development Information (eMINTS teachers and students)

eMINTS Prof. Development	K-2		3-5		6-8		9-12		Total	
	T	S	T	S	T	S	T	S	T	S
Comprehensive			54	1558	4	315	9	334	67	2207
Comp. Replac.			21	499					21	499
For All	17	493	47	1518	3	67	13	412	80	2490
Veteran										
Spec. Educa.	1	17	1	15			1	20	3	52
Other	7	193	7	163					14	356

### eMINTS Building or District-wide Participants

eMINTS Program	Elementary	Middle/Jr. High	High School	District	Total
Adm.	7		1	1	9
ETS				1	1
Techs	2		1		3
Other					0

District Participants/Budget Summary (11/2011) - 2nd Year Competitive

Name of School District	County/District Code & number of schools		Approved FER Amount
Cameron R-I School District	025-011	2	\$149,981.08
St. Louis Public Schools - Carnahan High School	115-115	1	\$113,058.39
Cassville School District	005-123	1	\$150,000.00
Jefferson City Public Schools	026-006	1	\$ 51,547.00
Lebanon R-3 School District	053-113	2	\$104,164.00
North Kansas City School District	024-093	4	\$112,153.42
Sedalia School District	080-125	1	\$ 94,614.86
Sikeston R-6 School District	100-063	1	\$149,793.00
Gasconade County R-1	037-039	1	\$ 58,672.99
TOTAL			\$983,984.74

### III. THE ACTIVITY

The federal Title II, Part D “Enhancing Education through Technology” (Ed-Tech or EETT) Program provides grants to states and schools with the primary goal of improving student achievement through the use of teaching and learning technologies. States distribute program funds to districts via formula and competitive sub-grant programs. Districts use the funding to secure classroom technologies and implement professional development and projects that promote effective integration of technology with teacher training and curriculum development, establishing successful research-based instructional methods and ensuring every student is technology literate by the end of the 8<sup>th</sup> grade.

In Missouri, the Title II.D competitive funds were used to support two-year projects that improve instructional strategies and student achievement (including technology literacy) through school-wide implementation of the eMINTS model. The *enhancing Missouri's Instructional Networked Teaching Strategies* (eMINTS) program provides professional development and support for educators as they integrate multimedia technology into inquiry-based, student-centered, interdisciplinary, collaborative teaching practices that result in higher levels of student performance. eMINTS began as a demonstration project in 1997 and is now a large scale program involving thousands of teachers in classrooms across Missouri, the United States, and New South Wales, Australia. Extensive research has been conducted throughout the life of the program, available on the eMINTS website at <http://www.emints.org>. (Additional information about educator and student literacy may be found in Appendix A.)

The Title II.D Program funding for FY11 is significantly less than last year’s when Title II.D received additional funding through the American Recovery and Reinvestment Act (ARRA). In FY10, Missouri offered both formula and competitive grants in both programs (regular and ARRA-funded Title II.D) and with competitive funding, started ten new eMINTS grant projects. With only regular Title II.D funding available for 2010-11, Missouri elected to allocate all flow-through funding for the competitive sub-grant program, with that funding only sufficient to award continuation grants. Nine FY11 eMINTS continuation grants were awarded [one project ended in June 2010 when the district was closed [consolidated with another district]. For more information about Missouri’s Title II.D and/or the FY10 Title II.D-ARRA programs, visit: <http://dese.mo.gov/divimprove/instrtech/federalfunded/TitleIID/index.htm>.

Summaries of the nine eMINTS continuation projects are provided below, detailing for each project the district and contact information, grant award history, grant type, numbers of teachers receiving professional development, numbers and grade levels of students served, and project focus. Note that “New eMINTS” districts are implementing eMINTS for the first time, while “Established eMINTS” districts have prior eMINTS implementations.

**025-001 Cameron R-1 School District**

SCHOOLS INVOLVED		CONTACT PERSON NAME, TITLE, TELEPHONE NUMMBER	
Parkview Elementary and Cameron Middle Schools		Delyn Bogle, Education Technology Specialist (816) 632-2001	
GRANT AWARD	GRANT PROGRAM	Curricular Focus	Participants
2009-10 \$382,799 2010-11 \$149,998	<b>New eMINTS</b>	Communication arts, mathematics, science, social studies	12 teachers and 625 students, grades 4-8
<p>Project Description</p> <p>The success of an earlier, district-funded grade 4 eMINTS implementation convinced school leaders to pursue technology-enhanced, inquiry-based instruction in both the elementary and middle schools. Also recognizing that adding technology without appropriate professional development is not effective and that teacher turnover can dilute effect, this new project focuses providing access to technology for all classrooms in grades 4-8, supporting consistent, organized, and sequential training, and training a district eMINTS instructional specialist to address future training needs in the district.</p>			

**005-123 Cassville R-IV School District**

SCHOOLS INVOLVED		CONTACT PERSON NAME, TITLE, TELEPHONE NUMMBER	
Cassville Intermediate and Middle Schools		Richard Asbil, Instructional Services Director (417) 847-5573	
GRANT AWARD	GRANT PROGRAM	Curricular Focus	Participants
2009-10 \$398,376 2010-11 \$150,000	<b>New eMINTS</b>	Communication arts, mathematics, science, social studies, literacy	22 teachers and 528 students, grades 3-6
<p>Project Description</p> <p>The district, in 2008-09, received a STEM-related grant to implemented Comprehensive eMINTS in three classrooms and added four eMINTS4All classrooms at district cost. Meanwhile, a new intermediate school was opened and grades 3-5 were moved to the new facility. The district renovated and expanded grade 6 classrooms in the existing building with the eMINTS program in mind. This grant enables the district to provide consistent professional development and technology throughout both buildings (evening the playing field for students and teachers) and facilitate curriculum and grade-level team collaboration and progress. District leadership is providing support throughout the transformation.</p>			

**037-039 Gasconade County R-1 School District**

SCHOOLS INVOLVED		CONTACT PERSON NAME, TITLE, TELEPHONE NUMMBER	
Hermann High School		Gary Leimkuehler, Principal (573)486-2116	
GRANT AWARD	GRANT PROGRAM	Curricular Focus	Participants
2009-10 \$355,155 2010-11 \$ 79,298	Established eMINTS	Communication arts, mathematics, science, social studies	417 students and 12 teachers, grades 9-12
Project Description			
<p>After establishing a successful middle school eMINTS implementation, the district decided to expand eMINTS into the high school. As middle school students moved to the high school, teachers struggled to provide constructivist activities that kept students interested, especially during the longer (block schedule) class periods. This project is creating technology-rich classrooms at the high school, teachers are learning how to integrate technology effectively, and both teachers and students are participating in learning projects that actively engage students in inquiry-based learning and collaborative practices.</p>			

**026-006 Jefferson City Public Schools**

SCHOOLS INVOLVED		CONTACT PERSON NAME, TITLE, TELEPHONE NUMMBER	
East Elementary School		Dawn Berhorst, Director of Planning and Assessment (573) 659-3043	
GRANT AWARD	GRANT PROGRAM	Curricular Focus	Participants
2009-10 \$338,199 2010-11 \$ 59,711	Established eMINTS	Communication arts, mathematics, science, social studies	25 teachers and 307 students, grades K-5
Project Description			
<p>Teachers (comprised mainly of veteran teachers and committed to providing the best educational opportunities available for a student population that presents a variety of educational challenges with its economic and cultural diversity) agreed unanimously to implement school wide eMINTS reform. The project team oversees the work to provide technology-rich classrooms and integrate constructivist-based instruction that engages students, helps them embrace their diversity, improves their interpersonal skills and abilities, and raises their academic achievement.</p>			

**053-113 Lebanon R-III School District**

SCHOOLS INVOLVED		CONTACT PERSON NAME, TITLE, TELEPHONE NUMBER	
Boswell Elementary and Hillcrest Accelerated School		Debbie Moore, Communication Coordinator (417) 532-9141	
GRANT AWARD	GRANT PROGRAM	Curricular Focus	Participants
2009-10 \$306,794 2010-11 \$104,164	Established eMINTS	Communication arts, mathematics, science, technology	13 teachers and 774 students, grades 4-6
Project Description			
Facing a problem most rural districts have – little diversity, a declining economy, and students at risk of becoming more and more isolated from 21 <sup>st</sup> century tools and skills and opportunities for collaboration, this project immersed elementary students, grades 4-5, in eMINTS instruction in 2009-10 and will expand eMINTS into grade 6 in 2010-11. The district is also supporting an eMINTS instructional specialist position to ensure training is continuous after the grant project ends.			

**024-093 North Kansas City School District**

SCHOOLS INVOLVED		CONTACT PERSON NAME, TITLE, TELEPHONE NUMBER	
Clardy, Davidson, Meadowbrook, and Oakwood Manor Elementary Schools		Tricia Scott, Certified eMINTS Specialist (816) 413-5009	
GRANT AWARD	GRANT PROGRAM	Curricular Focus	Participants
2009-10 \$388,737 2010-11 \$119,264	Established eMINTS	Communication arts, science, mathematics, social studies	40 teachers and 960 students, grades 3-5
Project Description			
The district serves students in urban, suburban and rural areas around the Kansas City metropolitan area. A steady increase in ethnic diversity, free and reduced lunch eligibility, and the struggling economic climate threaten the adequate yearly progress these schools must meet. Although eligible, these buildings do not receive Title I funds due to other buildings in the district having greater needs. The projects supports 40 teachers in these four Title I-eligible schools as they access the training and technologies needed to implement the eMINTS instructional model, a technology rich, research based, constructivist/5E approach aligned with grade level expectations, to impact positively how 960+ students learn.			

**080-125 Sedalia School District**

SCHOOLS INVOLVED Heber Hunt Elementary School		CONTACT PERSON NAME, TITLE, TELEPHONE NUMBER Wade Norton, Principal (660) 826-1058	
GRANT AWARD 2009-10 \$378,646 2010-11 \$118,787	GRANT PROGRAM Established eMINTS	Curricular Focus Communication arts, science, mathematics, social studies	Participants 17 teachers and 350 students, grades 2-4
Project Description  This project serves the largest and most diverse elementary school in the district, with a free and reduced lunch rate almost 20% over that of the district and 35% over the state average and with 11% of students classified as homeless. With many of the students struggling in math and communication arts, the school was classified as a “School in Need of Improvement.” Based on the success of eMINTS implementation in another elementary school, school leadership and building staff are committed to implementing student-centered, inquiry-based eMINTS instructional to help ensure students’ future academic success.			

**100-063 Sikeston R-VI School District**

SCHOOLS INVOLVED Sikeston Fifth and Sixth Grade Center		CONTACT PERSON NAME, TITLE, TELEPHONE NUMBER Michelle Gilmer, Instructional Technologist (417) 471-0733	
GRANT AWARD 2009-10 \$399,488 2010-11 \$149,793	GRANT PROGRAM Established eMINTS	Curricular Focus Communication arts, science, mathematics, social studies	Participants 15 teachers and 520 students, grades 5-6
Project Description  In a previous eMINTS implementation, serving eight of twelve grade 6 classrooms, the response from teachers, parents, and students was so great that the district developed plans to expand the program into the remaining 5th and 6 <sup>th</sup> -grade classrooms. This project creates a large cadre of teachers able to provide cross-curricular experiences and integrate technology in constructivist-based lessons for all students in the building.			

**115-115 St Louis Public Schools**

SCHOOLS INVOLVED		CONTACT PERSON NAME, TITLE, TELEPHONE NUMBER	
Carnahan High School of the Future		Bruce Green, Principal (314) 457-0582	
GRANT AWARD	GRANT PROGRAM	Curricular Focus	Participants
2009-10 \$390,350 2010-11 \$114,684	Established eMINTS	Communication arts, science, mathematics, social studies	9 teachers and 425 students, grades 9-12
<p>Project Description</p> <p>Committed to the integration of technology within a standards-based curriculum to prepare students for the 21<sup>st</sup> century, the school’s vision statement calls for the school to create a community of learners engaged in a college-prep program [and] graduate leaders prepared for the rigorous challenges of the 21<sup>st</sup> century.” In implementing the eMINTS program, teachers and students follow that vision, participating in instructional practices that improve educational experiences and develop higher-order thinking skills. The collaborative learning opportunities allow students to challenge one another to develop greater understanding.</p>			

#### IV. THE EVALUATION (SUMMARY)

Six of the projects were evaluated by the Missouri Office of Social and Economic Data Analysis (OSED A) and the effort was lead by John Hagar, Research Associate (HagarJ@missouri.edu). At each of seven districts, the annual Missouri Assessment Program analysis for mathematics and communication arts was compared between 2009-2001. A compressed version of that report follows as well as a complete report for one district (additional district-specific reports are available upon request).

*The following Missouri Assessment Program (MAP) analysis compares eMINTS students' scores on MAP communication arts and mathematics tests taken at two points in time, 2009 and 2011. The organization of this report centers around three analytical foci. It begins with non-statistical contingency table reporting on the four MAP proficiency levels (Below Basic, Basic, Proficient, and Advanced) for each MAP test in communication arts and mathematics, by the five student characteristics: all students, minority and white students, male and female students, free and reduced lunch and non-free and reduced lunch students, and IEP and non-IEP students.*

*The OSED A reports include a statistical test of the Missouri Assessment Program (MAP) levels shown on the contingency table below where the four MAP proficiency levels have been collapsed into the categories of: **proficient and non-proficient**. These categories are then compared to the five student characteristics that comprise the analysis. The **Chi-Square statistic** was used to test whether distributions of the categorical variables differ from one another. The alpha level of significance is .05.*

*Also included is information from the scale score of each MAP (grade level) test in communication arts and mathematics. For this analysis, the scale scores were transformed into z-scores to overcome statistical bias resulting in the tests being tailor-made to grade level, which generally always guarantees improvement over time. A **paired samples, T-Test of statistical significance\*** was used to test for significant differences in MAP **scale scores** between 2009 and 2011. The alpha level of significance is .05.*

Group Divisions.	Communication Arts	Mathematics
All Students	Y,N,N*,N*,N*,N,N*	Y, N,N*,N*,N,N*,Y,
Minority	N, N,N,N,N,N,N,N*	N,--,N*,N,N,N,Y,
White	Y*,N,N*,N,N,Y,N*,N,	Y, N,N*,N,N,N*,N,
Female	N*,N*,N*,N*,N*,N*,N*,	N*, N, N*,N*,N,N*,Y,
Male	Y*,N, N*,N,N*,N,N,	Y*,N, N*,N,N,N,Y,
Non- F/R Lunch	N, N,N,N,N,N*,N,	Y, N,N,N,N,N,N*,
Free/Reduced Lunch	Y*,N,N*,N,N*,N,N*,	Y*,N,N*,N,N,N*,Y,
Non-Individual Education Plan	Y*,N,N*,N,N*, N,N*,	Y,N,N*,N,N,N*,Y*,
With IEP	N,N,N*,N,N,N, N,	N,N,N*,N,--,Y,Y,

*Y= proficient; Y\*= no on scale scores; N= not proficient; N\*= yes on scale scores*

- Cameron Middle School
- Gasconade County - Hermann High School
- Lebanon - Boswell & Hillcrest Elementary
- Cameron - Parkview Elementary

- *Sedalia - Heber Hunt Elementary*
- *Sikeston - 5th & 6th Grade Center*
- *St. Louis - Carnahan High School*

Also, three projects were evaluated by Angela Hull, Ph.D. and an abbreviated version of those evaluations follow:

- Cassville Intermediate and Middle Schools
- Jefferson City - East Elementary
- North Kansas City - four elementary schools

Two districts, Jefferson City and North Kansas City, had instituted eMINTS projects in prior years. Cassville was a new program for 2010-11. These three districts began or expanded professional development activities of 87 teachers serving 1,795 students. While statistical data was collected, all districts measured changes in teacher/student behaviors with pre- and post-tests and observed changes in teaching and student learning practices (see Appendix A). Classrooms have become less teacher-directed and more student-centered. Grade level collaboration has increased and students have improved their interpersonal skills and abilities.

DISTRICT	READING IMPROVEMENT	STUDENT TECHNOLOGY LITERACY	TEACHER INTEGRATED TECHNOLOGY	GAINS IN TEACHER PROFICIENCY
Cassville -new	Slight improvement ↔↔	Some improvement ↖↗	Self-reported ↑	Tech surveys show ↑
Jefferson City - expanded	71-81% improvement ↖↗	Statistically ↖↗	Self-reported ↑	Tech surveys show ↑
North Kansas City - expanded	Inconclusive ↔↔	Inconsistent Data ↔↔	Self-reported ↑	Tech surveys show ↑

During 2009-10 and 2010-11, the Missouri Census of Technology was used as one measure of technology availability and examination of the use and effectiveness of those technologies. In 2011, the results of the census have been delayed and were not examined (at this time) for grant purposes.

Six districts were evaluated by the Office of Social and Economic Analysis (OSEDA) and a sample district report follows. Also, OSEDA performed on-site evaluations of teacher implementation and growth and a sample report (from Lebanon R-3 School District) can be found following:

**Lebanon R-3 School District** (evaluated by Office of Social and Economic Analysis)

**Hillcrest School MAP Analysis**

The following MAP analysis compares eMINTS students' scores on MAP communication arts and mathematics tests taken at two points in time, 2009 and 2011. The organization of this report centers around three analytical foci. It begins with non-statistical contingency table reporting on the four MAP proficiency levels (Below Basic, Basic, Proficient, and Advanced) for each MAP test, communication arts (COM) and mathematics (MAT), by the five student characteristics: all students, minority and white students, male and female students, free and reduced lunch and non-free and reduced lunch students, and IEP and non-IEP students.

Following the non-statistical testing contingency table section is a statistical test of the MAP level contingency table where the four MAP proficiency levels have been collapsed into the categories of: proficient and non-proficient. These categories are then compared to the five student characteristics that comprise the analysis. The Chi-Square statistic is used to test whether distributions of the categorical variables differ from one another. The alpha level of significance is .05.

Whereas the first two sections of this report focus on the MAP levels, the third and final section focuses on the scale score of each MAP test, communication arts and mathematics. For this analysis, the scale scores were transformed into z-scores to overcome statistical bias resulting in the tests being tailor made to grade level, which generally always guarantees improvement over time. A paired samples T-Test of statistical significance was used to test for significant differences in MAP scale scores between 2009 and 2011. The alpha level of significance is .05.

**COMMUNICATION ARTS - NON-STATISTICAL CONTINGENCY TABLE ANALYSIS**

**All Students**

		COM MAP Level							
		Below Basic		Basic		Proficient		Advanced	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent
Year	2009	8	2.6%	156	51.5%	104	34.3%	35	11.6%
	2011	23	7.1%	148	46.0%	120	37.3%	31	9.6%

**Minority Status = Minority**

		COM MAP Level							
		Below Basic		Basic		Proficient		Advanced	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent
Year	2009	0	.0%	11	44.0%	10	40.0%	4	16.0%
	2011	3	11.1%	9	33.3%	12	44.4%	3	11.1%

a. Minority Status = Minority

**Minority Status = White**

		COM MAP Level							
		Below Basic		Basic		Proficient		Advanced	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent
Year	2009	8	2.9%	145	52.3%	93	33.6%	31	11.2%
	2011	20	6.8%	139	47.1%	108	36.6%	28	9.5%

a. Minority Status = White

**Student Sex = Female**

		COM MAP Level							
		Below Basic		Basic		Proficient		Advanced	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent
Year	2009	1	.7%	62	44.3%	55	39.3%	22	15.7%
	2011	4	2.7%	65	43.3%	60	40.0%	21	14.0%

a. Student Sex = Female

**Student Sex = Male**

		COM MAP Level							
		Below Basic		Basic		Proficient		Advanced	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent
Year	2009	7	4.3%	94	58.0%	48	29.6%	13	8.0%
	2011	19	11.0%	83	48.3%	60	34.9%	10	5.8%

a. Student Sex = Male

**F/R Lunch Status = F/R Lunch No**

		COM MAP Level							
		Below Basic		Basic		Proficient		Advanced	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent
Year	2009	0	.0%	49	41.5%	53	44.9%	16	13.6%
	2011	3	2.4%	46	36.2%	56	44.1%	22	17.3%

a. F/R Lunch Status = F/R Lunch No

**F/R Lunch Status = F/R Lunch Yes**

		COM MAP Level							
		Below Basic		Basic		Proficient		Advanced	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent
Year	2009	8	4.3%	107	58.2%	50	27.2%	19	10.3%
	2011	20	10.3%	102	52.3%	64	32.8%	9	4.6%

a. F/R Lunch Status = F/R Lunch Yes

**IEP Status = IEP No**

		COM MAP Level							
		Below Basic		Basic		Proficient		Advanced	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent
Year	2009	2	.8%	134	50.6%	95	35.8%	34	12.8%
	2011	5	1.8%	130	46.4%	115	41.1%	30	10.7%

a. IEP Status = IEP No

**IEP Status = IEP Yes**

		COM MAP Level							
		Below Basic		Basic		Proficient		Advanced	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent
Year	2009	6	16.2%	22	59.5%	8	21.6%	1	2.7%
	2011	18	42.9%	18	42.9%	5	11.9%	1	2.4%

a. IEP Status = IEP Yes

**MATHEMATICS - NON-STATISTICAL CONTINGENCY TABLE ANALYSIS**

**All Students**

		MAT MAP Level							
		Below Basic		Basic		Proficient		Advanced	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent
Year	2009	4	1.3%	151	49.8%	124	40.9%	24	7.9%
	2011	28	8.7%	117	36.3%	142	44.1%	35	10.9%

**Minority Status = Minority**

		MAT MAP Level							
		Below Basic		Basic		Proficient		Advanced	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent
Year	2009	2	8.0%	9	36.0%	10	40.0%	4	16.0%
	2011	3	11.1%	9	33.3%	10	37.0%	5	18.5%

a. Minority Status = Minority

**Minority Status = White**

		MAT MAP Level							
		Below Basic		Basic		Proficient		Advanced	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent
Year	2009	2	.7%	142	51.3%	113	40.8%	20	7.2%
	2011	25	8.5%	108	36.6%	132	44.7%	30	10.2%

a. Minority Status = White

**Student Sex = Female**

		MAT MAP Level							
		Below Basic		Basic		Proficient		Advanced	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent
Year	2009	4	2.9%	76	54.3%	51	36.4%	9	6.4%
	2011	8	5.3%	67	44.7%	57	38.0%	18	12.0%

a. Student Sex = Female

**IEP Status = IEP Yes**

		MAT MAP Level							
		Below Basic		Basic		Proficient		Advanced	
Year		Number	Percent	Number	Percent	Number	Percent	Number	Percent
2009		1	2.7%	25	67.6%	9	24.3%	2	5.4%
2011		19	45.2%	16	38.1%	5	11.9%	2	4.8%

a. IEP Status = IEP Yes

**COMMUNICATION ARTS - STATISTICAL CONTINGENCY TABLE ANALYSIS****All Students**

		COM MAP Level			
		Not Proficient		Proficient	
Year		Number	Percent	Number	Percent
2009		164	54.1%	139	45.9%
2011		171	53.1%	151	46.9%

**Pearson Chi-Square Tests**

		COM MAP Level
Year	Chi-square	.065
	df	1
	Sig.	.798

The chi-square statistic was not significant at the critical alpha level,  $\chi^2 = .065$ ,  $p = .798$ . The table above shows that students did not significantly increase in percent proficient between 2009 and 2011.

**Minority Status = Minority**

		COM MAP Level			
		Not Proficient		Proficient	
		Number	Percent	Number	Percent
Year	2009	11	44.0%	14	56.0%
	2011	12	44.4%	15	55.6%

a. Minority Status = Minority

**Pearson Chi-Square Tests<sup>a</sup>**

		COM MAP Level	
Year	Chi-square		.001
	df		1
	Sig.		.974

The chi-square statistic was not significant at the critical alpha level,  $\chi^2=.001$ ,  $p=.974$ . The table above shows that minority students did not significantly increase in percent proficient between 2009 and 2011.

**Minority Status = White**

		COM MAP Level			
		Not Proficient		Proficient	
		Number	Percent	Number	Percent
Year	2009	153	55.2%	124	44.8%
	2011	159	53.9%	136	46.1%

a. Minority Status = White

**Pearson Chi-Square Tests<sup>a</sup>**

		COM MAP Level	
Year	Chi-square		.103
	df		1
	Sig.		.748

The chi-square statistic was not significant at the critical alpha level,  $\chi^2=.103$ ,  $p=.748$ . The table above shows that white students did not significantly increase in percent proficient between 2009 and 2011.

## MATHEMATICS - STATISTICAL CONTINGENCY TABLE ANALYSIS

### All Students

		MAT MAP Level			
		Not Proficient		Proficient	
		Number	Percent	Number	Percent
Year	2009	155	51.2%	148	48.8%
	2011	145	45.0%	177	55.0%

### Pearson Chi-Square Tests

Year		MAT MAP Level	
		Chi-square	
			2.346
		df	1
		Sig.	.126

The chi-square statistic was not significant at the critical alpha level,  $\chi^2=2.346$ ,  $p=.126$ . The table above shows that students did not significantly increase in percent proficient between 2009 and 2011.

### Minority Status = Minority

		MAT MAP Level			
		Not Proficient		Proficient	
		Number	Percent	Number	Percent
Year	2009	11	44.0%	14	56.0%
	2011	12	44.4%	15	55.6%

a. Minority Status = Minority

### Pearson Chi-Square Tests<sup>a</sup>

Year		MAT MAP Level	
		Chi-square	
			.001
		df	1
		Sig.	.974

The chi-square statistic was not significant at the critical alpha level,  $\chi^2=.001$ ,  $p=.974$ . The table above shows that minority students did not significantly increase in percent proficient between 2009 and 2011.

**Minority Status = White**

		MAT MAP Level			
		Not Proficient		Proficient	
		Number	Percent	Number	Percent
Year	2009	144	52.0%	133	48.0%
	2011	133	45.1%	162	54.9%

a. Minority Status = White

**Pearson Chi-Square Tests<sup>a</sup>**

		MAT MAP Level	
		Chi-square	
Year			2.724
	df		1
	Sig.		.099

The chi-square statistic was not significant at the critical alpha level,  $\chi^2 = 2.724$ ,  $p = .099$ . The table above shows that white students did not significantly increase in percent proficient between 2009 and 2011.

**Student Sex = Female**

		MAT MAP Level			
		Not Proficient		Proficient	
		Number	Percent	Number	Percent
Year	2009	80	57.1%	60	42.9%
	2011	75	50.0%	75	50.0%

a. Student Sex = Female

**Pearson Chi-Square Tests<sup>a</sup>**

		MAT MAP Level	
		Chi-square	
Year			1.485
	df		1
	Sig.		.223

The chi-square statistic was not significant at the critical alpha level,  $\chi^2 = 1.485$ ,  $p = .223$ . The table above shows that female students did not significantly increase in percent proficient between 2009 and 2011.

**Student Sex = Male**

		MAT MAP Level			
		Not Proficient		Proficient	
		Number	Percent	Number	Percent
Year	2009	75	46.3%	87	53.7%
	2011	70	40.7%	102	59.3%

a. Student Sex = Male

**Pearson Chi-Square Tests<sup>a</sup>**

		MAT MAP Level	
Year	Chi-square		1.064
	df		1
	Sig.		.302

The chi-square statistic was not significant at the critical alpha level,  $\chi^2 = 1.064$ ,  $p = .302$ . The table above shows that male students did not significantly increase in percent proficient between 2009 and 2011.

**F/R Lunch Status = F/R Lunch No**

		MAT MAP Level			
		Not Proficient		Proficient	
		Number	Percent	Number	Percent
Year	2009	45	38.1%	73	61.9%
	2011	43	33.9%	84	66.1%

a. F/R Lunch Status = F/R Lunch No

**Pearson Chi-Square Tests<sup>a</sup>**

		MAT MAP Level	
Year	Chi-square		.486
	df		1
	Sig.		.486

The chi-square statistic was not significant at the critical alpha level,  $\chi^2 = .486$ ,  $p = .486$ . The table above shows that non-free and reduced lunch students did not significantly increase in percent proficient between 2009 and 2011.

**F/R Lunch Status = F/R Lunch Yes**

		MAT MAP Level			
		Not Proficient		Proficient	
		Number	Percent	Number	Percent
Year	2009	110	59.8%	74	40.2%
	2011	102	52.3%	93	47.7%

a. F/R Lunch Status = F/R Lunch Yes

**Pearson Chi-Square Tests<sup>a</sup>**

		MAT MAP Level	
Year	Chi-square		2.146
	df		1
	Sig.		.143

The chi-square statistic was not significant at the critical alpha level,  $\chi^2 = 2.146$ ,  $p = .143$ . The table above shows that free and reduced lunch students did not significantly increase in percent proficient between 2009 and 2011.

**IEP Status = IEP No**

		MAT MAP Level			
		Not Proficient		Proficient	
		Number	Percent	Number	Percent
Year	2009	129	48.7%	136	51.3%
	2011	110	39.3%	170	60.7%

a. IEP Status = IEP No

**Pearson Chi-Square Tests<sup>a</sup>**

		MAT MAP Level	
Year	Chi-square		4.879
	df		1
	Sig.		.027*

The chi-square statistic was significant at the critical alpha level,  $\chi^2 = 4.879$ ,  $p = .027$ . The table above shows that non-IEP students did significantly increase in percent proficient between 2009 and 2011.

**IEP Status = IEP Yes**

		MAT MAP Level			
		Not Proficient		Proficient	
		Number	Percent	Number	Percent
Year	2009	26	70.3%	11	29.7%
	2011	35	83.3%	7	16.7%

a. IEP Status = IEP Yes

**Pearson Chi-Square Tests<sup>a</sup>**

		MAT MAP Level	
Year	Chi-square		1.908
	df		1
	Sig.		.167

The chi-square statistic was not significant at the critical alpha level,  $\chi^2 = 1.908$ ,  $p = .167$ . The table above shows that IEP students did not significantly increase in percent proficient between 2009 and 2011.

**COMMUNICATION ARTS AND MATHEMATICS - T-TEST STATISTICAL ANALYSIS****All Students****Paired Samples Statistics**

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	COM Scale z-Score 2011	-.1105550	302	.94451025	.05435046
	COM Scale z-Score 2009	.1070360	302	.79155834	.04554906
Pair 2	MAT Scale z-Score 2011	-.1173770	302	.95839429	.05514939
	MAT Scale z-Score 2009	.1230526	302	.82153410	.04727398

### Paired Samples Test

		Paired Differences							
			Std.	Std.	95% Confidence				
		Mean	Deviation	Error	Interval of the		t	df	
			n	Mean	Lower	Upper		Sig. (2-	
								tailed)	
Pair 1	COM Scale z-Score 2011 - COM Scale z-Score 2009	-.21759	.643869	.037050	-.290501	.144680	5.873	301	.000
		102	45	52	.88	.17			
Pair 2	MAT Scale z-Score 2011 - MAT Scale z-Score 2009	.24042	.709868	.040848	.320814	.160045	5.886	301	.000
		964	08	32	.08	.19			

The t-statistic was significant for the communication arts scale score at the critical alpha level,  $t(301)=-5.873$ ,  $p=.000$ . The table above shows that all students did increase their scale score between 2009 and 2011.

The t-statistic was significant for the mathematics scale score at the critical alpha level,  $t(301)=-5.886$ ,  $p=.000$ . The table above shows that all students did increase their scale score between 2009 and 2011.

### SEDALIA, HEBER HUNT SCHOOL

**1. Describe the district's intent to continue the project. Address participants, professional development, specific activities and sources of funding.**

*Participants:* All teachers who participated in comprehensive and eMINTS4All training during year one completed training during year two of this grant implementation. However, changes have been made in the administration and two eMINTS4All teachers will be moving to the junior high school with the administrator. They plan to share and collaborate with junior high staff the knowledge gained from eMINTS training.

Furthermore, an additional second grade teacher has been hired. She will begin eMINTS training, along with a replacement third grade teacher, during the 2011-2012 school year.

*Specific Activities:* During year two of the eMINTS implementation, grade level teams created and posted lesson plans on the server, hyperlinking all web-related resources. This has been very beneficial for staff, and they plan to continue to do this after the grant project ends.

*Professional Development:* Although eMINTS professional development will no longer be taking place, teachers plan to continue collaborating and improving upon current instructional strategies. The current schedule allows for grade level teachers to have the

same plan time each day, which provides teachers with opportunities to share and reflect upon teaching and learning.

*Funding:* The district has a technology budget in place which allows for upgrades and replacements for each school within Sedalia School District. Heber Hunt currently has the most up-to-date technology, and the district is determined to keep our school equipped to continue teaching using the tools acquired from the eMINTS grant.

**2. Describe any refinements or changes the building / district would make to improve the success of the project. Provide any additional comments about the project's implementation and outcome (such as an unexpected barriers and/or benefits).**

When discussing possible improvements, teachers mentioned a few of the same suggestions made at the end of year one of the grant project. eMINTS participants believe they would have benefited from having more professional development time to learn about and create lessons using SMART Notebook and other classroom communication/presentation tools. Although teachers are using technology, it is a struggle to find time to create their own lessons specific to classroom activities using technology tools.

Also, teachers feel they could use more training and experience with troubleshooting. Sometimes technology fails at the most inopportune times, making it difficult or impossible to continue with the lesson. It would be very beneficial if teachers could solve the technology issue without having to put in a tech request and wait for the tech department to do the troubleshooting.

A few of the most unexpected benefits are the love of learning exhibited by many students who previously sometimes seemed “unteachable,” as well as the rate at which students learn to use the technology. They are eager to learn using technology tools and are now willing to take risks throughout the learning process. Students do not show the hesitation as adults often do when trying something new. This brings an excitement to classroom learning that has been enlightening and refreshing for both students and teachers at Heber Hunt Elementary.

**Evaluation data for three projects was provided (and is available upon request):**

Angela M. Hull, Ph.D.; Education Policy, Research & Evaluation, 6703 Madison Creek, Columbia, MO 65203.

**Year 2 Goals and Expected Outcomes**

North Kansas City has one primary goal for this eMINTS project: To improve instruction and student achievement through the use of the constructivist instructional practices and the integration of technology and to ensure that students are technologically literate and successfully master the Grade Level Expectations so they are prepared to learn. The expected outcomes are the goals and objectives, listed in Evaluation Questions, below.

**III. Evaluation Questions**

**Student Learning Objectives: Academic Achievement**

Baseline/Need:

Based on 2008 MAP Communication Arts data an average of 57.3% of students is not mastering essential mastery objectives. In addition 2008 MAP Math data indicates an average of 52% of students is not mastering tested objectives.

*Year 2 Objective 1*

Elementary students in grades 4 and 5 eMINTS and grade 3 eMINTS4All classes in the four targeted schools will demonstrate a higher increase in their mastery of grade level essential mastery objectives in communication arts, math, and science as compared to students in noneMINTS and eMINTS4All classrooms with similar populations, as measured by North Kansas City School's developed annual pre/post Essential Grade Level Expectations Mastery Test.

*Year 2 Evaluation Plan 1*

Students will take the District Essential Grade Level Expectations Test on pre/post basis. Items will be selected from released MAP and NAEP items as well as other appropriate resources. These assessments reflect both the appropriate content and DOK. These assessments will be in Communication Arts, Math and Science. Assessments will be scored by the eMINTS and eMINTS4All teachers and reviewed by the District Assessment Department. The results will be entered into the District electronic management system and compared with those scores from the non-eMINTS School. Student mastery will be reported to each building.

*Objective 2 regarding grades was eliminated due to internal procedures regarding NKCS's central data-gathering and grades.*

**Student Learning Objectives: Student Behavior**

Note: NKCS utilizes a mastery model for reporting student behavior as well as academic achievement.

Baseline/Need: For behaviors identified as those that support learning, data indicate that the average percentage of students identified as having "not mastered" these skills at the four targeted schools is nearly 50%.

*Year 2 Objective 3*

By the May of 2011, students in eMINTS classrooms will demonstrate an average mastery rate of 80% or show 5% improvement; and students in eMINTS4All classrooms will demonstrate an average mastery rate of 70% or show 2% improvement, whichever is greater for the following grade card outcomes on the elementary grade card:

- Completes assignments on time/turns in homework when due
- Stays actively engaged in classroom activities
- Participates/contributes productively in various settings
- Eager to learn/positive attitude
- Takes responsible risks

#### *Year 2 Evaluation Plan 3*

Teachers in eMINTS and eMINTS4All classrooms will assess each essential mastery behavior objective on a quarterly basis to determine student progress in identified learning behaviors. These assessment results will be provided to the project evaluator by the Certified eMINTS Instructional Specialist. By June of 2011 the results will be tabulated and included in the Final Evaluation Report.

#### **Student Learning Objectives: Student Technology Literacy**

Baseline: Based on 2008-2009 data on the District mastery grade level report cards for the four targeted buildings, 94% of students do not demonstrate “mastery” or were not assessed on the NETS- student technology standards.

#### *Year 2 Objective 4*

By the end of Year 2 100% of students in eMINTS and 85% of students in eMINTS4All classrooms will demonstrate “mastery” on the NETS student technology standards reported on the District grade level report cards as measured by teacher-developed observation protocols, assessments and scoring guides.

#### *Year 2 Evaluation Plan 4*

By May of 2011, eMINTS and eMINTS4All teachers will have administered assessments, completed observational protocols, collected and scored artifacts from student portfolios using grade level scoring guides that target the grade level NETS technology standards included on District report cards. Appropriate assessments will be used and modeled after the National Educational Technology Standards for Students Connecting Curriculum and Technology resource guide. The results of these assessments will be reported to the eMINTS Instructional Specialist who will forward the data to the external evaluator to analyze the scores and report the findings to the District in its Final Evaluation Report.

#### **Teacher Learning Objectives: Technology Literacy**

Baseline/Need: 100% of the 33 areas of self-evaluation regarding teacher instructional technology integration and instructional practices fell below the desired mean of 3.5 or greater.

#### *Year 2 Objective 1*

Third, fourth and fifth grade eMINTS and eMINTS4All teachers will self-evaluate their technology literacy and integration at high levels as demonstrated by a mean rating of 3.5 or greater on each objective within the Knowledge, Confidence and Experience technology surveys.

#### *Year 2 Evaluation Plan 1*

The District’s external evaluator will administer and analyze the self-evaluation survey results to determine whether teachers’ results met the desired 3.5 mean for each of the 33 surveyed areas during Year 1 and report findings in the end of 1 Project Evaluation Report. Teachers are also required to participate in a survey from the eMINTS National Center.

eMINTS will tabulate this data and share the results with the Dr. Angie Hull.

### **Teacher Learning Objectives: Instructional Strategies**

Baseline/Need: Fewer than 75% of the teachers surveyed reported that they provide students with opportunities to construct and work on long-term projects of their own design, with one school's teacher survey percentage below 50%.

#### *Year 2 Objective 2*

By May 2011, there will be a 10% increase at each school in teachers' implementation of opportunities to construct and work on long-term projects of students' own design.

#### *Year 2 Evaluation Plan 2*

The MSIP Faculty Question #30 will serve as the basis for this assessment. This questionnaire will be administered to eMINTS and eMINTS4All teachers by May 2011. The results will be provided to the external evaluator who will score and analyze the survey results to determine whether teacher confidence and beliefs improved and report those findings to the District in the end-of-Year 1 Project Evaluation Report.

Baseline/Need: Teachers have not been exposed to the "Hallmarks of an Effective eMINTS Classroom" nor are they currently using the eMINTS instructional model.

#### *Year 2 Objective 3*

By the end of year 2, eMINTS teachers will submit an electronic portfolio featuring content that successfully meets the criteria established by the eMINTS National Center as a "passing" portfolio.

#### *Year 2 Evaluation Plan 3*

An aggregate number detailing the percentage of teachers achieving "passing" scores will be obtained from the eMINTS National Center and submitted by the project contact and reported in the Final Evaluation Report.

#### *Year 2 Objective 3.1*

By the end of the 2010-2011 school year, eMINTS4All teachers will achieve a "transition" or higher rating on 80% of the items on a walk-through completed by the Certified eMINTS Instructional Specialist and the building principal going through the eMINTS4Admin program. The walk-through will be completed using the second semester "look fors" based on the Hallmarks of an Effective eMINTS Classroom.

#### *Year 2 Evaluation Plan 3.1*

The District's external evaluator will be given the rating for each teacher. The evaluator will create a summary report detailing the percentage of teachers at each rating level of the "look fors" based on the Hallmarks of an Effective eMINTS Classroom. This will be included in the Final Evaluation Report.

## **IV. Evaluation Procedures**

### **Sample**

The population for the evaluation is all teachers in the four participating schools and their students, as well as a comparison group from Linden West, an elementary school within North Kansas City. Participation was high.

### **Data Collection**

Specific measurement tools on teacher attitudes, skills and levels of implementation include: interviews, surveys, focus groups, rubrics, assessment data including, participation data, attendance logs, PD evaluations, and observations of teacher practices. In addition, assessment of each teacher and their eMINTS portfolio will demonstrate their level of implementation on the overall eMINTS components that reflect progress in reaching high levels of implementation on the *Hallmarks of an Effective eMINTS Classroom* and meeting the NETS Teacher Standards. Specific student measurement tools include rubrics, electronic

portfolios, assessment data on mastery of state and local essential grade level outcomes, NETS Student Standards, and learning behaviors and attitudes. The eMINTS program evaluation consists of three distinct components that incorporate data collected and analyzed by both the eMINTS National Center and the project's external evaluator.

Evaluation of the input provided to teachers – the eMINTS professional development program (including materials and the delivery mechanism) to insure that the program contents and processes are delivered in a manner that is consistent with the program and assures fidelity to the program's goals and intent.

Evaluation of the teacher and student product output – an electronic portfolio of specific artifacts (both teacher and related student products) to document the effect of the input (professional development) on the teacher's practice, the teacher's mastery of key eMINTS objectives and impact on the subsequent student learning as verified by student products related to the teacher artifacts.

Evaluation of student academic performance – an analysis of student performance as measured by standardized academic assessment instruments.

NKCS used composite scores for portfolios submitted by their teachers that are provided to the District by the National eMINTS Center as part of our local project evaluation.

The 8-9 visits with eMINTS4All teachers were provided in the same manner they are provided for eMINTS teachers. Ongoing contact (e-mail, drop-in visits, etc.) also occurred in addition to formal classroom visits. In addition, the eMINTS4All teachers met as a small group during common planning time or after school to cover general support needs and then follow up with shorter visits in the classroom.

### **Evaluation Approach**

This summative evaluation is a case study approach, with performance measured against North Kansas City's own instructional goals, using a comparison school within the district. NKCS regularly uses formative assessment through eMINTS classroom observations and walk-throughs by staff and administration. The evaluation as a whole is more useful to the district specifically rather than external scientific standards.

## VI. RECOMMENDATIONS AND LESSONS LEARNED

Evaluations for all grants took place throughout the two-year implementation period and summative data was collected in April and May 2011. Data from the Missouri Assessment Program was collected in the spring of 2011 and reported by the Office of Social and Economic Analysis in September 2011.

Some preliminary findings from evaluators:

- Teacher technology literacy was statistically significantly improved from Year 1 to Year 2.
- Teacher technology confidence, experience and knowledge increased from Year 1 to Year 2 with very few exceptions.
- The student behavior objective was partially achieved in both years, and for the student cohort in eMINTS both years, this objective was almost perfectly reached.
- Given issues with the accuracy of the Depth of Knowledge assessments, the student achievement objective could not definitively be determined (in three districts). In both years, the data seem inconsistent, with large increases and decreases throughout the year, which seem unlikely.
- The Depth of Knowledge assessments need to be reviewed for accuracy and fidelity to data gathering/test-taking practices. The results indicate irregularities that question the veracity of the assessments themselves and their administration (time given, number of students taking tests, use of data afterward).
- Some of the objectives were very high, particularly in teacher technology literacy, and as a result may inadvertently draw attention away from progress, which in many cases were statistically significantly improved even though the objective as written was not achieved.

SEDALIA, HEBER HUNT SCHOOL (excerpt from on-site evaluation of teacher/student evaluation findings)

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Furthermore, an additional second grade teacher has been hired. She will begin eMINTS training, along with a replacement third grade teacher, during the 2011-2012 school year.

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*Funding:* The district has a technology budget in place which allows for upgrades and replacements for each school within Sedalia School District. Heber Hunt currently has the

most up-to-date technology, and the district is determined to keep our school equipped to continue teaching using the tools acquired from the eMINTS grant.

**2. Describe any refinements or changes the building / district would make to improve the success of the project. Provide any additional comments about the project's implementation and outcome (such as an unexpected barriers and/or benefits).**

When discussing possible improvements, teachers mentioned a few of the same suggestions made at the end of year one of the grant project. eMINTS participants believe they would have benefited from having more professional development time to learn about and create lessons using SMART Notebook and other classroom communication/presentation tools. Although teachers are using technology, it is a struggle to find time to create their own lessons specific to classroom activities using technology tools.

Also, teachers feel they could use more training and experience with troubleshooting. Sometimes technology fails at the most inopportune times, making it difficult or impossible to continue with the lesson. It would be very beneficial if teachers could solve the technology issue without having to put in a tech request and wait for the tech department to do the troubleshooting.

A few of the most unexpected benefits are the love of learning exhibited by many students who previously sometimes seemed “unteachable,” as well as the rate at which students learn to use the technology. They are eager to learn using technology tools and are now willing to take risks throughout the learning process. Students do not show the hesitation as adults often do when trying something new. This brings an excitement to classroom learning that has been enlightening and refreshing for both students and teachers at Heber Hunt Elementary.

**(Sedalia, MO) Heber-Hunt Classroom Observation Analysis (observed May 3, 2011)**

To gauge the degree and effectiveness of eMINTS classroom implementation, observers looked for (1) class organization; (2) teacher role; (3) lesson characteristics; (4) instructional strategies and methods; (5) eMINTS typology; (6) level of Blooms taxonomy; (7) depth of knowledge; (8) physical climate; (9) instructional climate; (10) communication/interaction; and (11) student engagement.

**1. Class Organization:** Each lesson observed used a variety of organizational patterns. Some classes were primarily pair activity with moderate amounts of whole class instruction included. Some classes were primarily whole class instruction but also put students in pairs for short periods of time to work on a specific project. Small group activities and individuals working alone were also observed. No class relied on one organizational structure for the entire lesson. During the initial observations in 2009 classes observed were primarily organized as whole class instruction.

**2. Teacher Role:** In classrooms with higher levels of students working in pairs or in small groups, the teachers were primarily engaged in facilitating and managing behavior or materials. They also made some use of interactive direction for the whole group, and to a much lesser extent they used direction such as telling or lecturing the whole group. Teachers used more direction in classes with a higher proportion of whole class instruction. The more varied the

instructional pattern during the lesson, the more varied the teacher role in facilitating the lesson. Teachers shifted their roles to meet the needs of the classroom. In five of the classrooms observed in 2009 the teacher was extensively engaged in directing the classroom activity. Other teacher roles observed at that time included to a lesser degree facilitating and coaching, managing behavior or materials, and questioning to higher order thinking skills. In each of these observations the teacher controlled the substance and time allocations for classroom activities.

**3. Characteristics of lesson:** Four of six classrooms observed required students to utilize resources beyond the classroom. There was some flexibility in time allocations provided by the teachers to accommodate student needs. In each class students were permitted and encouraged to edit each other's work. In several lessons addressing real world problems the interests of the students motivated the learning process. All lessons observed during the initial visits were traditional instruction. None incorporated elements of inquiry based learning.

**4. Instructional Strategies and Methods:** A variety of instructional strategies and methods was observed in the classrooms and in many cases within a single classroom. Each teacher used some component of direct instruction during the observed lesson to a greater or lesser extent. Methods included lecture and explicit teaching, drill and practice, and didactic questioning. Indirect instruction was evidenced by activities requiring reading for meaning, reflective discussion between partners or whole group, and writing to inform. One lesson incorporated manipulatives to reinforce math concepts. Independent learning was used in several classes as students conducted WebQuests on assigned topics. All classrooms observed during the 2009 visit relied primarily on direct instruction.

**5. eMINTS Typology<sup>1</sup>:** Through several years of qualitative evaluation of eMINTS classrooms, a typology of eMINTS lessons has emerged to describe the combination of factors that contribute to successful eMINTS implementations. Those lessons which used whole class direct instruction as the primary strategy were categorized as "teacher-centered." In teacher-centered lessons, teachers are in control of the pace and content of class work. Students have little opportunity for inquiry, since answers usually have a limited acceptable response. Although these classes used some pair activities, the specifics of the assignment, time frame, and resources were tightly controlled by the teachers. One lesson which involved an idea generated by the students to collect, analyze and report data through a survey was categorized as "student-facilitated." The student-centered facilitated lesson is characterized by inquiry based learning and evident collaboration between students, and between students and teacher. The student-centered facilitated lesson is in line with the goals of the eMINTS program. Two of the lessons observed were categorized as "hybrid." Hybrid lessons have some characteristics of student-centered facilitated lessons, but still have some characteristics of teacher-centered lessons. Each of the lessons observed during the initial visit in 2009 were categorized as "teacher-centered."

**6. Blooms Taxonomy:** Two of the lessons observed which required students to find answers to questions on a worksheet did not exceed the Knowledge level on Blooms Taxonomy. Two lessons which required students to comprehend, explain or interpret information reached the Comprehension level. In two lessons students were expected to select, transfer and use data and

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<sup>1</sup> See description of eMINTS typology categories at [www.emints.org/evaluation](http://www.emints.org/evaluation). Reports from OSEDA.

principles to accomplish the activity. These two lessons were at the Application level on Bloom's Taxonomy. Four of the six lessons observed during the baseline visit in 2009 were at the Knowledge level on Blooms Taxonomy. The other two lessons reached the Comprehension level at some point when teacher questions asked students to comprehend, explain or interpret information.

**7. Depth of Knowledge:** Four of the six observed lessons which asked students to describe cause and effect, interpret data, estimate, compare or predict were categorized as Level 2 Skill/Concept on the Depth of Knowledge scale. Two of the observed lessons were categorized as at Level 1 Recall on the Depth of Knowledge scale. In the baseline observations in 2009 the four observed lessons categorized as at the Knowledge level on Blooms Taxonomy were also categorized as at Level 1 Recall on the Depth of Knowledge scale. Two lessons which asked students to describe cause and effect, interpret data, estimate, compare or predict were categorized as Level 2 Skill/Concept on the Depth of Knowledge scale

**8. Physical Climate:** The physical climate in each classroom was observed to be superior. Adequate space was available in the classrooms to accommodate a variety of instructional activities. Classrooms were clean, attractive, and free from external disruptions. Observations conducted in 2009 noted that the physical climate in each classroom was observed to be conducive to learning; however student computers and supporting equipment had not yet arrived. The school was able to maintain an excellent physical space after the installation of the equipment.

**9. Instructional Climate:** The instructional climate was categorized as “conducive to learning” in each classroom observed. Instruction was organized, students were on task throughout the lesson with no disruptive behavior, and there were no external interruptions. The same good instructional climate was noted in 2009.

**10. Communications:** Communications and interactions were observed to be good in each of the six classrooms. There were opportunities for students to communicate with each other and the teacher regarding assigned activities. The 2009 baseline observations noted that communications and interactions were rated minimal in these classrooms where they were observed to be cordial but custodial and teachers maintained rigid control. This is typical in a traditional classroom.

**11. Student Engagement:** Student engagement was rated as high in each of the classrooms observed. An example of a class with high student engagement would find all students willing to participate, concentrating on the learning task, following teachers’ directions, and contributing to discussions when given the opportunity. In 2009 student engagement was rated as high in only two of the six classrooms observed.

#### **Group Interview Analysis**

Group interviews were conducted on May 3 with five of the six comprehensive eMINTS teachers and with a group of students from the comprehensive eMINTS classrooms. The purpose of the interviews was to understand the perceptions of individuals participating in eMINTS implementation. To gauge the degree of effectiveness of eMINTS implementation in a district on student performance, interviewers listen for evidence of instructional methods and strategies aligned to the eMINTS model, evidence of an instructional climate and quality of communications and interactions consistent with a constructivist learning environment, and evidence of appropriate technology integration into the curriculum.

Teachers stated that using technology creates motivation for the students to learn, and that will help with academic achievement. Using computers creates interest in the subject matter according to the teachers. They gave examples of students bringing in information to class from home and posting to blogs from home. Technology also helps move to higher level thinking skills. Students want to learn more and by incorporating technology teachers can do more in depth. While going to greater depth may mean not covering as much of the curriculum in some subject areas, in other areas the technology allows the teacher to cover more.

Student comments related to achievement primarily focused on the use of technology. Students enjoy having time on the computer in eMINTS classes because they can do more WebQuests or other learning activities on the computer. Using the computer to do assignments is more fun than just doing worksheets, which they agreed are boring.

Students were asked to describe projects that they enjoyed during the year and which they thought taught them a lot. They provided a wide variety of responses which included WebQuests to research a famous Missourian, using Edmodo for things like calendars and blogging, Math Magician, Kidspiration, tutorials to practice keyboarding and math skills, Study Island, and the development of a comic book. Some of these projects required students to prepare PowerPoint presentations to share information with the class.

Additional information related to student academic achievement can be found in the “Technology Integration into Teaching Strategies” section of the original report where instructional methods, instructional strategies and lesson characteristics are addressed.

## **VII. APPENDICES**

### **A. eMINTS example of training and pre- and post-surveys**

#### **--Training and portfolio**

Four full days of in-service contact and one hundred contact hours are completed in Year 1 of eMINTS-CPD.

In Year 2 seventy-five contact hours and 2 full days of in-service are completed in eMINTS-CPD.

To demonstrate a change in teaching a teacher portfolio is submitted by each participant before the end of the Year 2. Portfolio components for eMINTS-CPD include: creating a classroom website, writing and teaching a constructivist lesson plan, and writing and teaching a WebQuest. Student artifacts are submitted for the WebQuest and constructivist lesson plan. Thirty-seven modules are covered in eMINTS-CPD program over two years.

#### **--eMINTS-CPD Survey Topic Items**

Email – Send email without attachments

Email – Send email with attachments

File management – move and delete files, set up folders

Create and save documents that include clip art

Format text including bullets, font, borders, cut, copy and paste

Create and publish a classroom newsletter (using, for example, Microsoft Publisher or Word)

Create new presentations using my own or commercial templates (using, for example, Microsoft PowerPoint)

Take photos with a digital camera

Use online tools to save sites

SMART Board/Interactive Whiteboard – presentation tool

SMART Board/Interactive Whiteboard – collaboration tool

SMART Board/Interactive Whiteboard – demonstration tool

SMART Board/Interactive Whiteboard – advanced features

Microsoft Word/Word processing – create and use templates

Publish presentations to the Web

Import videos/charts into presentations

Digital photos – use photo-editing software

Classroom Website – plan and develop

Classroom Website – upload Classroom Website

Classroom Website – publish and update regularly

Inspiration/Concept mapping tool – basic diagrams

Inspiration/Concept mapping tool – use and format symbol libraries

Inspiration/Concept mapping tool – publish diagrams to Web and other presentation software

Revise Existing WebQuest

Create an original WebQuest

Set up basic spreadsheet and graphing

Spreadsheet application requiring formulas

Put raw data into spreadsheet

Scanner – basic uses

Participate in an online project

Create and implement an online project