Running Head: Models of Transformative Collaboration: Effectiveness

Models of Transformative Collaboration: Effectiveness of University-Industry-School Partnerships in Graduate versus Workshop Models of Professional Development

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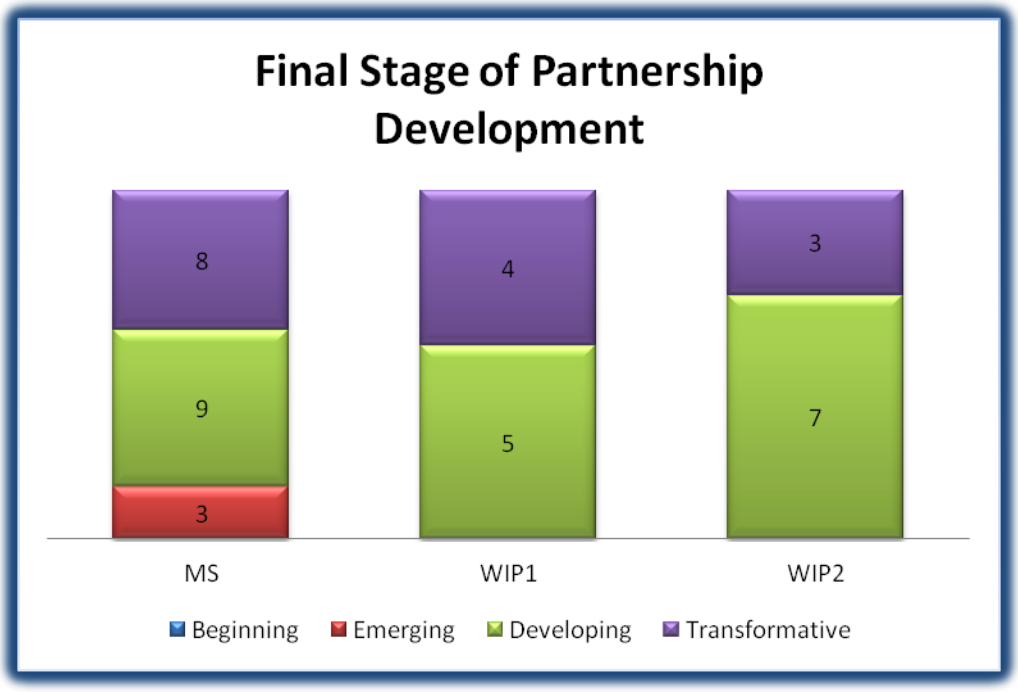
Executive Summary

Qualities of the partnering relationship

In the 2011-2012 implementation year, a final summary of the qualities of the progress of the grants was created across all of the categories investigated for three funded cohorts.

Based on site interviews, many positive relationships matured between partners. As a whole, the majority of partnerships were characterized as collaborative and positive with ongoing communication between partners. Many grants continue to operate with a more centralized model with restricted roles of outside partners. These partnerships were characterized by collaboration with partners outside the lead institution primarily focused in the planning stages. These partnerships were more difficult to describe confidently because no partners outside the project director participated in the interview session.

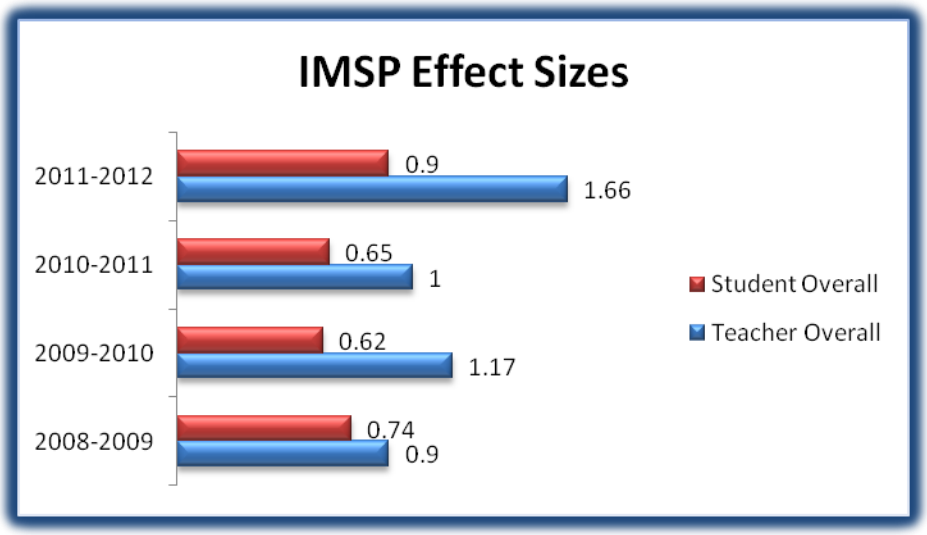
In surveys, the majority of responding teachers and partners (industry, school, higher education, and teacher) were positive about their experiences in terms of the vision, leadership, and technical support.



IMSP Performance and Outcomes

For 2011-2012, both the effect sizes in the 2009 CCSSO meta-analysis of national MSP trends as well as the IMSP meta-analysis results for 2008-2009, 2009-2010, and 2010-2011 were provided as benchmarks. In this context, the IMSP effect sizes for teachers and students are large. Results indicated the IMSP activities in 2011-2012 improved both the teacher and student performance in all the subject domains.

The type of the IMSP program, Master's degree or Workshop Institute program, were not different in impact on the improvement for the teachers and students. Reviewing the cohort trends across the four years of the IMSP, descriptive trends show non-zero, positive effects each year of the grant for both MS degree and Workshop Institute programs. While no inferential comparisons can be made across years, descriptively the IMSP as a whole consistently showed evidence of strong positive impact on both teachers and students.



Sustainability

All survey respondents were generally positive about the sustainability of IMSP practices, although this area was noticeably lower than other areas rated. Sustainability indicators were consistently rated lower than other partnership elements across all years and across all participant types. In interviews, analyses indicated that by definition, the newly-developed graduate degree programs were institutionalized and could be offered again by the institution. Institutionalization was also evident at the classroom level but less established at the district level of LEA partners. Evidence suggests that strong cooperative relationships were established; transformative cohesive partnerships were not achieved systematically.

Summary

Ultimately, the evaluation of these grants did not support the superiority of a particular structure for professional development (graduate program verses workshop) for accomplishing IMSP goals. Both models supported the development of some transformative partnerships and the production and implementation of rigorous professional development programming to impact teachers and students. As the IMSP program evolves, lessons learned from these state level evaluations can inform the program design. Specifically, lessons about supporting the development of quality programming, the implementation of rigorous evaluation frameworks, and promoting partnerships beyond cooperative relationships to established sustainability can inform future ISBE policy for MSP grants.

Evaluation Report: 2008-2012

Background

The Illinois Mathematics and Science Partnership (IMSP) program represents an important response to a very critical need in students' mathematics and science achievement. The IMSP program is designed to improve the performance of students in the areas of mathematics and science by encouraging states, IHEs, LEAs, and elementary and secondary schools to participate in programs that improve and upgrade the status and stature of mathematics and science teaching, focus on the education of mathematics and science teachers as a career-long process; bring mathematics and science teachers together with STEM professionals, and develop more rigorous mathematics and science curricula aligned with state and local standards.

The IMSP program was initiated by the Illinois State Board of Education (ISBE) as a response to achievement needs for Illinois students in mathematics and science as well as to increase the percentage of high school math and science teachers certified in their field

Addressing the Need

Model 1:

The ISBE has developed two MSP programs to address the need for improved mathematics and science instruction in Illinois. The first model currently funded in the IMSP program centers around Master's Degree programs that represent partnerships across colleges of Arts and Science and Education with school districts to provide degree programs uniquely tailored to the needs of the IMSP.

Model 2:

In 2008-2009, the ISBE launched a second model, the Workshop Institute MSP program. This model focused on two week intensive training sessions complemented by shorter training and mentoring sessions throughout the year. The first round of intensive training was conducted in June 2009.

IMSP Program Evaluation Framework

Participants

Initially, the Master's Degree MSP model was represented by twenty-four separate partnerships across ten universities throughout the state. The first phase of development for this model was completed in 2008-2009, a planning phase for finalizing the Master's programs and recruiting teachers to participate.

In 2009-2010, Master's Degree grants moved into the implementation phase of the program with teachers beginning coursework in the fall 2008 or winter 2009. Of the original cohort of grants, sixteen grants across eight universities began the implementation phase of their projects. Four grants across four universities extended their planning to delay implementation until 2009-2010. Four grants were discontinued and did not complete the process to continue into the implementation phase.

The IMSP higher education partners include the Illinois Institute of Technology (IIT), Illinois State University (ISU), Northern Illinois University (NIU), Southern Illinois University – Carbondale (SIU-C), Southern Illinois University – Edwardsville (SIU-E), University of Illinois Urbana Champaign (UIUC), Loyola University (LU), Aurora University (AU), Bradley University (BU), and DePaul University (DU). See Table 1 for breakdown of institutions and content.

In 2011-2012, there were two cohorts of the Workshop Institute Program (WIP) model included in this evaluation report. WIP-1 partners include AU, UIUC, ISU, Lee-Ogle ROE, Monroe-Randolph ROE, Rock Island ROE, and St. Clair ROE (see Table 2). WIP-2 partners include AU, Bureau Henry Stark (BHS) ROE 28, ISU, Monroe-Randolph ROE, Lee-Ogle ROE, St. Clair ROE, NIU, Rock Island ROE (see Table 3). There is a third WIP cohort that is not included in the MSP evaluation for 2011-2012.

Table 1. IMSP Funded Grants – Master's Degree Programs

	Institution										
Content Focus	IIT	ISU	NIU	SIU-C	SIU-E	UIUC	LU	AU	BU	DU	Total
Life Sciences			1**					1			2
Chemistry		1					1*				2
Earth/Space Science								1			1
Elementary		1*		1*		1		1	1		5
Environmental Science									1**		1
IT/Pre-engineering		1	1								2
Physics	1										1
Secondary Mathematics		1	1		1**		1	1		1**	6
Total	1	4	3	1	1	1	2	4	2	1	20

***Implementation delayed until January 2009**

****Implementation delayed until 2009-2010**

Table 2. IMSP Funded Grants – Workshop-Institute Program 1

	Institution							
Content Focus	AU	UIUC	ISU	Lee-Ogle ROE	Monroe-Randolph ROE	Rock Island ROE	St. Clair ROE	Total
Nanotechnology		1						1
Physics	1							1
Middle School Mathematics & Science						1		1
Secondary Science			1		1			2
Secondary Mathematics	1		1	1				3
Secondary Mathematics & Science							1	1
Total	2	1	2	1	1	1	1	9

Table 3. IMSP Funded Grants - Workshop Institute Program 2

	Institution								
Content Focus	AU	BHS ROE 28	ISU	Monroe-Randolph ROE	Lee-Ogle ROE	St. Clair ROE	NIU	Rock Island ROE	Total
Elementary	1								1
Middle School Mathematics				1					1
Secondary Mathematics & Science		1			1				2
Science			1					1	2
STEM			1			1	1		3
Total	1	1	2	1	1	1	1	1	9

Table 4. IMSP Funded Grants - Workshop Institute Program 3 (not included in the evaluation)

Content Focus	AU	ISU	Lewis	Univ of Illinois	Monroe-Randolph ROE	SIU-E	Total
Elementary Science	1		1				2
Middle School Mathematics		1					1
Secondary Science & Technology				1	1	1	3
Science (All grades)	1						1
Math (All grades)		1			1		2
Total	2	2	1	1	2	1	9

Core program components

Each of the programs in both models has the following core elements:

*Content-focused professional development***.** The Master's Program model is focused around new or revised graduate level program granting Master's degree for participants. The Workshop-Institute Program model incorporate intensive content-focused training with mentoring.

Partnerships between STEM organization or business, government agencies, universities, and/or local school districts and school service agencies. All grants in both models have formed important partnerships to execute the grant activities. For the Master's Program model, all grants incorporate collaboration across colleges within their universities. In both the Master's Program and Workshop Institute Program, grants have developed or used existing partnerships with industry, government, education service agencies, or school partners as part of the IMSP. The nature of the partners and their relationships varies across grants.

The Illinois cross-site evaluation framework uses local evaluation results in a systematic way as an indicator of the effectiveness of the IMSP project overall. Meta-analysis methodology is used to provide estimates of the impact across the range of mathematics, science, and STEM partnership initiatives funded by the IMSP program.

For 2010-2011, meta-analyses were applied to model the scale of change in teachers' and students' content knowledge. In addition to meta-analyses, results from qualitative analyses of interviews and artifacts were triangulated with quantitative survey results to provide a more complete picture of Illinois' progress toward its MSP goals.

Overview of Illinois State-Level MSP Evaluation Data Sources

IMSP outcomes evolved from the CCSSO matrix of professional development outcomes (CCSSO, 2007).

There are five categories of outcomes for which local grants submit data to the state each year:

1. Quality of PD Activities

2. Change in teacher content knowledge
3. Change in instructional practice (including strategies, resources, and content knowledge)
4. Change in student achievement
5. Quality of Partnerships

Extended definitions of data sources are available in Appendix A.

State Data Templates – local grants submit aggregated data for the state evaluation for outcomes 1-4.

Participant Surveys – Partners and teacher participants are surveyed each year by the state evaluation team. The survey was adapted from Annual Satisfaction Survey for Community Coalitions. Wolff,T. (2003). A practical approach to evaluating coalitions. In T.Backer(Ed.) Evaluating Community Collaborations. Springer Publishing and covers their perceptions of the effectiveness of the local MSP vision, leadership, communication, technical assistance, progress and outcomes, and sustainability. The survey focuses largely on state outcome 5 as well as providing evidence for outcomes 1, 2, 3, and 5. In addition to site visits, IMSP grantees submitted lists of teacher, school, industry, and higher education partners to complete satisfaction surveys (see Appendix B). Response rate for the surveys was low at 42%. Analyses after the survey administration indicated the internal consistency was strong with $\alpha = .97$ (n=248). In order to compensate for attrition in responses due to the "not applicable" response choice which causes the listwise deletion of cases in analyses and an inflated Cronbach's alpha, these responses were replaced with the appropriate subscale median. The response rate for the grants was low at 42% (ranging from 6% to 68%, median=46%).

Site Visit Interviews & Protocols – Interview protocols conducted by the state site evaluation team are available in Appendix B. The protocol addresses all of the outcome categories 1-5.

Implementation Fidelity

Implementation fidelity is built into the state level evaluation framework. The state requirements rely on the local evaluation models using a variety of data sources to establish the levels of implementation of grant goals in participating teachers' classrooms. Although there are broad commonalities across grants, the unique scope and sequence of the content, strategies, resources, and technologies across programs precludes the use of a single implementation measure for everyone. In addition to the differences in goals and design, differences in local school settings require flexibility at the local grant level for measuring implementation. Contextual variables related to the participants (administrators, teachers, and students), competing reforms in the participating schools, and unique partnerships with STEM industry professionals need to be considered when determining how to measure local implementation.

Common Implementation Areas

Regardless of local needs, all grantees measure the following common implementation elements:

- Integration of content expertise from program activities
- Integration of curriculum resources
- Integration of instructional strategies and classroom activities
- Integration of STEM technologies

These four areas are the focus of the state-level implementation evaluation requirements.

Each local grant measures the levels at which participants are implementing expected grant activities using a variety of data sources (e.g., surveys , logs, interview and/or focus groups, classroom observation, and extant data). Examples of each of these methods for assessing implementation include:

1) Surveys – like the Survey of Enacted Curriculum which gives a broad view of implementation and the use of a wide variety of strategies. However, this survey will not provide information about specific new lessons, tools, strategies, or resources that teachers are implementing in their classrooms.

2) Logs – teachers can complete instructional logs tailored to the exact implementation requirements of each grant during the period of implementation specified by the grantee

3) Extant data –grantees can collect and analyze lesson plans, teacher reflection journals, and artifacts from action research projects to examine implementation.

4) Observation – several observation protocols are available to provide a framework for observation. Some resources have been used extensively in IMSP grants. There are other protocols available that are more generic or specialized that could complement the data collection (e.g., protocols specific to technology or inquiry). Grantees select an observation protocol that aligns with their specific program goals.

5) Interviews/Focus Groups – grantees may employ interviews or focus groups to supplement their understanding of teachers' implementation or barriers to implementation.

Grants collected implementation data locally and reported the percent of teachers implementing fully, mostly, about half, some, few or none of the content, instructional resources, strategies, and technologies according to pre-set grant goals.

At the site level, site evaluators summarized interview field notes and project artifacts in Program Profiles for each IMSP grant (see IMSP Profiles Supplemental Report). Principal Investigators for each grant reviewed the profiles and submitted clarifications and comments through an online member check survey (see Appendix C). Analyses of the partnerships focused on Partnership Composition, Organizational Structure, Action Plan and Operational Guidelines, Qualities of the Partnering Relationship, and Evaluation Implementation. Grant profiles and narrative survey responses were coded using MAXQDA 10 software. Statistical analyses were conducted using SPSS 18.

Qualities of the partnering relationship

To what extent is there a mutual need, trust, equality in decision-making, resource exchange, transparency, respect, representation, enthusiasm, and sustained understanding between partners and stakeholders across this IMSP grant? To what extent is leadership collaborative and transformational? Who are the leaders? Have the IMSP resources been sufficient to reach implementation goals?

Results for IMSP Implementation

In 2011-2012, the state-level evaluation efforts continued to focus on teacher and student outcomes for Workshop-Institute Program WIP-2 and WIP-3 grants that continued implementation. Master's programs were in a sustainability phase to document the work of the program. Site visits were completed in spring 2012 for the WIP-2 program (see Appendix C for protocol). Site evaluators summarized interview field notes and project artifacts in Program Profiles for each IMSP grant (see IMSP Profiles Supplemental Report). Principal Investigators for each grant reviewed the profiles and submitted clarifications and comments through an online survey as desired.

In addition to site visits, IMSP grantees submitted lists of teacher, school, industry, and higher education partners to complete satisfaction surveys (see Appendix B). The surveys asked for satisfaction ratings in terms of vision, leadership, communication, technical support, progress toward objectives, and sustainability.

Analyses of the partnerships focused on Partnership Composition, Organizational Structure, Action Plan and Operational Guidelines, Qualities of the Partnering Relationship, Progress toward Outcomes, Sustainability, and Evaluation Implementation. Grant profiles and narrative survey responses were coded using MAXQDA10 software. Statistical analyses were conducted using SPSS 18 and SAS.

Partnership profiles and Partner survey results were analyzed in terms of the characteristics associated with quality partnerships, including mutuality & trust, leadership, resources, and collaboration and mechanisms of communication.

Summary of Site Visits

Detailed profiles of grants in the implementation stages were developed based on interviews and review of extant data conducted by the state evaluation team. Based on these profiles, projects were described

in terms of the degree to which they were in the beginning, emerging, developing, or transformative stages.

The site visit tools include the site visit protocol and an analysis of artifacts that programs submit to support interview data (see Appendix B). Sites also submit for review IMSP membership list, IMSP/ IHE organizational charts, logic/change models, evaluation frameworks, evaluation data analysis plans, formal agreements or contracts in addition to the grant agreement, meeting agendas, meeting minutes, budget summary/narratives, newsletters, websites, and other forms or policy statements. Site evaluators analyze the data in formal profile reports that are reviewed by the local grantee (see Appendix C). In addition, the site evaluators' analyses and interview evidence are incorporated into the state level reports to triangulate with survey and achievement data.

The Site Visit Protocol includes questions about the partnership composition, organizational structure of the partnership, the action plan and operational guidelines, and the quality of the partnership. Partnership Composition is considered in terms of the degree to which IMSP staffing, collaboration between colleges, as well as the context for implementing the MSP shows effective coordination for achieving outcomes. Organizational Structure indicates the extent to which governance and decision-making bodies of the MSP were stable and effective. Action Plan & Operational Guidelines describe the nature of the program elements and the extent to which formal or informal agreements define, establish and support effective collaboration. Partnership Quality is represented as the degree that the IMSP partnership meets mutual needs. The level of trust, respect, and mutual accountability between partners, shared leadership between partners and sufficient resources to accomplish goals are also elements of partnership quality. The Performance and Outcomes elements added in 2009-2010 to the protocol to assess the participants' perspectives on the IMSP grant outcomes and capacity building for the partners were continued in 2010-2011. Sustainability profiles indicate the degree to which the grant partners have benefitted from the grant and their perceptions of the institutionalization and sustainability of the core grant elements. And finally, a profile of the Local Evaluation Implementation is provided based on interviews of site partners to describe the resources, methodology and lessons learned in the implementation of the evaluation framework. The interview data is triangulated with summaries of the support of state level surveys and completion of the state and federal data reporting requirements.

Based on the interview data, artifacts, and data provided to the state, site evaluators characterized the progress for each site annually in each of the partnership areas along a four-level heuristic:

•Beginning stages are represented by articulated plans but no actions. The element is "on the radar" but there is no substantive progress toward effective implementation. The quality of the plans is inconsistent. Outcomes are not possible because no plans have been put into action. Plans may not provide adequate foundation for full implementation.

•Emerging stages are represented by clear and articulated plans with some initial actions setting the stage for implementation, but not enough substantive activity to establish implementation. The quality of the articulated plan may be very strong or may have some apparent weaknesses amidst other

strengths. Outcomes are not imminent or predictable because high quality implementation has not reached a minimum threshold.

•Developing stages show clear, strong implementation is in place, although corrections for barriers, changes to plans, or consistency/satisfaction across stakeholders might be mixed. Positive outcomes are evident but all goals are not fully realized or not on track.

•Transformative stages show such a clear, strong enacted plan. It can be considered a model for others to use. Positive outcomes associated with the partnership seem inevitable or highly predictable.

In addition to the annual site results, Mrs. Debra Greaney, Dr. Tania Jarosewich, and Dr. Elizabeth Oyer produced a summary report of the last five years (*Illinois Mathematics and Science Partnership Site Visit Evaluation Report*).

Site Interview Evidence

The site evaluators prepared an annual site visit report for each site that reviewed and summarized the data collected and described each partnership element. The reports were submitted to the site for review and comment. Site comments were appended to the site profile.

The site evaluators analyzed each case study report to identify similarities and differences across cases and to develop conclusions about the case study questions (Stake, 2006). To ensure consistent coding across the sites, the evaluators engaged in an iterative analysis process, reviewing and discussing each round of coding to discuss initial findings and draw conclusions from data (see *Illinois Mathematics and Science Partnership Site Evaluation Report* 2012 for full discussion and longitudinal analyses of site evaluation data).

Partnership Definition

A key issue in analysis was the variation of IMSP partnership types. The key characteristic of partnerships for this project was that the entities worked towards a shared goal to produce a community benefit greater than could be achieved by any partner alone (Ayer et al., 2002; Scherer, 2007). In this conceptualization of a partnership, the level of partner benefits depends on the organizational structure and partner contributions. The majority of IMSP projects, although not all, met this definition of a true partnership. A set of projects housed at one IHE, three IMSP Master's degree projects, two WIP1, and one WIP 2 project not only met the definition of a partnership, but met the definition of an "umbrella partnership." Umbrella partnerships are characterized by longer-term relationships among organizations that plan, implement, and monitor multiple activities over time. These partnerships have built a framework that allows them to effectively work together to share information, air diverse viewpoints, generate fresh ideas, identify and solve problems, and work towards shared priorities. In strong umbrella partnerships, all partners have meaningful influence on decisions taken, and are committed to sustained engagement (Ayer et al., 2002).

This group of IMSP grants was formed by a university center for collaboration whose purpose is described as follows: "*Directed by a committee of university and community leaders, the Institute for*

Collaboration seeks to develop nationally replicable programs and models that enhance the well-being and academic achievement of local students" ("Institute for collaboration," 2012) The group's previous collaborative work in mathematics led to the creation of three Master's Degree Program IMSP projects, which in turn led to planning for additional WIP projects to meet ongoing Local Education Agency (LEA) needs. The leadership of this center was crucial in developing the IMSP projects and the success of those projects. The partnerships not only received WIP3 and WIP4 grants, but also secured funding and provided leadership for passing legislation that allowed for the formation of the first campus STEM partnership. These partnerships are referred to as the formal umbrella partnerships throughout this document.

Partnership Composition

How did the partnership composition evolve over the course of the grant?

Generally speaking, partnership composition was stable across the life of the grant with the exception of some staffing changes.

Partnership composition generally remained stable across the projects over time, and consistency in partners was the trend across the projects. Changes in organizational partners occurred in only a few partnerships. The majority of changes in team composition were related to project staffing and occurred in each project stage to varying degrees. Staff changes related either to new courses being taught by different faculty, or positions being added for teacher support.

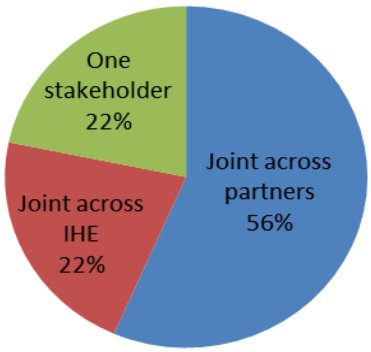
Organizational Structure

How did the organizational structure evolve over the course of the grant?

Organizational changes were reflected in a receding of participation for some partners during the implementation stages of the grant, particularly in the Master's Degree projects.

Partner roles generally remained stable across the projects, but the level of involvement of LEA partners decreased during implementation for the Master's Degree Program IMSP projects. The level of LEA engagement was particularly low in IMSPs in which teacher participants came from multiple districts. In these IMSPs, school districts were not strong partners. That is, LEAs did not participate in decision-making project goals, methods, and implementation. District administrators were informed of expectations, process, and anticipated outcomes, but they were not engaged in decision-making.

Figure 1. Planning Year Contributions to Decision Making



In each partnership, the original design of the organizational structure persisted throughout the

course of the projects.

Action Plan and Operational Guidelines

To what extent did the action plans and operational guidelines evolve over the course of the grant?

In general, IMSP projects' operations evolved very little over the course of the grant. Those with informal processes remained informal; those with well-defined formal processes continued those practices.

Over the course of the IMSP, few partnerships reported changes in partnership action plans and operational guidelines. The most collaboratively-developed projects had the most structured set of agreements in place for defining the partnership. The rest of the projects either had no agreements, or basic legal agreements that described payment of stipends or access to data.

Qualities of the Partnering Relationship and Maintaining the Partnership

How did the partnering relationships evolve over the course of the grant?

Mutual trust and need between partners remained strong throughout the grant, although LEA stakeholders tended to concede decision-making to the IHE and ROE lead partners for most grants.

Industry, LEA, and community partners significantly contributed to decision making during the IMSP planning phase during which time partners focused on needs assessments and program design. Involvement in decision-making by LEA partners decreased across most IMSP programs over the course of the implementation phase, with day-to-day management decisions resting with PIs by the final year of the grant.

Established leadership models did not change over the course of the grants. Changes in specific staff members were reported in several IMSPs, but the overall leadership structure did not change. In the majority of projects, PIs were considered to the leaders, while in the umbrella partnerships the PIs were seen as facilitators.

Communication was reported by the majority of projects to be timely and transparent. During the planning phase, meetings were often used to strengthen relationships and build programs. During the implementation phase, email was the main communication vehicle, but partners stressed the importance of face-to-face interaction and continued to meet as needed.

In the majority of IMSPs, partners reported mutual need, trust, and enthusiasm in their relationships across all years. The focus of the cross-college and cross-organization partnerships throughout the project was on supporting participating teachers and ensured that organizational issues did not affect teachers' experience with the project. Overall the partnerships with school districts were less well-developed than cross-college partnerships, although some IMSPs forged and maintained strong relationships with district partners. IMSPs that received WIP3 or WIP4 grants often continued to work with the same partners as in their original IMSP grant. This suggests that the partners were pleased with their roles in the projects and were willing to continue to engage with the work and with each other.

Survey Evidence

Partnership qualities are also evident from the partners each grant named to complete state partnership surveys. For the implementation phase of the IMSP, all MS Degree projects named higher education, 95% (n=6) named school partners, and 50% (n=3) named industry partners to complete state surveys (see Table 5). Most WIP-2 projects named IHE partners to participate in surveys (80%, n=8), 40% (n=4) named school partners, and 30% (n=3) named industry partners to participate in the state survey.

Table 5. Number of partners/participants named by grantees for State Implementation Phase Survey

Grant Model	Institution	Category	IHE	Industry	School	Teacher
MS Degree	Aurora	Biology	24	5	3	3
MS Degree	ISU	Elementary	25	1	4	0
MS Degree	NIU	Biology	26	1	8	0
MS Degree	DePaul	Secondary Math	25	2	10	0
MS Degree	Bradley	Environmental Science	15	4	12	7
MS Degree	SIU-C	Elementary	26	55	6	0
WIP-2	Aurora University	Elementary Math/Science	17	4	5	2
WIP-2	BHS ROE #28	7th - 12th grade Math/Science	30	19	6	2
WIP-2	ISU	Engaged STEM	20	0	0	0
WIP-2	ISU	Threatened Species, Threatened Environments	23	0	0	0
WIP-2	Lee/Ogle Counties ROE 47	5th - 9th NIMS - Rockford	39	1	2	1
WIP-2	Monroe-Randolph ROE 45	Elementary/MS Intel Math	52	5	2	0
WIP-2	NIU	MS/HS STEM	11	0	8	0
WIP-2	Rock Island ROE 49	NIMS 4th - 9th Physical/ Earth Science	41	0	5	0
WIP-2	SIU	Science Partnership for Improved Achievement in Science Through Computational Science	25	0	3	0
WIP-2	St. Clair ROE 50	Elementary/MS Sprouting STEMS	40	0	5	0

Table 6. Aggregated Survey Results 2011-2012 (Percent Agee or Strongly Agree/Satisfied or Highly Satisfied)

		Vision	Leadership	Communication	Technical Support
IHE	MS	86.4	72.2	80.6	85.3
	WIP-2	96.5	94.0	95.2	94.0
Industry	MS	*	*	*	*
	WIP-2	*	*	*	*
School	MS	90.1	97.7	95.5	100.0
	WIP-2	85.2	78.1	81.3	87.5
Teacher	MS	73.4	81.6	69.0	77.7
	WIP-2	91.7	90.5	88.1	92.2

*Low sample size

Trends in Survey Responses by Cohort

Survey data for IMSP programs are available for 2008-2009, 2009-2010, 2010-2011, and 2011-2012 (NOTE: 2007-2008 was a planning year without implementation with teacher or students for MS grantees. See Table 7). During these years, the response rate varied by year and by stakeholder group with 2011-2012 reflecting the lowest response rate (see Table 8). Interpretations of trends are in light of the reduced response by school participants in 2010-2011 and by all stakeholders in 2011-2012.

Table 7. IMSP Programs by Year

	Programs
2008-2009	MS
2009-2010	MS, WIP-1
2010-2011	MS, WIP-1, WIP-2
2011-2012	Partial MS, WIP-2

Table 8. Survey Response Rates by Year

	IHE		Industry		School		Teachers		Overall	
	Count	**Response Rate**	**Count**	**Response Rate**	**Count**	**Response Rate**	**Count**	**Response Rate**	**Count**	**Response Rate**
2008-2009	109	67%	30	64%	50	59%	479	74%	668	66%
2009-2010	135	85%	18	56%	65	88%	441	76%	659	76%
2010-2011	122	69%	37	69%	65	42%	599	62%	823	60%
2011-2012	39	49%	6	47%	19	25%	188	44%	252	42%

Survey responses for each cohort group are presented in **Figure 2**, **Figure 3**, **Figure 4**, and Figure 5. In addition, data across stakeholders for each year are presented in **Figure 6**, **Figure 7**, **Figure 8**, and Figure 9. Responses were generally similar within each cohort group across the different partnership areas.

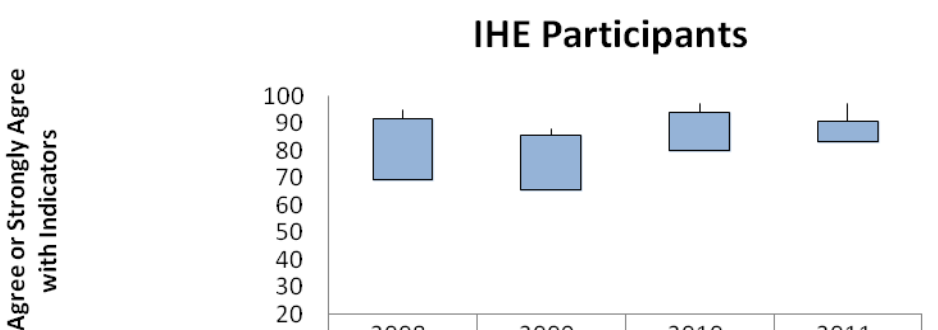
Vision, *Leadership*, and *Technical Support* elements of the partnerships were rated consistently the strongest across stakeholder groups and cohort years (see Figure 10). *Sustainability* indicators were consistently rated lower than other partnership elements across all years.

Agreement with partnership elements were very strong for responding IHE participants and most consistent in the 2008-2009 and 2009-2010 cohorts (see **Figure 2** and **Figure 6**). As with IHE participants, industry respondents were generally positive and consistent in their ratings within a year across the elements, with sustainability ratings noticeably lower (see **Figure 3**). The industry stakeholders were markedly less consistent than other stakeholder groups in 2008-2009 and 2009-2010 (see **Figure 8** and Figure 9). Counts for the 2011-2012 industry cohort are not interpreted due to small sample sizes.

School participants were more variable in their responses in 2009-2010 and 2011-2012 (although responses rates were lower for this stakeholder in 2011-2012; see **Figure 4**). In 2009-2010, the school participant ratings were generally lower than the other stakeholders (see **Figure 8**). In both of these years, sustainability ratings were noticeably lower than ratings in other partnership areas.

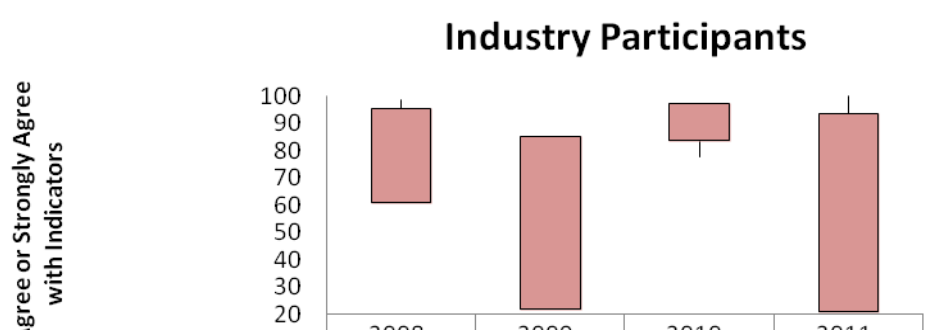
Finally, teacher cohort groups responded most consistently across the partnership areas for all of the grant years (Figure 5). Results in 2010-2011 reflect generally positive and consistent results within and between stakeholder groups across the partnership areas (see **Figure 7**).

Figure 2. IHE Participant Satisfaction by Year



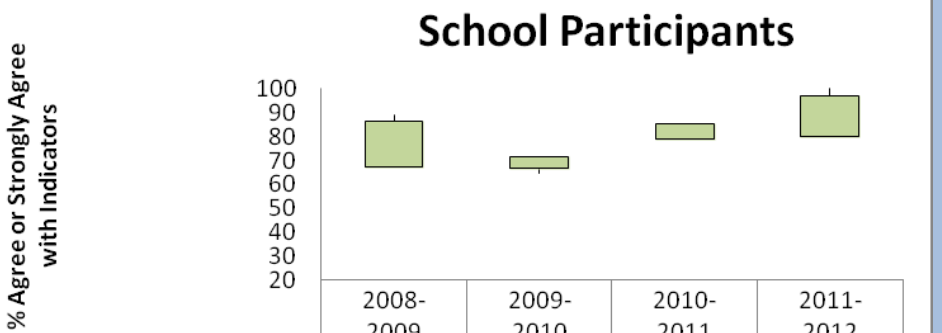
	2008-2009	2009-2010	2010-2011	2011-2012
Vision	92	85	94	91
Leadership	95	88	97	87
Communication	86	79	93	93
Technical Support	94	85	96	97
Progress toward Objectives	86	79	91	89
Sustainability	69	66	80	83

Figure 3. Industry Participant Satisfaction by Year



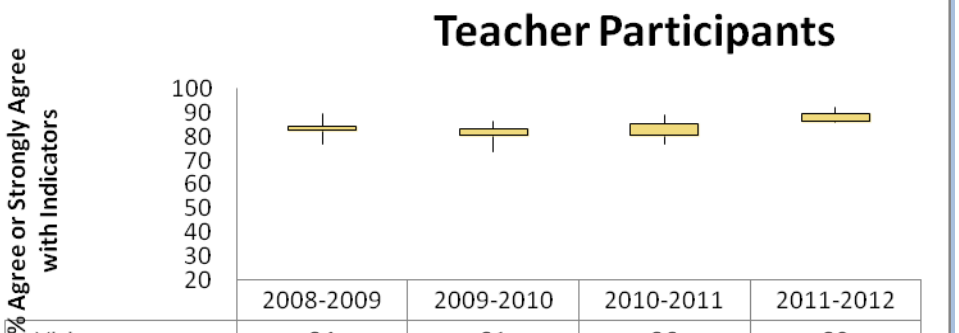
	2008-2009	2009-2010	2010-2011	2011-2012*
Vision	95	85	84	94
Leadership	98	81	83	100
Communication	84	72	78	66
Technical Support	99	78	87	70
Progress toward Objectives	75	77	84	66
Sustainability	61	22	97	21

Figure 4. School Participant Satisfaction by Year



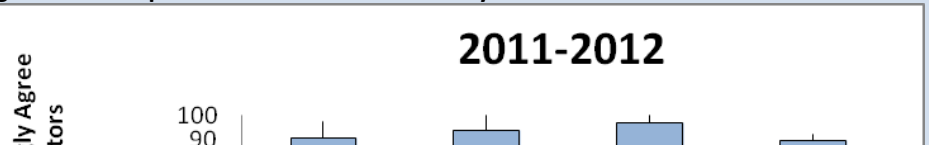
	2008-2009	2009-2010	2010-2011	2011-2012
Vision	86	71	85	97
Leadership	89	72	83	98
Communication	79	65	82	95
Technical Support	88	68	84	100
Progress toward Objectives	81	65	79	97
Sustainability	67	67	79	80

Figure 5. Teacher Participant Satisfaction by Year



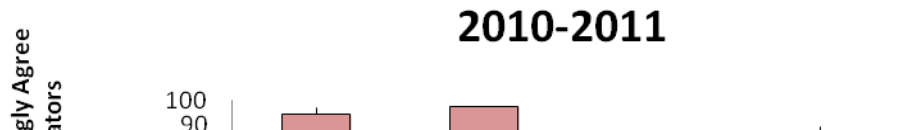
	2008-2009	2009-2010	2010-2011	2011-2012
Vision	84	81	86	89
Leadership	89	84	84	91
Communication	77	74	89	86
Technical Support	89	86	88	92
Progress toward Objectives	84	81	77	89
Sustainability	83	83	80	87

Figure 6. Participant Satisfaction 2011-2012 by Stakeholder



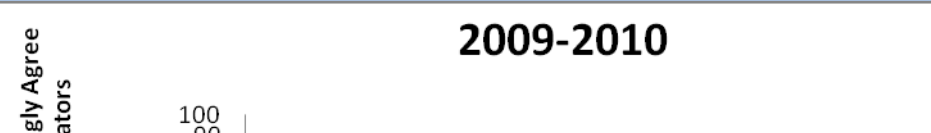
	IHE	Industry*	School	Teachers
Vision	91	94	97	89
Leadership	87	100	98	91
Communication	93	66	95	86
Technical Support	97	70	100	92
Progress toward Objectives	89	66	97	89
Sustainability	83	21	80	87

Figure 7. Participant Satisfaction 2010-2011 by Stakeholder



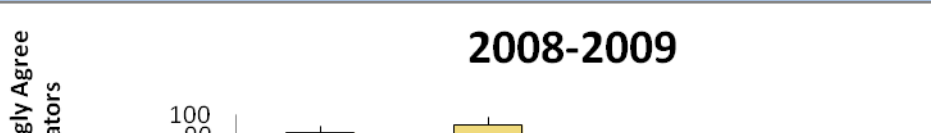
	IHE	Industry	School	Teachers
Vision	94	84	85	86
Leadership	97	83	83	84
Communication	93	78	82	89
Technical Support	96	87	84	88
Progress toward Objectives	91	84	79	77
Sustainability	80	97	79	80

Figure 8. Participant Satisfaction 2009-2010 by Stakeholder



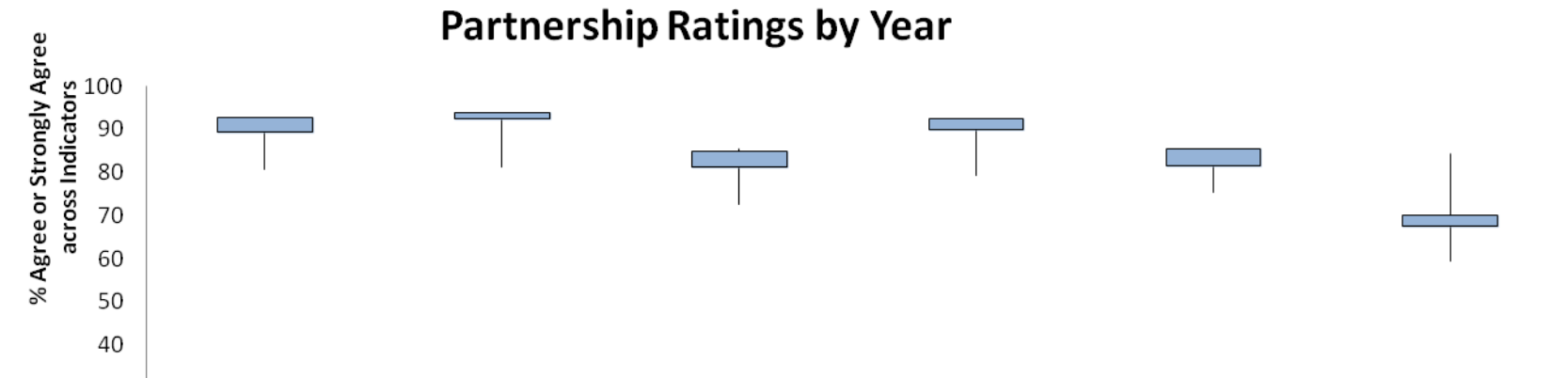
	IHE	Industry	School	Teachers
Vision	85	85	71	81
Leadership	88	81	72	84
Communication	79	72	65	74
Technical Support	85	78	68	86
Progress toward Objectives	79	77	65	81
Sustainability	66	22	67	83

Figure 9. Participant Satisfaction 2008-2009 by Stakeholder



	IHE	Industry	School	Teachers
Vision	92	95	86	84
Leadership	95	98	89	89
Communication	86	84	79	77
Technical Support	94	99	88	89
Progress toward Objectives	86	75	81	84
Sustainability	69	61	67	83

Figure 10. Participant Satisfaction by Partnership Element



	Vision	Leadership	Communication	Technical Support	Progress toward Objectives	Sustainability
2011-2012	93	94	85	90	85	68
2010-2011	87	87	86	89	83	84
2009-2010	81	81	72	79	75	59
2008-2009	90	93	81	93	81	70

Performance and Outcomes

What areas did the IMSP address most successfully?

Annual Meta Analysis Results

The teacher and student results from local evaluation data were synthesized using meta-analysis for 2011-2012. There were four phases of the meta-analyses process for the 22 projects.

Phase 1: Obtaining Project-Level Effect Sizes for Teacher and Student Outcomes

Projects submitted mean, standard deviation, correlation, n, and number of missing cases for teacher and student outcomes in addition to estimates of implementation, district demographics, teacher background, and levels of participation.

The specific formulas used in calculating the site level effect sizes, standard errors, and weights were selected based on the design of the studies. Six projects in the student data and four projects in the teacher data contained the pretest and posttest scores for both control and experimental groups. For this reason, these projects were treated as independent-groups pretest-posttest design. The remaining projects in the student and teacher data were not experimental designs and provided only the pretest and posttest scores for participants. Therefore, the analyses for these projects are based on a single-group pretest-posttest design.

1. Single-group pretest-posttest design (non-experimental)

The effect size estimates are obtained using Equation 4 of Morris and DeShon (2002):

$$d_{RM} = \frac{M_{D,E}}{SD_{D,E}} = \frac{M_{post,E} - M_{pre,E}}{SD_{D,E}}.$$

Here, $M_{D,E}$ is the sample mean change or the mean difference between pre- and posttest scores in the experimental group ($M_{pre,E}$ and $M_{post,E}$), and $SD_{D,E}$ represents the sample standard deviation of change scores. $SD_{D,E}$ was calculated as

$$SD_{D,E} = \sqrt{SD_{pre}^2 + SD_{post}^2 - 2 \times SD_{pre} \times SD_{post} \times \rho_{pre,post}},$$

where SD_{pre} and are SD_{post} sample standard deviations of the pre- and posttest scores, respectively, and $\rho_{pre,post}$ is the Pearson correlation between the pre- and posttest scores.

The sampling variance estimates are obtained using the first formula in Table 2 on page 117 of Morris & DeShon (2002):

$$Var(d_{RM}) = \left(\frac{1}{n}\right)\left(\frac{n-1}{n-3}\right)\left(1 + n\delta_{RM}^{2}\right) - \frac{\delta_{RM}^{2}}{[c(n-1)]^{2}}.$$

Here, *i* represents the number of paired observations in a single-group pretest-posttest design, δ_{RM} is the population effect size in the change-score metrics, and *c*(*df*) is the bias function defined as $c(df) = 1 - \frac{3}{4df - 1}$.

2. Independent-groups pretest-posttest design (experimental design)

For projects with control groups, the effect size estimates were obtained using Equation 6 of Morris and DeShon (2002):

$$d_{RM} = \frac{M_{D,E}}{SD_{D,E}} - \frac{M_{D,C}}{SD_{D,C}}.$$

Here, $M_{D,E}$ is the sample mean change or the mean difference between pre- and posttest scores in the experimental group ($M_{pre,E}$ and $M_{post,E}$), and $SD_{D,E}$ represents the sample standard deviation of change scores, which has the same meaning and was calculated in the same way as the $SD_{D,E}$ in the single group design; $M_{D,C}$ is the sample mean change or the mean difference between pre- and posttest scores in the control group, and $SD_{D,C}$ represents the sample standard deviation of change scores. $SD_{D,C}$ is calculated in the same way as $SD_{D,E}$ except that the standard deviation and correlation information obtained from the control group are used.

The sampling variance estimates are obtained using the last formula in Table 2 of Morris and DeShon (2002):

$$Var(d_{RM}) = \left[\frac{1}{2(1-\rho)\tilde{n}}\right]\left(\frac{N-2}{N-4}\right)\left[1 + 2(1-\rho)\tilde{n}\delta_{RM}^{2}\right] - \frac{\delta_{RM}^{2}}{\left[c(N-2)\right]^{2}}.$$

In this formula, δ_{RM} is the population effect size in the change-score metrics, $c(df)$ is the bias function defined as $c(df) = 1 - \frac{3}{4df - 1}$, ρ is the Pearson correlation between pretest and posttest, $\tilde{n} = (n_E * n_C)/(n_E + n_C)$, and N is the combined number of observations from both groups (i.e., $n_E + n_C$). The standard errors of the site level effect size estimates and the weights are calculated based on these estimates.

Due to missing data, the numbers of pre- and posttest observations were not the same. To obtain an estimate of the number of paired observations, *n*, in the single-group pretest-posttest design needed in

computing the necessary statistics, the harmonic mean of the pretest and posttest sample sizes (i.e., n_{pre} and n_{post}) was obtained. The harmonic mean was used because it is more conservative compared to the arithmetic mean and the geometric mean, but not as conservative as the using the minimum between n_{pre} and n_{post} .

Phase 2: Obtaining Overall Effect Sizes for Content Knowledge

1. Data Preparation

1) Some grant projects contain multiple observations. To obtain a single measure of the effect size for each grant project, the multiple observations were combined to arrive at a single score. The combined effect size is the weighted average across the multiple effect sizes. That is,

$$\bar{d} = \frac{\sum_{i=1}^{n} d_i w_i}{\sum_{i=1}^{n} w_i}.$$

A total of 22 combined project effect sizes were created for the teacher data. In addition to the weighted effect sizes, the within project variances were also computed for each project using the following formula:

$$\sigma^2_{within} = \frac{1}{\sum_{i=1}^{n} 1/\sigma_i^2} + \frac{\sum_{i}^{n} w_i (d_i - \bar{d})^2}{\sum_{i}^{n} w_i},$$

where n is the number of observations within one project, σ_i^2 is the sampling variance, w_i is the weight, d_i is the effect size of the i^{th} observation, $\bar{d}$ is the weighted effect size across the observations within one project. The multi-level analyses were based on the combined teacher data. The two covariates of interest for the teacher data, “content” (mathematics, science or technology) and “type” (graduate, workshop/institute), were dummy coded.

2) Using the same method, observations for students (adjusted) were also combined by project. There were 20 observations for student analyses. The combined effect size for one project was excluded as an outlier in the analyses due to its extremely large value.

2. Dependency Relationship Between Variables

1) The association between the effect size and type was investigated. The models used:

$$d_{weighted} = \mu + Type + \varepsilon$$

For the teacher data, the results showed that the “type” (graduate, workshop/institute) had no association with the effect size (p=0.48). The same model was also applied to the student data. The

analyses show that there was also no significant association between the effect size and the grant type (p=0.62).

2) To investigate whether the effect size can be explained by some covariate variables other than the population mean, a multiple regression analysis was conducted.

Dependent Variables:

The subject-specific effect sizes for student and teacher data were used as dependent variables.

Independent Variables:

For the student data, the following four implementation fidelity variables were considered: percent of teachers fully implementing content, resources, strategies, and technology tools as defined by the goals of the individual projects.

In addition, three school level variables were considered as moderating variables (averaged across participants within a grant): average school level poverty across participants, average percent of students meeting or exceeding state math and science tests.

For the teacher data, three variables were analyzed as moderator variables at the grant level: percent of teachers with a Science Endorsement, Math Endorsement, and STEM-related Endorsement.

The stepwise method was used to identify the subset of independent variables with the strongest relationship to the dependent variable. Based on this analysis, only one regression models was built using the selected significant predictors.

teacher effect size = 0.03*%ScienceEndorsement + Error

The significance test supports the percentage of teacher participants with at least one endorsement in science as a significant predictor of the teacher effect size.

Table 9. Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	13.02	6.51	9.34	0.0015
Error	19	13.24	0.69		
Uncorrected Total	21	26.26			

Table 10. Parameter Estimates

Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Science Endorsement	Science	1	0.027	0.007	4.18	0.0005

3. Independent-groups pretest-posttest design (experimental)

An ANOVA analysis was conducted for projects that involved the control and experimental group pretest and posttest design. The dependent variable was the effect sizes of the observations in these two grant projects and the independent variable was the "group" (experimental, control). The mean effect size of the experimental group is higher than the mean effect size of the control group for both teacher (1.131 vs. 0.298) and student data (0.666 vs. 0.581). The F test indicated that the differences between groups were not statistically significant.

Table 11. Statistical summary of the Experiment and Control group effect sizes

	Group	Sample Size	Mean	Std Dev	Minimum	Maximum
Teacher	Control	7	0.298	0.469	-0.346	0.887
	Experimental	7	1.131	1.113	-0.342	2.519
Student	Control	14	0.581	0.822	-0.529	2.114
	Experimental	35	0.666	1.306	-1.341	5.634

Table 12. ANOVA analysis for control-experimental group using the teacher data

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	2.325	2.325	3.10	0.1037
Error	12	9.002	0.750		
Corrected Total	13	11.327			

Table 13. ANOVA analysis for control-experimental group using the student data

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	0.072	0.072	0.05	0.8220
Error	47	66.752	1.420		
Corrected Total	48	66.825			

Phase 3 Multi-Level Meta-Analyses

1. Multi-level Meta-analysis Model

To test for the predictors of effect size magnitude, multi-level meta-analysis models are used. Multi-level models are appropriate because the current set of studies is considered a random sample from a larger population of studies. That is, each study-specific effect is sampled from the larger population of effects. Therefore, the effects have two sources of variability: variability due to the effect parameters, and the sampling variability of the observations. The multi-level model used is

$$Y = \mu + \gamma + e$$

where Y is the weighted effect size, μ is the average population effect, γ is the random effect, which is assumed to have a normal distribution with a mean of zero and a common variance parameter τ. For this model, τ measures the between-study variation (in this analysis, it actually measures the between-project variation), whereas e measures the within-study variation, which is the project-specific chance error.

This model was used to conduct the multi-level analysis for the teacher data and student data. For both data sets, we assessed the average IMSP effect and the amount of variability among these projects. In other words, we estimated the parameters μ and τ (see Table 15).

Table 14. Multi-level Meta-Analyses for the Teacher and Student Data 2011-2012

	Model	Estimated Average Effect Size	Standard Error	p-value
Teacher Data	Overall (n=22)	1.34	0.11	0.0001
	GRAD (n=5)	1.66	0.19	0.0001
	WIP (n=17)	1.25	0.16	0.0001
Student Data	Overall (n=19)	0.90	0.08	0.0001
	GRAD (n=4)	0.78	0.17	0.0001
	WIP (n=15)	0.93	0.12	0.0001

For the teacher data, the results based on the Multi-level analyses showed that the estimated average overall IMSP effect ($\hat{\mu}$) across 22 projects is 1.34, with standard error 0.11. It was significantly different from zero (p=0.0001). The between-study variance was 0.61 (not shown in the table) and it was larger than the average within-study variance (0.50, also not shown in the table). This supports the existence of a between-study variation. Therefore, the mixed-effect model was preferable to the fixed-effect model (the model used for investigating association between the effect size, content and type) for the current study. The MS degree program projects and workshop projects had positive effect sizes, and were very close to each other. The effect size of the MS degree program was larger than that of the workshop projects in magnitude, but their difference was not statistically significant (Note: The 95%

confidence interval of MS program effect size was (1.29, 2.03) and that of workshop/institute was (0.94, 1.56).

For the student data, the results based on the multi-level model showed that the estimated average overall IMSP effect across 19 projects is 0.90, with standard error 0.08. It was significantly different from zero (p=0.0001). The between-study variance was 0.30 (not shown) and it was close to the average within-study variance (0.27, also not shown). The workshop projects had a larger effect size than the MS degree projects. However, the gap between different project types was not statistically significant.

Phase 4 Interpretations and Implications

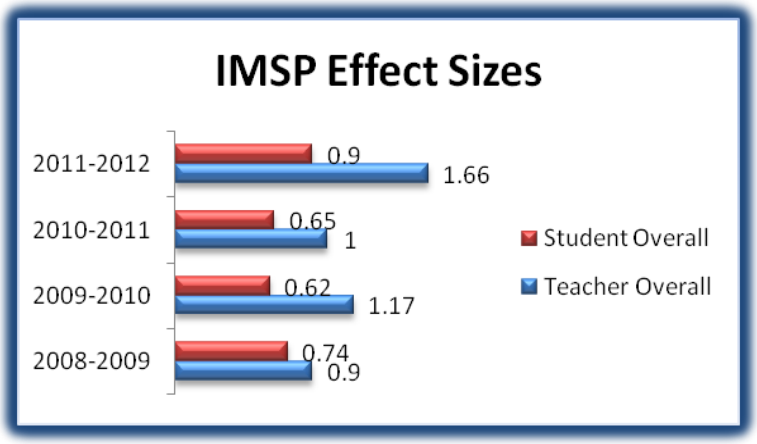
In this evaluation report, multi-level meta-analysis was conducted to measure the average effect size and the total variation across projects. Meta-analysis has often been restricted to estimating (fixed) covariates effects based on fixed-effects linear models. However, in this analysis, non-negligible between-study (or between-project) variation was observed. Therefore, a random-effect component was incorporated into the model to conceptualize the current set of projects under consideration as a random sample from a population of projects.

In the analysis for 2011-2012, different mixed-effect models were considered and compared. The models included only the average effect size because these models fit the data better than those with background variables. The estimated effect sizes were significantly positive for all the models tested. This means that IMSP activities improve both the teacher and student performance in all the subject domains. The type of the IMSP program, Master's degree program or Workshop Institute program, were not different in impact on the improvement for the teachers and students.

Four Year Trends in Impact

Longitudinal analyses were not conducted for the annual meta-analyses because of concerns about missing data patterns. Descriptive trends show non-zero, positive effects each year of the grant (see Figure 11). Effect sizes vary each year, although sample sizes also vary each year.

Figure 11. IMSP Effect Sizes by Year



Annual results indicated observed differences between type (MS degree versus Workshop/Institute) or content area (when applicable) were also not statistically significant. While no inferential comparisons can be made across years, descriptively the IMSP consistently showed evidence of strong positive impact on both teachers and students (see Table 15).

Table 15. Multi-level Meta-Analyses for the Teacher and Student Data Annual Trends

	IMSP Effect Sizes			
	2008-2009 (*n*)	2009-2010 (*n*)	2010-2011 (*n*)	2011-2012 (*n*)
Teacher Overall	0.9 (*28*)	1.17 (*51*)	1.00 (*39*)	1.66 (*22*)
Teacher MS Degree	0.9 (*14*)	1.04 (*25*)	.84 (*19*)	1.66 (*5*)
Teacher WIP	0.91 (*9*)	1.09 (*16*)	1.13 (*20*)	1.25 (17)
Teacher Math	0.68 (*13*)	1.05 (*21*)	.78 (*24*)	***
Teacher Science	1.19 (*12*)	1.24 (*30*)	1.29 (*15*)	***
Student Overall	0.74* (*7*)	0.62 (*34*)	.64 (*36*)	.90 (*19*)
Student MS Degree	0.74* (*7*)	0.48 (*23*)	.61 (*19*)	.78 (*4*)
Student WIP	N/A**	0.76 (*11*)	.69 (*17*)	.93 (*15*)
Student Math	N/A***	0.5 (*19*)	.63 (*19*)	***
Student Science	N/A***	0.68 (*15*)	.68 (*17*)	***

***All student data was MS Degree Data**

****No classroom implementation for this year**

*****Sample Size did not allow for disaggregation**

Site Interview Results

In site interviews, **Performance & Outcomes** were judged for evidence of major outcomes or benefits for institutions, schools, or community in capacity, knowledge, or knowledge dissemination and the extent to which the IMSP has pursued major strategies originally planned, there has been positive performance of the collaboration between partners, or the capacity of the IMSP has increased. **Evaluation Implementation** indicates the degree to which evaluation activities provided data needed to fulfill state and federal reporting requirements.

Site Profile Performance and Outcomes

What were partners' perceptions of how the IMSPs' performance and observable outcomes evolved over the course of the grant?

Partners reported capacity-building outcomes across institutions (IHE, ROE, LEA) as well as at the individual participant levels (PIs, Teachers) in attitudes as well as content knowledge and practices. There was less consistent evidence described regarding student-level impact.

IMSP project staff reported increased capacity and knowledge and changed attitudes and behavior among partners. Partners strengthened relationships and universities and ROEs gained insight into teacher needs and effective methods for professional development and instruction for graduate and preservice mathematics and science teachers. University and ROE partners also strengthened their focus on supporting STEM education. Several IMSPs, primarily WIP grantees, increased their focus on monitoring the extent to which teachers implemented course content in their instruction, developing and implementing classroom observation procedures to better support teachers in their classrooms.

The programs reported that teachers increased knowledge, skills, leadership, and professional interaction with science and mathematics content. Partnerships that monitored classroom implementation of instructional strategies stated that teacher participants changed their instructional practices to be more inquiry based and integrative.

Successes reported by LEA partners include support for classroom implementation, improved instruction among teacher participants, teachers taking leadership roles, and teacher access to effective materials. Teachers received materials and were able to use them for effective mathematics and science instruction.

Through their action research, teachers learned the value of examining student work to inform instruction. They improved their ability to use data for decision-making and to systematically examine student participation and outcomes. Teachers increased their professional networks, participated in national and statewide conferences, and were viewed by peers as leaders in mathematics and science instruction. All programs reported that teacher participant content and pedagogical knowledge, leadership and technology skills, confidence and enthusiasm increased.

WIP programs worked to improve effective participant recruitment, sequencing of courses, alignment of course content with Illinois state and common core standards, teacher implementation of strategies learned in the courses, and fully engaging participants in the follow-up activities.

The implementation of course content to instruction was particularly challenging for teachers who had low content knowledge in math or science, lack of familiarity with technology that could facilitate stronger integration, and lack of comfort with collaborative and hands-on work. Although a concern for the Master's Degree projects, these skill deficits were particularly challenging for the WIP grants, which had only two weeks to address these teacher needs. It was also challenging for instructors to provide sufficiently differentiated instruction to meet all participants' needs. Teachers struggled with the action research requirement, but extra support was provided to assist them in that process. Also, some

teachers continued to struggle in some areas of content knowledge and requested additional support outside of the coursework.

Although the majority of grants were able to access student and teacher content knowledge data, the site visit interview participants often stated that they wished that their data and evaluation systems were more efficient and streamlined to allow for the collection of necessary and meaningful student and teacher data.

Site Profile Sustainability

What evidence did partners present over the course of the grant about the extent to which the university-community-school IMSP partnership would be sustained in the future?

Universally grant stakeholders and participants considered the benefits to outweigh the costs. Long term structural changes to sustain the IMSP program goals and vision were inconsistently established. The participating LEAs (at the district level) seemed to change the least to support future implementation.

Partners identified a number of factors that they believe would influence the sustainability of the IMSP programs and partnerships, including obstacles to sustainability and conditions that would support program continuation.

The overall costs to the universities, ROEs, school districts, and other partners to participate in the IMSP were generally minimal, with school district and teacher participants having the lowest costs. However, LEA partners were not present to speak about school benefits in a number of site visits. Programs that had collaborative team structures with strong partner involvement had more equally distributed benefits. Programs in which decision-making and leadership rested more with the IHE or ROE staff reported greater benefits to teachers than IHE partners. All site visit participants agreed that the benefits partners enjoyed outweighed the costs of participating in the project.

Over the course of the program, partners began to create conditions that they believed would support sustainability, including strengthening relationships, creating new STEM education programs, and

continuing to emphasize STEM education at local LEAs. The participants stated that one indicator of sustainability was the change in teachers' instructional practices, skills, leadership roles, and knowledge; and the technology and materials that teachers received to use in their classrooms.

Programs that had strong, collaborative partnerships were able to seek and obtain funding for continuing and expanding programs. This finding correlated with previous research findings that strong, reciprocal partnerships are more likely to succeed than weaker partnerships (Vidal et al., 2002). Vidal et al. (2002) also indicate that colleges and universities can support grant-funded programs through outreach and consistent support that in order to attract longer-term investments and commitments to university outreach work and to developing and maintaining partnerships. Several institutions provided IMSPs the ability to obtain additional funding and secure their future.

An examination of the data indicates that by definition, the newly-developed graduate degree programs were institutionalized and could be offered again by the institution. Institutionalization was also evident at the classroom level but less established at the district level of LEA partners.

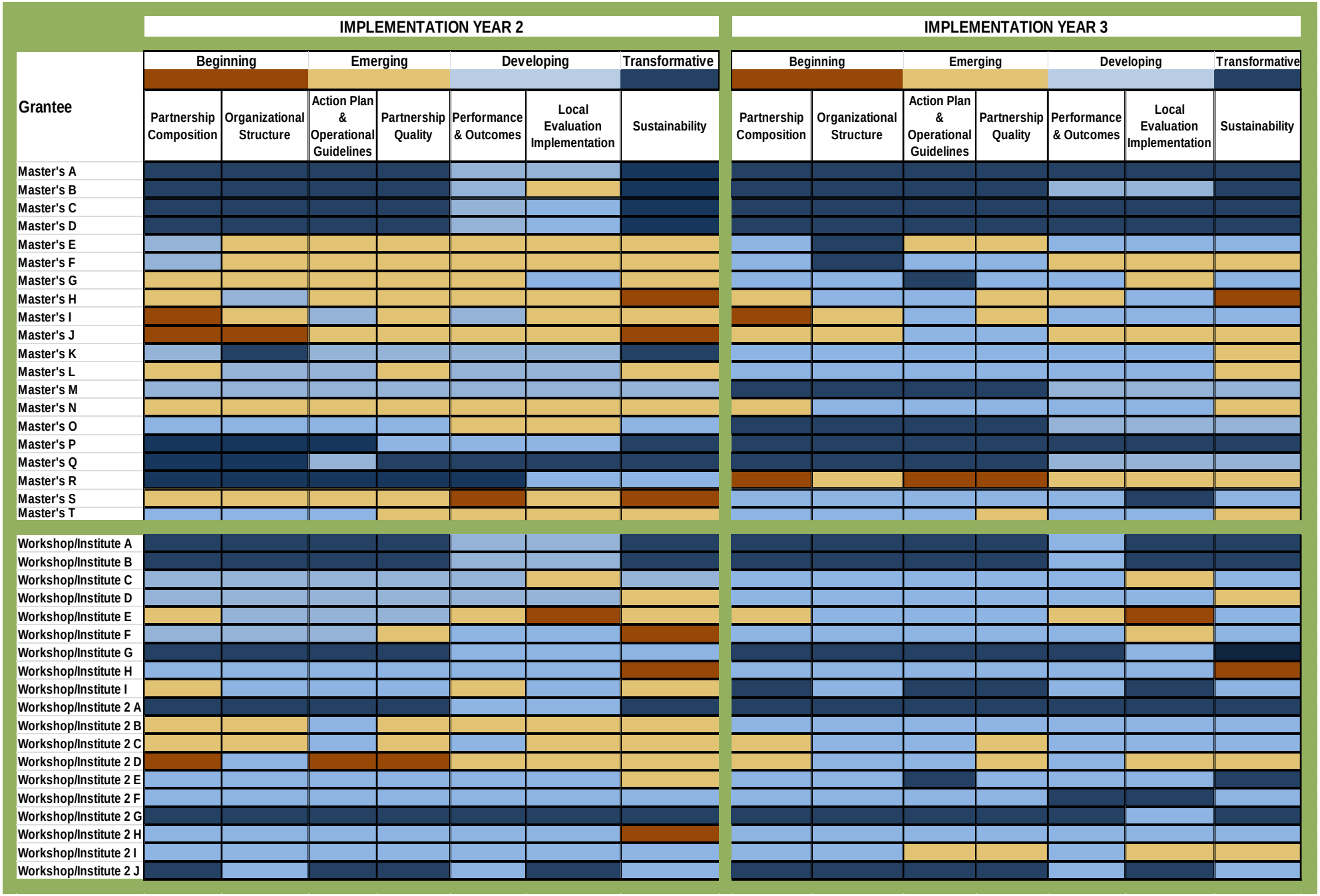
" I think at least maybe to the best of my judgment, it's very difficult to sustain a program the way it was, or it is at the moment, because once the funds run out it has to change. So one way, a good way to think about sustainability is what's next, rather than, how this is going to continue? I think that's a part of what we have been trying to do. So with the STEM Center, if that comes to life, that's definitely to me the sustainability. The WIP 2 will end for sure, and there's no more funding, but it can reincarnate there will be something else, and line up all those people and expertise that was put together for this program and line them up for the next one, is going to make this sustained. We'll have to think of it that way because it's more realistic to sustain programs that way than to just say it's going to continue with no money. Well no. It's not going to." (WIP Project PI).

Levels of IMSP Implementation

The evaluation of the IMSP projects across multiple years provided an opportunity to examine IMSP organizational support and processes to inform future change efforts in Illinois. In addition to a description of each partnership element, the site evaluators also rated partnership qualities across a four-category heuristic that was included in the annual project profile reviewed through the member checking process The framework described the development of the project across seven dimensions (Partnership Composition, Organizational Structure, Action Plan & Operational Guidelines, Partnership Quality Performance & Outcomes, Local Evaluation Implementation, and Sustainability).

Trends in development for individual IMSP projects, separated by Master's Degree and WIP project models, are presented as a heat map in for implementation years two and three (the culminating years of implementation for Master's and WIP grants). Most grants moved from beginning and emerging states to developing and transformative over the implementation years in at multiple areas of their project. As indicated in other analyses, the final profiles of development were similar for both WIP and Master's Degree projects.

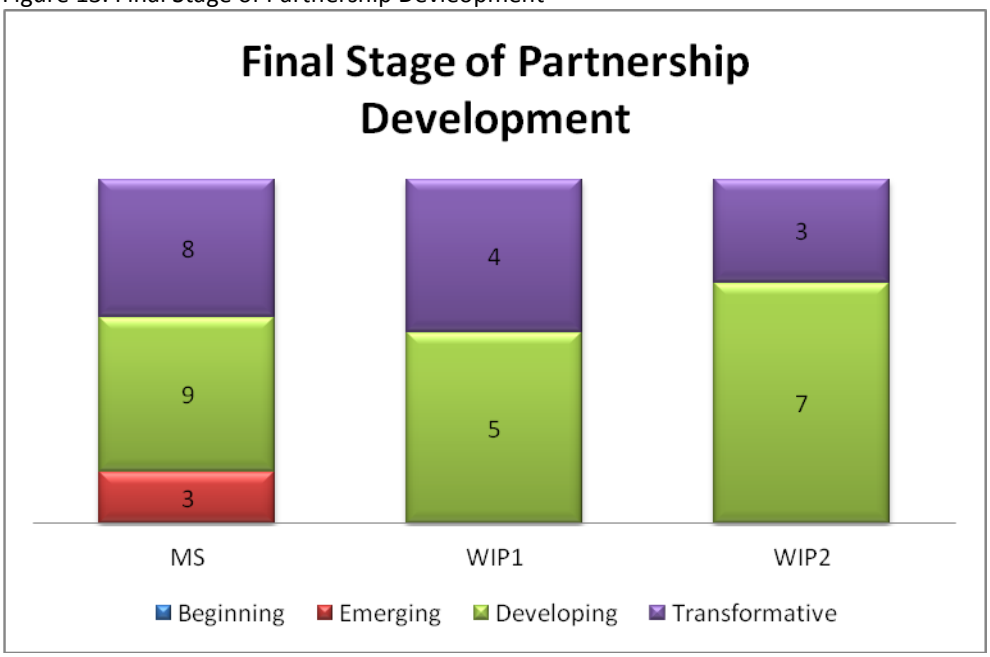
Figure 12. Implementation Heat Map



Overall, partnership composition did not change over the course of the grant period. IMSPs worked with the partners that they had identified in their planning phase or in their project proposal. The organizational structure of the partnerships also generally remained the same, with the PI most often identified as the leader of the project, with partner input affecting decisions. In several cases, leadership responsibilities were distributed among partners.

Growth was evident in IMSPs' action plans and partnership quality, particularly from the first year of ratings to the second. A greater percentage of projects received a rating in the transformative category in the final year of grant implementation, suggesting improved action planning and partnership quality over the course of the grant period (see Figure 13).

Figure 13. Final Stage of Partnership Devleopment



Improvements in action plans were generally related to greater clarity and confidence among the IMSPs about their course of action once they began to offer courses or implement workshops. Few IMSPs made significant changes to their intended programs. Few had formal agreements but those that did, reported few changes to those agreements over the course of the project. The IMSPs projects provided needed professional development, graduate level course work, and materials across a large geographic area of Illinois, impacting multiple LEAs, teacher participants, and classroom students.

In what areas did the IMSP address least consistently?

All partnerships identified an LEA partner although fewer identified industry partners. The quality of the partnerships varied, with some IMSPs building stronger relationships within their university structure and with their LEA and industry partners. However, over the course of the evaluation, the variability in LEA involvement in the IMSP projects was apparent. Although all projects listed at least one LEA as a partner, in approximately one-half of the IMSPs LEA representatives were not present in person or by telephone for site visits. In the majority of these cases the PIs were frank about the lack of genuine engagement and partnership of the university or ROE with the LEA, indicating that the relationship between the IMSP and school district was one of course provider and course consumer.

In several cases only the PI was present to respond to a protocol on partnership. In these instances the only perceptions in areas such as school conditions and partnership qualities came from the PI and MSP staff. The lack of participation from outside partners was noted in annual reports by the site evaluators and considered in the overall site visit profiles. In order to minimize the effect of the lack of LEA engagement in site visits, site evaluators triangulated interview data with site visit data and monitored consistency of information collected at these sites over time. Negative evidence was reviewed in cases where teacher participants were present and able to discuss the impact of the IMSP on their work and on the district in which they worked in order to weigh the final trends presented in this report.

Conclusions and Discussion

Impact

Many site visit participants identified a number of outcomes from the IMSP projects, most significantly improved teacher content knowledge and instructional practices, stronger relationships among partners, and sustaining partnerships after the conclusion of the original IMSP grant funding. In contrast, to most of the IMSPs, some programs reported challenges related to logistics, teacher knowledge and implementation, partner relationships, and evaluation. These challenges were addressed through stronger recruitment efforts, better needs assessments for teacher participants, improved evaluation measures, and focusing partner attention to the evaluation requirements and partner responsibilities for collecting and reporting data.

All of the IMSPs delivered the courses and workshops indicated in their IMSP proposals and offered needed professional development to area teachers. However, rarely did the IMSPs significantly impact the partner organizations. The umbrella partnerships were examples of strong and effective partnerships in which mutual organizational needs were met and caused an evolution in the organization and structure of future work between the organizations. Other IMSPs were also able to leverage their IMSP work into new projects or in continued efforts through subsequent IMSP funding or funding from other sources. In these cases, the partners viewed their work together as effective and valuable enough to continue their work together as a partnership. However, in a number of projects, the relationships between IHEs and ROEs could not be considered to be true partnerships. In these cases, the project provided professional development and districts recruited teachers to the newly developed master's degree programs or to the professional development workshops. Although teachers benefitted by participating, the district and IHE or ROE did not work together to ensure that the impact of the work was more widespread or had an institutional impact.

An overall benefit for the ISBE is how the state level evaluation of the outcomes from the IMSP Master's Degree and WIP projects informed program development for two new rounds of WIP grants, WIP3 and WIP4 in Illinois. The lessons learned about the effectiveness of the two IMSP models and the importance of full engagement among partners (especially industry and LEA partners) to achieve widespread goals influenced the definition of the latest MSP programs. Ultimately, the IMSP project provided training for teachers, practice in building and managing partnerships among Illinois stakeholders working toward STEM education, and encouraged more genuine and impactful partnerships across the state.

Sustainability

Survey respondents across partner groups as well as teacher participants were generally positive about the sustainability of IMSP practices, although this area was noticeably lower than other areas rated.

Sustainability indicators were consistently rated lower than other partnership elements across all years and across all participant types. In interviews, analyses indicated that by definition, the newly-developed graduate degree programs were institutionalized and could be offered again by the institution. Institutionalization was also evident at the classroom level but less established at the district level of LEA partners. This is consistent with other evidence suggesting that strong cooperative relationships were established but transformative cohesive partnerships were not achieved systematically.

Future Work

Ayer et al remind us that that not all relationships between universities and communities are usefully understood as “partnerships.” Just as simple economic transactions produce benefits to the parties, but are not partnerships, classroom situations in which teachers only provide instruction (and the university confers course credits) and students only learn (and pay tuition) are not partnerships either (Ayer et al 2002).

Ultimately, the evaluation of these grants did not support the superiority of a particular structure for professional development (graduate program verses workshop) for accomplishing IMSP goals. Individual grant leaders, partners, and participants achieved goals for creating transformative partnership and achieving teacher and student outcomes. However, both models supported the production and implementation of rigorous professional development programming. Both models produced positive impacts on teachers and students. However, variability between grant recipients in quality of partnership and impact was evident in both models.

As the IMSP program evolves, lessons learned from these state level evaluations can inform the program design. Specifically, lessons about supporting the development of quality programming, the implementation of rigorous evaluation frameworks, and promoting partnerships beyond cooperative relationships to established sustainability can inform future ISBE policy for MSP grants.

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Appendix A

IMSP Logic Model

Program Logic Model
Meta-Analyses to Examine the Effectiveness of Illinois Math Science Partnerships
Developed by Elizabeth Oyer for the Illinois Evaluation Research Coordination

Inputs	Partnership Strategies / Activities	Prerequisite Outcomes	Intermediate Outcomes	Long Term Outcomes
Resources	*CCSSO Outcome A* *High Quality, Rigorous PD*	*CCSSO Outcomes B & C* *Changes in Teacher Content Knowledge, Instructional Practice and Curriculum*	*Rigorous, High Quality Math & Science Programs*	*CCSSO Outcome D & E* *Student Ach, Sustained Administrative Support Systems*
Federal $$ State $$ K-12 In-Kind $$ Support Community Matching $$ <u>Partners</u> State Agencies Local K-12 Agencies Institutions of Higher Ed STEM Professional Organizations STEM Industry	Incentive programs for new teachers as well as in-service teachers; Needs Assessment	Recruiting Programs targeting under-represented groups	Increased Pool of Highly Qualified Math & Science Teachers -Increased % of elementary & secondary school teachers with academic majors or minors or group majors or minors, in math/eng/or the sciences	•Increased student ach in Math/Science •Increased enroll. in advanced Math/Science courses •Increased part. in AP/IB prog. for Math /Science (as applicable) •Increased enroll/matriculation in STEM post-sec. programs (as applicable) •Increased student confidence
	•Needs Assessment •High Quality/Rigorous –Workshops/Institutes –Graduate Degrees/Endorsements –Distance Learning Programs –Training Teachers to Train Others •Partnerships between STEM professionals and teachers	Sustainable high quality graduate and endorsement programs producing teachers with increased subject matter knowledge in Math/Science		
	•Needs Assessments •Instruction on using data, Curricula selection, technology use, critical use of research, questioning	Teachers with improved teaching skills in Math/Science		
	•Mentoring by experienced teachers •Upgrading status of math/science teaching •Vision of math/science career as lifelong learning	Teachers with higher job satisfaction in K-12 school settings		
	Needs assessment, Curriculum alignment, articulation locally and with Institutes of Higher Education	Curricula that has scientific, research basis	Improved K-12 Math & Science Curriculum	•IHEs committed to sustained program support •LEA Admin. support and sustained collaborative decision-making with participating teachers
		Appropriate integration of technology		
		Object-, experiment-, or problem-based learning activities		
		Rigorous state & local standards aligned with post-secondary standards for STEM majors		

Appendix B

Data Dictionaries

	Teacher Background Variables
Teacher_ID	This ID should be used consistently in all data submitted.
Undergrad_degree	Report the undergraduate degree held by each teacher.
Undergraduate_degree_granting_school	Report the institution awarding the teacher his/her undergraduate degree.
Undergrad_degree_major	Report the undergraduate major for which the undergraduate degree was awarded for each teacher.
Undergrad_degree_year	Report the year the teacher was awarded his/her undergraduate degree in the "yyyy" format.
Credits_completed	Report the number of graduate credits completed for the IMSP program through June 30, 2011. For Workshop/Institute programs, insert "999" code.
GPA	Report the average GPA for all graduate courses completed for the IMSP program through June 30, 2011. For Workshop/Institute programs, insert "999" code.
GPA_Range	Report the possible range for the GPA. Report the lowest value and highest value separated by a comma. For example, for a 4 point scale, enter "0.0, 4.0" in this field. For Workshop/Institute programs, insert "999" code.
Current_Educator_Certification_Level	Enter the code for the current Educator Certification based on the Illinois three-tiered certification system as of June 30, 2011. (Initial, Standard, Master, Not Certified)
Current_endorsements	Enter the code for the current teacher endorsements assigned before June 30, 2011. Separate multiple endorsements with a comma.
Baseline_HQS	Enter the code for the current Educator Highly Qualified Status as of June 30, 2011in the core area of your Master's Degree Program. For Workshop/Institute grantees, enter the status as of June 30, 2011 in the core area of your PD focus.

	Teacher Background Variables
Curr_HQS	Enter the code for the current Educator Highly Qualified Status as of June 30, 2009 in the core area of your Master's Degree Program. For Workshop/Institute grantees, enter the Not Applicable "9" code.
Current_Assigned_Grade_Level	Enter the code for the assigned grade level for the 2010-2011 academic year for the content area your grant targets. Separate multiple grade level assignments with a comma.
Current_Core_Content_Area	Enter the code for the assigned core content area for the 2010-2011 academic year. Separate multiple codes with a comma if applicable.
Years_current_content_Assigned	Enter the number of years teacher has held the current content area assignment as of June 30, 2011. Round to nearest whole number.
School_%_White	Report the % of students based on school report card (About students tab - Race/Ethnicity). Round to nearest whole number. For Workshop/Institute programs, insert "999" code.
School_%_Black	Report the % of students based on school report card (About students tab - Race/Ethnicity). Round to nearest whole number. For Workshop/Institute programs, insert "999" code.
School_%_Hispanic	Report the % of students based on school report card (About students tab - Race/Ethnicity). Round to nearest whole number. For Workshop/Institute programs, insert "999" code.
School_%_Asian	Report the % of students based on school report card (About students tab - Race/Ethnicity). Round to nearest whole number. For Workshop/Institute programs, insert "999" code.
School_%_NativeAmerican	Report the % of students based on school report card (About students tab - Race/Ethnicity). Round to nearest whole number. For Workshop/Institute programs, insert "999" code.
School_%_Multiracial	Report the % of students based on school report card (About students tab - Race/Ethnicity). Round to nearest whole number. For Workshop/Institute programs, insert "999" code.

	Teacher Background Variables
School_%_mobility	Report the % of students based on school report card (About students tab - Educational Environment). Round to nearest whole number. For Workshop/Institute programs, insert "999" code.
School_%_poverty	Report the % of students based on school report card (About students tab - Educational Environment). Round to nearest whole number. For Workshop/Institute programs, insert "999" code.
School_Type	Enter the code for the class organization for the teaching assignment for the 2010-2011 academic year. (Regular elementary/secondary; Special Program emphasis/magnet/charter; Special Education; Career/Technical/Vocational; Alternative/Other
Class_organization	Enter the code for the class organization for the teaching assignment for the 2010-2011 academic year. Separate classifications with a comma. (Traditional grades; Academic disciplines; Looping; Multi-age; Block; Other)

	Professional Development Quality
PD Quality	Report the average percent (whole number) of teacher-participant course ratings that were classified as very low quality, low quality, average quality, high quality, very high quality for Course Design, Content, and Instructional Materials. Report the average across ALL courses through June 30, 2011. For the Workshop/Institute Program, report the average across all Professional Development activities through September 30, 2011.
PD Hours	Provide the Average (Mean, Median, Standard Deviation, N) hours of PD outside IMSP in STEM - (if not available in SEC data). If you have submitted SEC data that has this information, enter the Not Applicable Code 999 in this space. You must confirm these data will be reported for your teachers. Round data to .000 (thousandths) as appropriate.

	Teacher Content Knowledge
Report on the pretest mean for your teachers for 2010-2011. For the Workshop/Institute Program, report the pretest mean for Summer Workshop I.	
Test	Test name
Grade_level	Enter the code for the grade level for the data you are reporting. If you have teachers from multiple grade levels taking the same test, enter "0" for this field and then specify the actual grade levels for all teachers for each test in your narrative.
Pretest_Mean	Report the mean of your local teacher content test for 2010-2011 or Summer Workshop I. Report the means separately for each test given.
Pretest_SD	Report the standard deviation of your local teacher content test for 2010-2011 or Summer Workshop I. Report the standard deviations separately for each test given.
Pretest_Range_Low	Report the lowest value possible on your local teacher content test for 2010-2011 or Summer Workshop I. Report separately for each test given.
Pretest_Range_High	Report the highest value possible on your local teacher content test for 2010-2011 or Summer Workshop I. Report separately for each test given.
Pretest_N	Report the N of all teachers used to calculate the pretest mean your local teacher content test for 2010-2011 or Summer Workshop I. Report the sample sizes separately for each test given.
Pretest_Missing	Report the N of missing teacher data for the pretest mean your local teacher content test for 2010-2011 or Summer Workshop I. Report the missing data separately for each test given.
Report on the posttest mean for your teachers for 2010-2011. For the Workshop/Institute Program, report the pretest mean for Summer Workshop I.	
Posttest_Mean	Report the mean of your local teacher content test for 2010-2011 or Summer Workshop I. Report the means separately for each test given.
Posttest_SD	Report the standard deviation of your local teacher content test for 2010-2011 **or Summer Workshop I**. Report the standard deviations separately for each test given.

	Teacher Content Knowledge
Posttest_Range_Low	Report the lowest value possible on your local teacher content test for 2010-2011 or Summer Workshop I. Report separately for each test given.
Posttest_Range_High	Report the highest value possible on your local teacher content test for 2010-2011 or Summer Workshop I. Report separately for each test given.
Posttest_N	Report the N of all teachers used to calculate the posttest mean for your local teacher content test for 2010-2011 or Summer Workshop I. Report the sample sizes separately for each test given.
Posttest_Missing	Report the N of missing teacher data for the posttest mean for your local teacher content test 2010-2011 or Summer Workshop I. Report the missing data separately for each test given.
Pearson	Calculate the Pearson correlation coefficient between Pre and Posttest for each teacher test separately for your grant.
Pretest_reliability	Provide the reliability coefficient for each Pretest.
Posttest_reliability	Provide the reliability coefficient for each Posttest.

	Student Demographic Information
Report on the students with a SIS Demographic Race Indicator=05.	
White%	Report the % of your teachers' students only for 2010-2011. Round to nearest whole number.
WhiteN	Report the N of students for 2010-2011.
Report on the students with a SIS Demographic Race Indicator=03.	
Black%	Report the % of your teachers' students only for 2010-2011. Round to nearest whole number.
BlackN	Report the N of students for 2010-2011.
Report on the students with a SIS Demographic Race Indicator=04.	
Hispanic%	Report the % of your teachers' students only for 2010-2011. Round to nearest whole number.
HispanicN	Report the N of students for 2010-2011.
Report on the students with a SIS Demographic Race Indicator=02.	
Asian%	Report the % of your teachers' students only for 2010-2011. Round to nearest whole number.
AsianN	Report the N of students for 2010-2011.
Report on the students with a SIS Demographic Race Indicator=01.	
NativeAm%	Report the % of your teachers' students only for 2010-2011. Round to nearest whole number.
NativeAmN	Report the N of students for 2010-2011.
Report on the students with a SIS Demographic Race Indicator=06.	
Multiracial%	Report the % of your teachers' students only for 2010-2011. Round to nearest whole number.
MultiracialN	Report the N of students for 2010-2011.
Report on the students with a SIS Demographic Race Indicator Missing.	
Race_Missing%	Report the % of your teachers' students only for 2010-2011. Round to nearest whole number.
Race_MissingN	Report the N of students for 2010-2011.
Report on the students with a SIS Demographic FRL/Low Income Indicator=1.	
Low_Income%	Report the % of your teachers' students only for 2010-2011. Round to nearest whole number.
LowIncomeN	Report the N of students for 2010-2011.
Report on the students with a SIS Demographic Income Indicator Missing.	
Income_Missing%	Report the % of your teachers' students only for 2010-2011. Round to nearest whole number.
Income_MissingN	Report the N of students for 2010-2011.
Report on the students with a SIS Demographic Migrant (Mobility) Indicator=1.	

Mobility%	Report the % of your teachers' students only for 2010-2011. Round to nearest whole number.
MobilityN	Report the N of students for 2010-2011.
Report on the students with a SIS Demographic Migrant (Mobility) Indicator Missing.	
Mobility_Missing%	Report the % of your teachers' students only for 2010-2011. Round to nearest whole number.
Mobility_MissingN	Report the N of students for 2010-2011.
Report on the total students used to calculate percents for race, income, and mobility. You should use the same number of students to calculate % in for all demographics in this report.	
TotalN	Report the N of all students used to calculate % for student demographics for 2010-2011.

	Student Content Knowledge
Report on the pretest mean for your teachers' students for 2010-2011 by grade level and total.	
Test	Test name
Grade_level	Enter the code for the grade level for the data you are reporting.
Pretest_Mean	Report the mean of your local student content test for 2010-2011 for each grade level tested.
Pretest_SD	Report the standard deviation of your local student content test for 2010-2011 for each grade level tested.
Pretest_Range_Low	Report the lowest value possible on your local student content test for 2010-2011 or Summer Workshop I. Report separately for each test given.
Pretest_Range_High	Report the highest value possible on your local student content test for 2010-2011 or Summer Workshop I. Report separately for each test given.
Pretest_N	Report the N of all students used to calculate the pretest mean your local student content test for 2010-2011 for each grade level tested.
Pretest_Missing	Report the N of missing student data for the pretest mean your local student content test for 2010-2011 for each grade level tested.
Report on the posttest mean for your teachers' students for 2010-2011.	
Posttest_Mean	Report the mean of your local student content test for 2010-2011 for each grade level tested.
Posttest_SD	Report the standard deviation of your local student content test for 2010-2011 for each grade level tested.
Posttest_Range_Low	Report the lowest value possible on your local student content test for 2010-2011 or Summer Workshop I. Report separately for each test given.
Posttest_Range_High	Report the highest value possible on your local student content test for 2010-2011 or Summer Workshop I. Report separately for each test given.
Posttest_N	Report the N of all students used to calculate the pretest mean your local student content test for 2010-2011 for each grade level tested.
Posttest_Missing	Report the N of missing student data for the pretest mean your local student content test for 2010-2011 for each grade level tested.

	Student Content Knowledge
Student_Pearson	Calculate the Pearson correlation coefficent between Pre and Posttest for each grade level.
Pretest_reliability	Provide the reliability coefficient for each Pretest.
Posttest_reliability	Provide the reliability coefficient for each Posttest.

Appendix C

IMSP Protocols and Survey Instruments

Site Visit Evaluation Framework			
Partnership Process	**Focus**	**Analysis Question**	**Data Source**
1) Partnership Composition	Size and diversity of partnership decision-makers and stakeholders	Who are the partners across Illinois MSP grants? How diverse are the stakeholders in positions of power? What are the contributions of the partners? What is the geographic dispersion of the partnership?	Interview and Site Visit Protocols
2) Organizational Structure	MSPs will categorize their organizational structure based on HUD's Office of University Partnerships (HUD, 2002, pp. 5.20-5.22).	How are the IMSPs organized? Where is the IMSP located? Who are the decision-makers?	Artifact Analyses Interview and Site Visit Protocols
3) Action Plan and Operational Guidelines	Review of the IMSP program and articulation of formal commitments and understandings between all partners.	What is the scale of the IMSP project? What formal agreements are in place to define, establish, and support communication and collaboration between partners?	Artifact Analyses Interview and Site Visit Protocols

Site Visit Evaluation Framework			
Partnership Process	**Focus**	**Analysis Question**	**Data Source**
4) Qualities of the Partnering Relationship and Maintaining the Partnership	Characteristics are associated with quality partnerships: • Mutuality & trust • Leadership • Resources • Collaboration and mechanisms of communication.	To what extent is there a mutual need, trust, equality in decision-making, resource exchange, transparency, respect, representation, enthusiasm, and sustained understanding between partners and stakeholders across MSP grants? To what extent is leadership collaborative and transformational?	Artifact Analyses Interview and Site Visit Protocols Interview and Site Partner Satisfaction Survey (Adapted from Wolf, 2003).

Protocol for Implementation Phase

1. Partnership Composition.

History: What is the history of the university in the community or with the partners? Did the university (or parts of it) have experience with or a record of engagement in community outreach, community service or applied research in the past? [Were these efforts coordinated? Was there a pre-existing partnership/program within the University that preceded the IMSP? If so, what role does that office have on the work of the IMSP? What is the relation between the IMSP and the program? Is there a University unit that oversees the work of this center? What was the relationship between the university and the community partners in the IMSP prior to the ISBE application?]

> For collaboration between colleges within IHE: What was the relationship among the colleges prior to the IMSP? Were their prior relationships with each other similar or different? In what way?

Process. What was the process for creating the IMSP? [How did the IMSP partners develop the application to ISBE? Did community or school partners contribute to the application, review the draft, etc.? How did the IMSP partners refine the partnership relationships after receiving the grant? Are there any groups that should have been included that were not part of the IMSP?]

> For collaboration between colleges within IHE: Did both/all schools participate in developing the IMSP proposal? How were the roles defined? How were responsibilities assigned?

Staffing. How is the IMSP staffed? [Have new staff been hired to conduct the work of the IMSP? What positions were filled? Where did the candidates come from? How many staff members work (will work) for the IMSP? What policies are in place for the replacement of staff as needed?]

> For collaboration between colleges within IHE: Are IMSP staff drawn from both/all institutions? Are faculty and students from both/all institutions involved in IMSP?

Context. What is the school environment for IMSP reform? [What are the major educational initiatives in the city/region/state? How has the IMSP related to these efforts? Can the IMSP have improved coordination with other programs to achieve greater outcomes? Are there resources for and attention to these issues? What is the context for university funding? What other programs are competing for university resources and attention?]

> For collaboration between colleges within IHE: How does the institutional context for the IMSP differ among the schools?

2. Organizational Structure of Partnership.

Structure. What is the structure of this IMSP? Does the IMSP have an advisory board(s) and what is its role? Is there a sense of equity among the partners? [Who are the board members and what are their respective affiliations? What is the governance of the IMSP? How are decisions made? By whom? Are community / school perspectives valued and respected? What are the roles of the university, community/ school in the IMSP? To what degree have university-community/school relationships constituted a partnership? (Not at all, somewhat, to a moderate degree, to a great degree)]

> For collaboration between colleges within IHE: What are the respective roles of the colleges in the IMSP? Do all schools participate equally in governance and decision-making? How is accountability by each school to the partnership determined? How are imbalances in institutional resources compensated for? Is the IMSP seen as an opportunity for faculty and student collaboration among the schools, or as individual efforts under a single banner?

Location within the University. Is there a specific space designated for the IMSP within the university? What parts of the university are involved with the IMSP? What structures, policies and/or practices of the university support community outreach or hinder outreach activities? [Where is the IMSP physically housed? What was the rationale for its placement? Is the IMSP embraced by the leadership of the university? If so, how?]

> For collaboration between colleges within IHE: Where is the IMSP located in the consortium? Why?

Artifacts: IMSP Membership list, IMSP/ IHE organizational chart

3. Action Plan and Operational Guidelines

IMSP Program Areas. What is the nature of the IMSP program and how ambitious is it? [What program areas does the IMSP address? What is the scope and sequence of the new program?]

> For collaboration between colleges within IHE: Are program areas divided by schools? If so how? Or do the schools work jointly on the same project areas?

Operational Guidelines. What formal agreements are in place to define, establish, and support communication and collaboration between partners? Who established these guidelines?

Artifacts: Logic Model, Evaluation Framework, Data Analysis Plans, IBHE proposal

4. Quality of Partnerships

Mutuality & Trust. Do the goals and objectives of the IMSP address mutual needs across partners? What are the perceptions of trust across partners? Is there a sense of safety for sharing of information and resources? What steps have partners taken to build trust? What is the nature of most interactions between partners? Face-to-face? Email? What was the nature of relationships between partners before the IMSP? How respectful is the IMSP to differences in cultural and organizational norms, values, and beliefs? How transparent are the IMSP operations? Is their equality in decision-making? Is there reciprocal accountability? Is there a balance in the representation of all partners in the IMSP? Does leadership across partners work closely together? Is there enthusiasm surrounding IMSP goals and activities?

> For collaboration between colleges within IHE: What is the nature of relationships between colleges? Is there a sense of equality in decision-making and resources? Is there a respect for differences in cultures? Is there shared enthusiasm for the IMSP?

Artifacts: Meeting agendas, minutes

Leadership. Who are the leaders of the IMSP? [Who led the development of the IMSP application? Are there one or more persons taking leadership? What is their role in the institution? What is their continuing role in the IMSP? Was there participation from the top levels of the institution?]

> For collaboration between colleges within IHE: Is leadership for the IMSP shared among the colleges? Is there a key person at each school leading the IMSP? Is there participation from top levels at both/all schools?

Resources. Has the IMSP received matching funds? [From what sources? How does this compare with the initial proposal? Are there adequate resources to accomplish IMSP goals? Are resources sufficient for all partners?] limited not just to financial resources but extending to managerial and technical skills, contacts, information and the like;

> For collaboration between colleges within IHE: How will resources be divided among the institutions? Did all/both schools provide matching funds?

Artifacts: Budget summary/narrative

Communication. What are the guiding principles for your IMSP? Is there shared decision-making between partners? What are the primary vehicles for communication? Is there a formal management and communication plan? How are conflicts resolved in the partnership?

Artifacts: Meeting agendas, meeting minutes, newsletters, websites, other forms/policy statements

IMSP Teacher Satisfaction Survey[1]

(This Survey Omitted for Year One Planning Phase)

Please indicate your level of satisfaction with each aspect of your MSP participation.
(Likert scale: Very Satisfied – Very Dissatisfied)

Vision and Mutuality

1. Clarity of the vision for IMSP goals and objectives
2. Planning process used to prepare the IMSP objectives
3. Follow-through on IMSP activities
4. Efforts to promote collaborative action with other educators
5. Efforts to promote collaborative action with STEM professionals outside the university
6. Processes used to assess teachers' needs
7. Processes used to assess my students' needs
8. Participation of influential people in the IMSP that represent teachers' interests
9. Diversity of partners and participants
10. Respect, acceptance and recognition of my contributions to reaching the IMSP goals
11. Resources provided by my district and/or school to support my commitment to the IMSP grant

Leadership

12. Strength and competence of IMSP leadership
13. Sensitivity to cultural issues
14. Opportunities for me to take leadership roles
15. Trust that partners and participants afford each other

Communication

16. Use of the media to promote awareness of the IMSP goals, actions, and accomplishments
17. Communication among members of the partnership
18. Communication between the IMSP and the broader community
19. Extent to which IMSP participants are listened to and heard
20. Working relationships established with school officials
21. Information provided on issues and available resources

Comments:

Technical Assistance:

22. Strength and competence of IMSP faculty and staff
23. Training and technical assistance provided by faculty and staff
24. Help given the participants in meeting IMSP requirements
25. Help given the participants to become better able to address and resolve their concerns

[1] Adapted from Annual Satisfaction Survey for Community Coalitions. Wolff,T (2003).. A practical approach to evaluating coalitions. In T.Backer(Ed.) Evaluating Community Collaborations. Springer Publishing

Progress and Outcomes:

26. My progress in learning new content through the IMSP grant.
27. My progress in using new instructional resources through the IMSP grant.
28. My progress in using new STEM technologies through the IMSP grant.
29. My progress toward meeting endorsement or certification requirements.
30. My access to STEM industry experts through the IMSP grant.
31. My access to mentors because of the IMSP grant.
32. Fairness with which resources and opportunities are distributed
33. Capacity of IMSP teachers to give support to each other
34. IMSP grant's contribution to improving science and/or mathematics instruction in my school.

Please indicate how much you agree or disagree with the following statements.
(Likert scale: Strongly Agree – Strongly Disagree)

Job Satisfaction

35. In most ways, being a STEM teacher is close to my ideal.
36. My conditions of being a STEM teacher are excellent.
37. I am satisfied with being a STEM teacher.
38. So far I have gotten the important things I want to be a STEM teacher.
39. If I could choose my career over, I would change almost nothing.

Sustainability

40. I received important professional benefits from my participation in the IMSP.
41. The benefits I received were worth the time, effort, and cost I invested in the IMSP.
42. The benefits I received were commensurate with the contributions I made to the IMSP.
43. I strongly believe the IMSP should be continued.
44. I will participate fully in IMSP activities in the future.
45. The IMSP activities need to be dramatically improved to make it worth my investment.
46. I will continue to integrate IMSP strategies and materials into my classroom instruction.
47. I have access to the resources I need to continue to integrate IMSP strategies and materials into my classroom instruction.
48. My district will support my continued integration of IMSP strategies and materials into my classroom instruction.

IMSP School Partner Satisfaction Survey[2]

Please indicate your level of satisfaction with each aspect of your IMSP partnership.
(Likert scale: Very Satisfied – Very Dissatisfied)

Vision and Mutuality

1. Clarity of the vision for the IMSP goals and objectives
2. Planning process used to prepare the IMSP objectives
3. Follow-through on IMSP activities
4. Efforts to promote collaborative action
5. Efforts to promote collaborative action between STEM professionals and teachers
6. Processes used to assess teachers' needs
7. Processes used to assess students' needs
8. Participation of influential people in the IMSP that represent a variety of interests
9. Diversity of partners and participants
10. Respect, acceptance and recognition of my contributions to reaching the IMSP goals
11. Resources provided by the partner districts and/or school to support the IMSP grant

Leadership

12. Strength and competence of IMSP leadership
13. Sensitivity to cultural issues
14. Opportunities for me to take a leadership role
15. Trust that partners and participants afford each other
16. Transparency of decision-making.

Communication

17. Use of the media to promote awareness of the IMSP goals, actions, and accomplishments
18. Communication among members of the partnership
19. Communication between the IMSP and the broader community
20. Extent to which IMSP participants are listened to and heard
21. Working relationships established with school officials
22. Information provided on issues and available resources

[2] Adapted from Annual Satisfaction Survey for Community Coalitions. Wolff,T. (2003). A practical approach to evaluating coalitions. In T.Backer(Ed.) Evaluating Community Collaborations. Springer Publishing

Technical Assistance:

23. Strength and competence of IMSP faculty and staff
24. Training and technical assistance provided by faculty and staff
25. Help given the participants in meeting IMSP requirements
26. Help given the participants to become better able to address and resolve their concerns

Progress and Outcomes:

27. Progress in improving teachers' content knowledge through the IMSP grant
28. Progress in teachers' access and use of new instructional resources through the IMSP grant
29. Progress in teachers' access and use of new STEM technologies through the IMSP grant
30. Teachers' progress toward meeting endorsement or certification requirements
31. Effective collaboration between STEM industry experts and teachers' through the IMSP grant
32. Teachers' access to mentors through the IMSP grant
33. Fairness with which resources and opportunities are distributed
34. Capacity of IMSP teachers to give support to each other
35. IMSP grant's contribution to improving science and/or mathematics instruction in schools

Please indicate how much you agree or disagree with the following statements.
(Likert scale: Strongly Agree – Strongly Disagree)
Sustainability:

36. My district received important professional benefits from participation in the IMSP.
37. The benefits my district received were worth the time, effort, and cost invested in the IMSP.
38. The benefits my district received were commensurate with the contributions made to the IMSP.
39. I strongly believe the IMSP should be continued.
40. I will participate fully in IMSP activities in the future.
41. The IMSP activities need to be dramatically improved to make it worth my district's investment.
42. The composition of the IMSP needs to be expanded or changed to be more effective.
43. My district has changed the structure, policies, or functions to institutionalize the IMSP goals and activities.
44. My district intends to sustain IMSP activities after the expiration of grant funds.
45. My district is actively seeking alternative funds to sustain IMSP activities after the expiration of grant funds.

IMSP Industry Partner Satisfaction Survey[3]

Please indicate your level of satisfaction with each aspect of your IMSP partnership. (Likert scale: Very Satisfied – Very Dissatisfied)

Vision and Mutuality:

1. Clarity of the vision for the IMSP goals and objectives
2. Planning process used to prepare the IMSP objectives
3. Follow-through on IMSP activities
4. Efforts to promote collaborative action between partners
5. Efforts to promote collaborative action between STEM professionals and teachers
6. Participation of influential people in the IMSP that represent a variety of interests
7. Diversity of partners and participants
8. Respect, acceptance and recognition of my contributions to reaching the IMSP goals
9. Resources provided by the partner organizations to support the IMSP grant

Leadership:

10. Strength and competence of IMSP leadership
11. Sensitivity to cultural issues
12. Opportunities for me to take a leadership role
13. Trust that partners and participants afford each other
14. Transparency of decision-making.

Communication:

15. Use of the media to promote awareness of the IMSP goals, actions, and accomplishments
16. Communication among members of the partnership
17. Communication between the IMSP and the broader community
18. Extent to which IMSP participants are listened to and heard
19. Working relationships established with school officials
20. Information provided on issues and available resources

Technical Assistance:

21. Strength and competence of IMSP faculty and staff
22. Training and technical assistance provided by faculty and staff

[3] Adapted from Annual Satisfaction Survey for Community Coalitions. Wolff,T. (2003). A practical approach to evaluating coalitions. In T.Backer(Ed.) Evaluating Community Collaborations. Springer Publishing

23. Help given the participants in meeting IMSP requirements
24. Help given the participants to become better able to address and resolve their concerns

Progress and Outcomes:

25. Progress in improving teachers' content knowledge through the IMSP grant
26. Progress in teachers' access and use of new instructional resources through the IMSP grant
27. Progress in teachers' access and use of new STEM technologies through the IMSP grant
28. Teachers' progress toward meeting endorsement or certification requirements
29. Effective collaboration between STEM industry experts and teachers' through the IMSP grant
30. Teachers' access to mentors through the IMSP grant
31. Fairness with which resources and opportunities are distributed
32. Capacity of IMSP teachers to give support to each other
33. IMSP grant's contribution to improving science and/or mathematics instruction in schools

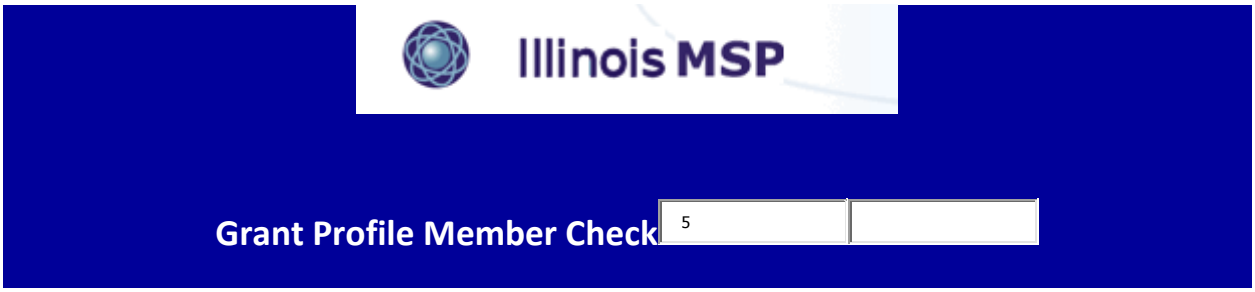
Please indicate how much you agree or disagree with the following statements.
(Likert scale: Strongly Agree – Strongly Disagree)

Sustainability:

34. My organization received important professional benefits from participation in the IMSP.
35. The benefits my organization received were worth the time, effort, and cost invested in the IMSP.
36. The benefits my organization received were commensurate with the contributions made to the IMSP.
37. I strongly believe the IMSP should be continued.
38. I will participate fully in IMSP activities in the future.
39. The IMSP activities need to be dramatically improved to make it worth my organization's investment.
40. The composition of the IMSP needs to be expanded or changed to be more effective.
41. My organization has changed the structure, policies, or functions to institutionalize the IMSP goals and activities.
42. My organization intends to sustain IMSP activities after the expiration of grant funds.
43. My organization is actively seeking alternative funds to sustain IMSP activities after the expiration of grant funds.

Appendix D

Member Check Survey



Each grant has been sent a .pdf representing the profile written by your state site evaluator focusing on four specific areas: Partnership Composition, Organizational Structure, Action Plan and Operational Guidelines, and Qualities of the Partnering Relationship.

The profiles across all grants will be analyzed to report on trends across the state in terms of the funded IMSP partnerships. Individual profiles will be submitted to the ISBE in an Appendix as part of yearend report. A redacted version will be submitted as needed using pseudonyms for partners as indicated by individual grants. The redacted version will be disseminated as appropriate at the discretion of the ISBE.

The purpose of this survey is to provide grantees an opportunity to clarify or provide alternative perspectives on the profiles being submitted to the ISBE in the year-end report. If you are comfortable with the content of the profile as written by the site evaluator, no response is needed. All responses submitted on this form will be appended to your site evaluator profile unedited.

Comments about your IMSP **Partnership Composition** profile summary:

Comments about your IMSP **Organizational Structure** profile summary:

Comments about your IMSP **Action Plan and Operational Guidelines** profile summary:

Comments about your IMSP Qualities of the **Partnering Relationships** profile summary:

Identification in redacted report:	Yes	No
Would you like the redacted report to use a pseudonym for university partners?	○	○
Would you like the redacted report to use a pseudonym for school partners?	○	○
Would you like the redacted report to use a pseudonym for industry partners?	○	○

Appendix E

Partner Descriptive Survey Results

Table 16. Aggregated Survey Responses - IHE

IHE	MS							WIP-1							WIP-2						
	Not Sure, Dis, or Very Dissat	Satisor Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satisor Very Satis	Not Appl	Valid Total	Grand Total	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid Total	Grand Total	Missing	Valid %
Clarity of the vision for the IMSP goals and objectives	2	64	1	67	66	0	97	1	19	0	20	20	0	95	0	6	0	6	6	0	100
Planning process used to prepare the IMSP objectives	2	62	3	67	64	0	97	1	17	2	20	20	0	85	0	6	0	6	6	0	100
Follow-through on IMSP activities	3	64	0	67	67	0	96	0	20	0	20	20	0	100	0	6	0	6	6	0	100
Efforts to promote collaborative action	1	64	2	67	65	0	98	0	20	0	20	20	0	100	0	6	0	6	6	0	100
Efforts to plan collaborative action between STEM professionals and teachers	4	62	1	67	66	0	94	1	19	0	20	20	0	95	0	6	0	6	6	0	100
Processes used to assess teachers' needs	7	58	2	67	65	0	89	0	20	0	20	20	0	100	0	6	0	6	6	0	100
Processes used to assess students' needs	9	53	5	67	62	0	85	3	16	1	20	20	0	80	0	4	2	6	6	0	67
Participation of influential people in the IMSP that represent a variety of interests	1	64	2	67	65	0	98	0	20	0	20	20	0	100	0	6	0	6	6	0	100

IHE	MS							WIP-1							WIP-2						
	Not Sure, Dis, or Very Dissat	Satisor Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satisor Very Satis	Not Appl	Valid Total	Grand Total	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid Total	Grand Total	Missing	Valid %
Diversity of partners and participants	1	64	2	67	65	0	98	1	19	0	20	20	0	95	0	6	0	6	6	0	100
Respect, acceptance and recognition of my contributions to reaching the IMSP goals	4	62	1	67	66	0	94	0	20	0	20	20	0	100	0	6	0	6	6	0	100
Resources provided by the partner districts and/or schools to support the IMSP grant	5	59	3	67	64	0	92	0	18	2	20	20	0	90	0	6	0	6	6	0	100
Resources provided by the partner industry organizations to support the IMSP grant	7	45	14	66	52	1	87	1	18	1	20	20	0	90	1	4	1	6	6	0	67
Average % Vision							94							94							
Strength and competence of IMSP leadership	2	65	0	67	67	0	97	0	20	0	20	20	0	100	0	6	0	6	6	0	100
Sensitivity to cultural issues	1	64	2	67	65	0	98	1	19	0	20	20	0	95	0	6	0	6	6	0	100
Opportunities for me to take a leadership role	3	59	5	67	62	0	95	0	20	0	20	20	0	100	0	6	0	6	6	0	100
Trust that partners and participants afford each other	3	64	0	67	67	0	96	0	20	0	20	20	0	100	0	6	0	6	6	0	100

IHE	MS							WIP-1							WIP-2						
	Not Sure, Dis, or Very Dissat	Satisor Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satisor Very Satis	Not Appl	Valid Total	Grand Total	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid Total	Grand Total	Missing	Valid %
Transparency of decision-making	5	61	0	66	66	1	92	0	20	0	20	20	0	100	1	5	0	6	6	0	83
Average % Leadership							99							99							100
Use of the media to promote awareness of the IMSP goals, actions, and accomplishments	13	47	6	66	60	1	78	4	15	1	20	20	0	75	0	6	0	6	6	0	100
Communication among members of the partnership	3	62	1	66	65	1	95	0	20	0	20	20	0	100	0	6	0	6	6	0	100
Communication between the IMSP and the broader community	8	52	4	64	60	3	87	3	17	0	20	20	0	85	0	6	0	6	6	0	100
Extent to which IMSP participants are listened to and heard	3	60	2	65	63	2	95	0	20	0	20	20	0	100	0	6	0	6	6	0	100
Working relationships established with school officials	5	57	4	66	62	1	92	1	18	1	20	20	0	90	0	5	1	6	6	0	83
Information provided on issues and available resources	4	60	2	66	64	1	94	0	20	0	20	20	0	100	0	6	0	6	6	0	100
Average % Communication							90							92							97

IHE	MS							WIP-1							WIP-2						
	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid Total	Grand Total	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid Total	Grand Total	Missing	Valid %
Strength and competence of IMSP faculty and staff	4	59	3	66	63	1	94	0	20	0	20	20	0	100	0	6	0	6	6	0	100
Training and technical assistance provided by IMSP faculty and staff	4	56	6	66	60	1	93	0	20	0	20	20	0	100	0	6	0	6	6	0	100
Help given by IMSP faculty and staff in understanding IMSP requirements	4	57	5	66	61	1	93	1	18.0	1	20	20	0	90	0	6	0	6	6	0	100
Help given by IMSP faculty and staff to become better able to address and resolve their concerns	5	54	7	66	59	1	92	1	19.0	0	20	20	0	95	0	6	0	6	6	0	100
Working relationships established with school and industry partners	3	56	7	66	59	1	95	0	19.0	1	20	20	0	95	1	5	0	6	6	0	83
Information provided on issues and available resources	3	59	4	66	62	1	95	0	19.0	0	19	20	1	100	0	6	0	6	6	0	100
Average % Technical Support							94							97							97

IHE	MS							WIP-1							WIP-2						
	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid Total	Grand Total	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid Total	Grand Total	Missing	Valid %
Improvement in teachers' content knowledge	1	62	3	66	63	1	98	0	20.0	0	20	20	0	100	0	6	0	6	6	0	100
Teachers' access and use of new instructional resources	1	62	3	66	63	1	98	0	20.0	0	20	20	0	100	0	6	0	6	6	0	100
Teachers' access and use of new STEM technologies	4	58	4	66	62	1	94	1	19.0	0	20	20	0	95	0	6	0	6	6	0	100
Teachers' progress toward meeting endorsement or certification requirements	3	57	6	66	60	1	95	2	14.0	4	20	20	0	70	0	4	2	6	6	0	67
Effective collaboration between STEM industry experts and teachers	3	51	12	66	54	1	94	2	17.0	1	20	20	0	85	1	4	1	6	6	0	67
Teachers' access to mentors	5	54	7	66	59	1	92	2	17.0	1	20	20	0	85	1	5	0	6	6	0	83
Fairness with which resources and opportunities are distributed	2	60	4	66	62	1	97	1	18.0	0	19	20	1	95	0	6	0	6	6	0	100
Capacity of IMSP teachers to give support to each other	4	57	4	65	61	2	93	0	20.0	0	20	20	0	100	0	6	0	6	6	0	100

IHE	MS							WIP-1							WIP-2						
	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid Total	Grand Total	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid Total	Grand Total	Missing	Valid %
Improvement in science and/or mathematics instruction in your partner schools	6	54	6	66	60	1	90	0	18.0	1	19	20	1	95	0	6	0	6	6	0	100
Average % Progress toward objectives							94							90							91
My college received important professional benefits from participation in the IMSP.	5	58	4	67	63	0	92	0	20.0	0	20	20	0	100	0	5	1	6	5	0	100
The benefits my college received were worth the time, effort, and cost invested in the IMSP.	4	59	4	67	63	0	94	0	20.0	0	20	20	0	100	0	5	1	6	5	0	100
The benefits my college received were commensurate with the contributions made to the IMSP.	6	57	4	67	63	0	90	0	20.0	0	20	20	0	100	0	5	1	6	5	0	100
I strongly believe this IMSP should be continued.	4	61	2	67	65	0	94	1	19.0	0	20	20	0	95	0	5	1	6	5	0	100

IHE	MS							WIP-1							WIP-2						
	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid Total	Grand Total	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid Total	Grand Total	Missing	Valid %
I will participate fully in this IMSP's activities in the future.	6	59	2	67	65	0	91	1	19.0	0	20	20	0	95	0	5	1	6	5	0	100
The IMSP activities need to be dramatically improved to make it worth my college's investment.	28	35	0	63	63	4	56	10	10.0	0	20	20	0	50	3	2	0	5	5	1	40
The composition of this IMSP needs to be expanded or changed to be more effective.	34	29	3	66	63	1	46	14	6.0	0	20	20	0	30	2	3	1	6	5	0	60
My college has changed its structure, policies, or functions to institutionalize the IMSP goals and activities.	19	39	9	67	58	0	67	6	12.0	2	20	18	0	67	1	4	1	6	5	0	80
My college intends to sustain IMSP activities after the expiration of grant funds.	18	44	5	67	62	0	71	6	12.0	2	20	18	0	67	1	4	1	6	5	0	80

IHE	MS							WIP-1							WIP-2						
	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid Total	Grand Total	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid Total	Grand Total	Missing	Valid %
My college is actively seeking alternative funds to sustain IMSP activities after the expiration of grant funds.	22	37	7	66	59	0	63	4	14.0	2	20	18	0	78	0	4	2	6	4	0	100
Average % Sustainability							76							78							86

Table 17. Aggregated Survey Responses - Industry

Industry	MS							WIP-1							WIP-2						
	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %
Clarity of the vision for the IMSP goals and objectives	2	15	1	18	17	0	88	1	8	0	9	9	0	89	0	1	0	1	1	0	100
Planning process used to prepare the IMSP objectives	4	13	1	18	17	0	76	0	9	0	9	9	0	100	0	1	0	1	1	0	100
Follow-through on IMSP activities	4	13	1	18	17	0	76	1	8	0	9	9	0	89	0	1	0	1	1	0	100

Industry	MS							WIP-1							WIP-2						
	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %
Efforts to promote collaborative action	5	12	1	18	17	0	71	0	9	0	9	9	0	100	0	1	0	1	1	0	100
Efforts to plan collaborative action between STEM professionals and teachers	5	13	0	18	18	0	72	0	9	0	9	9	0	100	0	1	0	1	1	0	100
Participation of influential people in the IMSP that represent a variety of interests	4	12	2	18	16	0	75	1	8	0	9	9	0	89	0	1	0	1	1	0	100
Diversity of partners and participants	5	12	1	18	17	0	71	2	7	0	9	9	0	78	0	1	0	1	1	0	100
Respect, acceptance and recognition of your contributions to reaching the IMSP goals	4	13	1	18	17	0	76	0	8	1	9	8	0	100	0	1	0	1	1	0	100
Resources provided by your organization to support the IMSP grant	5	12	1	18	17	0	71	1	8	0	9	9	0	89	0	1	0	1	1	0	100
Average % Vision							75							93							100
Strength and competence of IMSP leadership	3	15	0	18	18	0	83	0	9	0	9	9	0	100	0	1	0	1	1	0	100

Industry	MS							WIP-1							WIP-2						
	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %
Sensitivity to cultural issues	2	15	1	18	17	0	88	2	7	0	9	9	0	78	1	0	0	1	1	0	0
Opportunities for me to take a leadership role	5	12	1	18	17	0	71	1	7	1	9	8	0	88	0	1	0	1	1	0	100
Trust that partners and participants afford each other	2	15	0	17	17	1	88	1	8	0	9	9	0	89	0	1	0	1	1	0	100
Transparency of decision-making	4	13	1	18	17	0	76	1	8	0	9	9	0	89	0	1	0	1	1	0	100
Average % Leadership							81							89							80
Use of the media to promote awareness of the IMSP goals, actions, and accomplishments	6	8	4	18	14	0	57	2	7	0	9	9	0	78	1	0	0	1	1	0	0
Communication among members of the partnership	6	12	0	18	18	0	67	2	7	0	9	9	0	78	0	1	0	1	1	0	100
Communication between the IMSP and the broader community	6	8	4	18	14	0	57	2	7	0	9	9	0	78	0	1	0	1	1	0	100
Extent to which IMSP participants are listened to and heard	4	12	2	18	16	0	75	2	7	0	9	9	0	78	0	1	0	1	1	0	100
Working relationships established with school officials	6	10	2	18	16	0	63	0	9	0	9	9	0	100	0	1	0	1	1	0	100

Industry	MS							WIP-1							WIP-2						
	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %
Information provided on issues and available resources	5	13	0	18	18	0	72	0	9	0	9	9	0	100	0	1	0	1	1	0	100
Average % Communication							65							85							83
Strength and competence of IMSP faculty and staff	3	15	0	18	18	0	83	0	9	0	9	9	0	100	0	1	0	1	1	0	100
Training and technical assistance provided by faculty and staff	4	12	2	18	16	0	75	0	9	0	9	9	0	100	0	1	0	1	1	0	100
Help given to the partners by IMSP faculty and staff in understanding IMSP requirements	5	12	1	18	17	0	71	1	8	0	9	9	0	89	0	1	0	1	1	0	100
Help given to the partners by the IMSP faculty and staff to become better able to address and resolve your concerns	5	11	2	18	16	0	69	2	7	0	9	9	0	78	0	1	0	1	1	0	100
Working relationships established with school officials	7	9	2	18	16	0	56	1	8	0	9	9	0	89	0	1	0	1	1	0	100

Industry	MS							WIP-1							WIP-2						
	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %
Information provided on issues and available resources	6	11	1	18	17	0	65	1	8	0	9	9	0	89	0	1	0	1	1	0	97
Average % Technical Support							70							91							100
Improvement in teachers' content knowledge	4	14	0	18	18	0	78	0	7	2	9	7	0	100	0	1	0	1	1	0	100
Teachers' access and use of new instructional resources	5	12	1	18	17	0	71	0	7	2	9	7	0	100	0	1	0	1	1	0	100
Teachers' access and use of new STEM technologies	6	11	1	18	17	0	65	0	7	2	9	7	0	100	0	1	0	1	1	0	100
Teachers' progress toward meeting endorsement or certification requirements	5	10	3	18	15	0	67	2	5	2	9	7	0	71	0	1	0	1	1	0	100
Effective collaboration between STEM industry experts and teachers	7	10	0	17	17	1	59	0	7	2	9	7	0	100	0	1	0	1	1	0	100
Teachers' access to mentors	6	11	1	18	17	0	65	1	6	2	9	7	0	86	0	1	0	1	1	0	100
Fairness with which resources and opportunities are distributed	5	12	1	18	17	0	71	1	6	2	9	7	0	86	0	1	0	1	1	0	100

Industry	MS							WIP-1							WIP-2						
	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %
Capacity of IMSP teachers to give support to each other	5	12	1	18	17	0	71	0	7	2	9	7	0	100	1	0	0	1	1	0	0
Improvement in science and/or mathematics instruction in partner schools	3	12	3	18	15	0	80	0	7	2	9	7	0	100	0	1	0	1	1	0	100
Average % Progress toward objectives							69							94							89
My organization received important professional benefits from participation in the IMSP.	0	1	17	18	1	0	100	0	1	8	9	1	0	100	0	0	1	1	0	0	N/A
The benefits my organization received were worth the time, effort, and cost invested in the IMSP.	0	1	17	18	1	0	100	0	1	8	9	1	0	100	0	0	1	1	0	0	N/A
The benefits my organization received were commensurate with the contributions made to the IMSP.	0	1	17	18	1	0	100	0	1	7	8	1	0	100	0	0	1	1	0	0	N/A
I strongly believe this IMSP should be continued.	3	9	6	18	12	0	75	0	6	3	9	6	0	100	0	1	0	1	1	0	100

Industry	MS							WIP-1							WIP-2						
	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %
I will participate fully in this IMSP's activities in the future.	5	7	6	18	12	0	58	0	6	3	9	6	0	100	0	1	0	1	1	0	100
The IMSP activities need to be dramatically improved to make it worth my organization's investment.	0	1	17	18	1	0	100	0	1	8	9	1	0	100	0	0	1	1	0	0	N/A
The composition of this IMSP needs to be expanded or changed to be more effective.	0	1	17	18	1	0	100	0	1	8	9	1	0	100	0	0	1	1	0	0	N/A
My organization has changed its structure, policies, or functions to institutionalize the IMSP goals and activities.	0	1	17	18	1	0	100	0	1	8	9	1	0	100	0	0	1	1	0	0	N/A
Average % Sustainability							92							100							100

Table 18. Aggregated Survey Responses - School

School	MS							WIP-1							WIP-2						
	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %
Clarity of the vision for the IMSP goals and objectives	5	37	0	42	42	0	88	0	5	0	5	5	0	100	1	2	0	3	3	1	67
Planning process used to prepare the IMSP objectives	4	36	0	40	40	2	90	0	5	0	5	5	2	100	1	2	0	3	3	1	67
Follow-through on IMSP activities	4	37	0	41	41	1	90	0	5	0	5	5	2	100	1	2	0	3	3	1	67
Efforts to promote collaborative action	6	35	0	41	41	1	85	0	5	0	5	5	2	100	1	2	0	3	3	1	67
Efforts to plan collaborative action between STEM professionals and teachers	5	37	0	42	42	0	88	0	5	0	5	5	2	100	0	3	0	3	3	1	100
Participation of influential people in the IMSP that represent a variety of interests	4	38	0	42	42	0	90	0	5	0	5	5	2	100	1	2	0	3	3	1	67
Diversity of partners and participants	8	34	0	42	42	0	81	1	4	0	5	5	2	80	1	2	0	3	3	1	67

School	MS							WIP-1							WIP-2						
	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %
Respect, acceptance and recognition of your contributions to reaching the IMSP goals	5	36	0	41	41	1	88	0	5	0	5	5	2	100	1	2	0	3	3	1	67
Resources provided by your organization to support the IMSP grant	9	30	0	39	39	3	77	1	4	0	5	5	2	80	0	3	0	3	3	1	100
Average % Vision							86							96							74
Strength and competence of IMSP leadership	5	37	0	42	42	0	88	1	3	0	4	4	3	75	1	2	0	3	3	1	67
Sensitivity to cultural issues	7	34	0	41	41	1	83	0	4	0	4	4	3	100	1	2	0	3	3	1	67
Opportunities for me to take a leadership role	3	35	0	38	38	4	92	0	4	0	4	4	3	100	1	2	0	3	3	1	67
Trust that partners and participants afford each other	6	36	0	42	42	0	86	0	4	0	4	4	3	100	1	2	0	3	3	1	67
Transparency of decision-making	7	35	0	42	42	0	83	0	4	0	4	4	3	100	1	2	0	3	3	1	67
Average % Leadership							86							96							67

School	MS							WIP-1							WIP-2						
	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %
Use of the media to promote awareness of the IMSP goals, actions, and accomplishments	8	31	0	39	39	3	79	0	3	0	3	3	4	100	1	2	0	3	3	1	67
Communication among members of the partnership	6	36	0	42	42	0	86	0	4	0	4	4	3	100	1	2	0	3	3	1	67
Communication between the IMSP and the broader community	8	31	0	39	39	3	79	1	3	0	4	4	3	75	1	2	0	3	3	1	67
Extent to which IMSP participants are listened to and heard	5	36	0	41	41	1	88	0	3	0	3	3	4	100	1	2	0	3	3	1	67
Working relationships established with school officials	6	35	0	41	41	1	85	0	4	0	4	4	3	100	1	2	0	3	3	1	67
Information provided on issues and available resources	4	36	0	40	40	2	90	0	3	0	3	3	4	100	1	2	0	3	3	1	67
Average % Communication							85							96							67
Strength and competence of IMSP faculty and staff	5	35	0	40	40	2	88	0	3	0	3	3	4	100	1	2	0	3	3	1	67

School	MS							WIP-1							WIP-2						
	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %
Training and technical assistance provided by faculty and staff	6	32	0	38	38	4	84	0	3	0	3	3	4	100	1	2	0	3	3	1	67
Help given to the partners by IMSP faculty and staff in understanding IMSP requirements	4	32	0	36	36	6	89	0	3	0	3	3	4	100	1	2	0	3	3	1	67
Help given to the partners by the IMSP faculty and staff to become better able to address and resolve your concerns	3	34	0	37	37	5	92	0	3	0	3	3	4	100	1	2	0	3	3	1	67
Working relationships established with school officials	6	32	0	38	38	4	84	0	4	0	4	4	3	100	1	1	0	2	2	2	50
Information provided on issues and available resources	4	33	0	37	37	5	89	0	3	0	3	3	4	100	1	2	0	3	3	1	67
Average % Technical Support								88						100							64
Improvement in teachers' content knowledge	6	35	0	41	41	1	85	1	4	0	5	5	2	80	1	3	0	4	4	0	75

School	MS							WIP-1							WIP-2						
	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %
Teachers' access and use of new instructional resources	3	38	0	41	41	1	93	0	5	0	5	5	2	100	0	4	0	4	4	0	100
Teachers' access and use of new STEM technologies	6	35	0	41	41	1	85	1	4	0	5	5	2	80	1	3	0	4	4	0	75
Teachers' progress toward meeting endorsement or certification requirements	5	36	0	41	41	1	88	0	3	0	3	3	4	100	1	3	0	4	4	0	75
Effective collaboration between STEM industry experts and teachers	9	29	0	38	38	4	76	1	3	0	4	4	3	75	2	2	0	4	4	0	50
Teachers' access to mentors	8	31	0	39	39	3	79	0	4	0	4	4	3	100	2	2	0	4	4	0	50
Fairness with which resources and opportunities are distributed	6	33	0	39	39	3	85	1	3	0	4	4	3	75	1	2	0	3	3	1	67
Capacity of IMSP teachers to give support to each other	7	32	0	39	39	3	82	1	3	0	4	4	3	75	1	2	0	3	3	1	67

School	MS							WIP-1							WIP-2						
	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %
Improvement in science and/or mathematics instruction in partner schools	9	27	0	36	36	6	75	1	3	0	4	4	3	75	1	2	0	3	3	1	67
Average % Progress toward objectives							83							84							69
My organization received important professional benefits from participation in the IMSP.	5	32	5	42	37	0	86	0	5	2	7	5	0	100	0	3	1	4	3	0	100
The benefits my organization received were worth the time, effort, and cost invested in the IMSP.	6	31	5	42	37	0	84	0	5	2	7	5	0	100	0	3	1	4	3	0	100
The benefits my organization received were commensurate with the contributions made to the IMSP.	5	32	5	42	37	0	86	0	5	2	7	5	0	100	0	3	1	4	3	0	100
I strongly believe this IMSP should be continued.	3	38	1	42	41	0	93	0	5	2	7	5	0	100	1	2	1	4	3	0	67

School	MS							WIP-1							WIP-2						
	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %
I will participate fully in this IMSP's activities in the future.	7	30	5	42	37	0	81	1	4	2	7	5	0	80	1	2	1	4	3	0	67
The IMSP activities need to be dramatically improved to make it worth my organization's investment.	20	16	5	41	36	1	44	2	2	3	7	4	0	50	2	1	1	4	3	0	33
The composition of this IMSP needs to be expanded or changed to be more effective.	17	19	6	42	36	0	53	1	3	3	7	4	0	75	0	3	1	4	3	0	100
My organization has changed its structure, policies, or functions to institutionalize the IMSP goals and activities.	17	17	8	42	34	0	50	2	2	3	7	4	0	50	0	3	1	4	3	0	100
Average % Sustainability							72							82							83

Table 19. Aggregated Survey Responses - Teacher

Teacher	MS							WIP-1							WIP-2						
	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %
Clarity of the vision for the IMSP goals and objectives	61	235	2	298	296	1	79	15	111	1	127	126	0	88	20	257	3	280	277	1	93
Planning process used to prepare the IMSP objectives	72	213	12	297	285	2	75	14	108	5	127	122	0	89	27	240	13	280	267	1	90
Follow-through on IMSP activities	61	233	3	297	294	2	79	8	118	1	127	126	0	94	28	246	3	277	274	4	90
Efforts to promote collaborative action with other educators	35	257	2	294	292	5	88	2	124	1	127	126	0	98	14	265	1	280	279	1	95
Efforts to promote collaborative action with Science Technology Engineering or Math (STEM) professionals outside the university	89	196	13	298	285	1	69	11	111	3	125	122	2	91	28	244	8	280	272	1	90
Processes used to assess your needs	80	215	3	298	295	1	73	14	111	1	126	125	1	89	31	246	2	279	277	2	89

Teacher	MS							WIP-1							WIP-2						
	Not Sure, Dis, or Very Dissat	Satisor Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satisor Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satisor Very Satis	Not Appl	Valid N	Total N	Missing	Valid %
Processes used to assess your students' needs	96	195	6	297	291	2	67	28	96	2	126	124	1	77	53	223	3	279	276	2	81
Participation of influential people in the IMSP that represent a variety of interests	62	230	5	297	292	2	79	20	106	1	127	126	0	84	21	257	1	279	278	2	92
Diversity of partners and participants	41	252	4	297	293	2	86	7	117	1	125	124	2	94	7	270	2	279	277	2	97
Respect, acceptance and recognition of your contributions to reaching the IMSP goals	56	240	2	298	296	1	81	6	119	1	126	125	1	95	19	257	4	280	276	1	93
Resources provided by your district and/or school to support the IMSP grant	84	202	10	296	286	3	71	19	103	4	126	122	1	84	47	220	10	277	267	4	82
Average % Vision							77							89							90
Strength and competence of your IMSP leadership	54	243	2	299	297	0	82	5	120	1	126	125	1	96	12	261	4	277	273	4	96
Sensitivity to cultural issues	41	242	16	299	283	0	86	8	113	5	126	121	1	93	29	236	12	277	265	4	89
Opportunities for you to take a leadership role	60	231	7	298	291	1	79	12	110	4	126	122	1	90	24	241	10	275	265	6	91

Teacher	MS							WIP-1							WIP-2						
	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %
Trust that partners and participants afford each other	45	249	4	298	294	0	85	7	116	3	126	123	1	94	16	254	6	276	270	5	94
Average % Leadership							99							188							8
Use of the media to promote awareness of the IMSP goals, actions, and accomplishments	61	228	7	296	289	3	79	10	115	2	127	125	0	92	22	251	5	278	273	3	92
Communication among members of the partnership	121	163	11	295	284	4	57	31	94	2	127	125	0	75	73	195	10	278	268	3	73
Communication between the IMSP and the broader community	80	208	5	293	288	6	72	13	112	1	126	125	1	90	30	243	4	277	273	4	89
Extent to which IMSP participants are listened to and heard	77	208	11	296	285	3	73	19	107	1	127	126	0	85	41	225	10	276	266	5	85
Working relationships established with school officials	66	221	7	294	287	5	77	10	115	1	126	125	1	92	19	255	2	276	274	5	93
Information provided on issues and available resources	54	243	2	299	297	0	82	5	120	1	126	125	1	96	12	261	4	277	273	4	96
Average % Communication							76							89							88

Teacher	MS							WIP-1							WIP-2						
	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %
Strength and competence of IMSP faculty and staff	44	248	6	298	292	1	85	8	117	2	127	125	0	94	16	260	4	280	276	1	94
Training and technical assistance provided by faculty and staff	57	232	10	299	289	0	80	10	115	2	127	125	0	92	21	255	4	280	276	1	92
Help given to the participants by the IMSP faculty and staff in meeting IMSP requirements	53	238	6	297	291	2	82	11	113	2	126	124	1	91	23	252	5	280	275	1	92
Help given the participants by the IMSP faculty and staff to become better able to address and resolve your concerns	53	236	7	296	289	3	82	9	115	2	126	124	1	93	30	247	2	279	277	2	89
Average % Technical Support							82							92							92
Improvement in your content knowledge	48	245	5	298	293	1	84	9	116	1	126	125	1	93	9	268	2	279	277	2	97
Your access and use of new instructional resources	52	242	3	297	294	2	82	4	120	0	124	124	3	97	7	271	1	279	278	2	97

Teacher	MS							WIP-1							WIP-2						
	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %
Your access and use of new Science Technology Engineering or Math (STEM) technologies	81	205	11	297	286	2	72	8	112	5	125	120	2	93	27	245	8	280	272	1	90
Your progress toward meeting endorsement or certification requirements	42	232	22	296	274	3	85	6	103	16	125	109	2	94	25	210	45	280	235	1	89
Your collaboration with Science Technology Engineering or Math (STEM) industry experts	99	178	20	297	277	2	64	17	105	3	125	122	2	86	25	242	12	279	267	2	91
Your access to mentors	80	204	14	298	284	1	72	13	109	3	125	122	2	89	28	243	10	281	271	0	90
Fairness with which resources and opportunities are distributed	40	253	4	297	293	2	86	7	116	0	123	123	4	94	10	267	3	280	277	1	96
Capacity of IMSP teachers to give support to each other	39	255	3	297	294	2	87	8	115	1	124	123	3	93	14	263	3	280	277	1	95
Improvement in science and/or mathematics instruction in your school	72	214	11	297	286	2	75	14	109	2	125	123	2	89	25	249	5	279	274	2	91
Average % Progress toward objectives							78							92							93

Teacher	MS							WIP-1							WIP-2						
	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %
In most ways, being a Science Technology Engineering or Math (STEM) teacher is close to my ideal.	38	245	14	297	283	2	87	16	97	13	126	113	1	86	37	218	26	281	255	0	85
My school conditions as a Science Technology Engineering or Math (STEM) teacher are excellent.	122	153	20	295	275	4	56	45	67	14	126	112	1	60	92	164	25	281	256	0	64
I am satisfied with being a Science Technology Engineering or Math (STEM) teacher.	41	231	23	295	272	4	85	11	100	15	126	111	1	90	33	213	32	278	246	3	87
So far I have gotten the important things I want to be an effective Science Technology Engineering or Math (STEM) teacher.	81	198	16	295	279	4	71	22	91	13	126	113	1	81	40	212	29	281	252	0	84
If I could choose my career over, I would change almost nothing.	79	209	8	296	288	3	73	32	87	7	126	119	0	73	70	201	10	281	271	0	74
Average % Job Satisfaction							74							78							79

Teacher	MS							WIP-1							WIP-2						
	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %
I received important professional benefits from participation in the IMSP.	45	250	2	297	295	2	85	8	117	1	126	125	1	94	12	267	2	281	279	0	96
The benefits I received were worth the time, effort, and cost invested in the IMSP.	54	242	2	298	296	1	82	11	114	1	126	125	1	91	15	263	3	281	278	0	95
The benefits I received were commensurate with the contributions I made to the IMSP.	45	250	2	297	295	2	85	12	113	1	126	125	1	90	20	257	2	279	277	2	93
I strongly believe this IMSP should be continued.	42	255	1	298	297	1	86	9	117	0	126	126	1	93	9	271	1	281	280	0	97
I will participate fully in this IMSP's activities in the future.	70	221	6	297	291	2	76	28	96	2	126	124	1	77	31	247	1	279	278	2	89
I received important professional benefits from participation in the IMSP.	166	125	0	291	291	8	43	67	59	0	126	126	1	47	132	140	0	272	272	9	51
The benefits I received were worth the time, effort, and cost invested in the IMSP.	83	206	9	298	289	1	71	17	108	1	126	125	1	86	40	236	3	279	276	2	86

Teacher	MS							WIP-1							WIP-2						
	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %	Not Sure, Dis, or Very Dissat	Satis or Very Satis	Not Appl	Valid N	Total N	Missing	Valid %
Average % Sustainability							74							82							85

Appendix F

Partner Narrative Survey Results

Table 20. Comments about IMSP vision and support

Grant	Survey	ID	Comments about your IMSP vision and support
MS Program	13	IHE	It would be better if there are more content-courses.
MS Program	7	IHE	Major strength of this project is the workforce emphasis.
MS Program	10	IHE	MSP continues to be the driving force for enhancing teachers' math and science content and pedagogical knowledge, which would have been difficult otherwise.
MS Program	63	IHE	Strong program that keeps on track.
MS Program	21	IHE	The vision for this project came about through a coming together of LEA administrators, LEA teachers, and faculty from two colleges at DePaul. We designed a project to directly meet the needs of the district whose end goal is to provide the best education for the students. The vision is very clear, and the program is directly focused on it. It was a real partnership, with everyone's contributions very much respected and recognized.
MS Program	42	IHE	We find it a challenge to get 'real' support from some of our partner districts. Administrators are willing to sign forms, but not always so willing to follow through.
WIP-1 Program	19	IHE	We need to enhance the visibility of Mathematics and Science. These new initiatives are highlighting this area of the curriculum within the schools.
WIP-2 Program	6	IHE	Well defined goals.
WIP-1 Program	6	Industry	I am a new director coming into this program after its conclusion.
MS Program	5	School	The district has been absent throughout the entire process.
MS Program	20	School	The vision for the program was well defined. Now that the first cohort has graduated I am hoping to see those participants in STEM buildings.
MS Program	30	School	I always felt that the leadership was extremely supportive of us, especially in getting resources which we could us in our classrooms.
MS Program	32	School	There has been virtually no collaboration between my school and school district with the IMSP program, but fault for this lies with my district leadership.

Grant	Survey	ID	Comments about your IMSP vision and support
MS Program	39	School	We went through a change of facilitation at the University level. New supervisors acted swiftly to alter the problems, but it was a rough go.
WIP-2 Program	162	Teacher	All workshops have been a great source of information and useful materials.
WIP-2 Program	150	Teacher	Always given time to collaborate and share!!!
MS Program	275	Teacher	At the start, we were told that we would earn an endorsement in mathematics. However, the two middle school classes necessary for endorsement in Illinois were not included in the program.
MS Program	274	Teacher	Collaborative action with other educators has resulted with me doing the majority of the work.
WIP-2 Program	239	Teacher	During my participation I was unclear what the objective of the program was. I have been piecing together what I learned and I feel like I still need some support and direction. I also still have a few unanswered questions.
MS Program	102	Teacher	Everything was implemented accordingly
WIP-2 Program	176	Teacher	Excellent presentations by everyone involved.
WIP-2 Program	130	Teacher	Excellent vision for MSP
WIP-2 Program	217	Teacher	Excellent!!
WIP-2 Program	167	Teacher	[name] has been amazing from day one in making clear what the vision was to be for this grant. She has always been there to support us. She is great!
WIP-2 Program	13	Teacher	Great Job!
WIP-1 Program	25	Teacher	GREAT JOB.

Grant	Survey	ID	Comments about your IMSP vision and support
MS Program	123	Teacher	I couldn't be happier with my experience with this program. I would recommend it to anyone.
MS Program	98	Teacher	I feel I have been greatly supported throughout the program.
MS Program	235	Teacher	I feel like the original goals of the cohort were not exactly what we accomplished. For example, this was billed as a teacher leadership focused degree, however, I feel there was no leadership training. Mainly, I feel it was a curriculum focused degree with a little instruction focus.
MS Program	261	Teacher	I felt that this program was not well considered or implemented. This program did not reflect high expectations or benchmarks.
WIP-2 Program	39	Teacher	I like the fact if I need help they are an email away.
WIP-1 Program	36	Teacher	I met the most incredible teachers and professors in Southern and central IL and I would have NEVER had access to these people.
MS Program	46	Teacher	I was disappointed our district did not have much direct involvement in encouraging us in the project. Thankfully, the NIU staff more than made up for that.
MS Program	190	Teacher	I was so proud to lead this initiative. I learned a great deal from the experience.
WIP-2 Program	257	Teacher	Intel Math was a great experience.
WIP-2 Program	163	Teacher	It is a great grant and an opportunity to learn more about how to teach math and science.
WIP-1 Program	117	Teacher	It was very science focused. Not really any of the other 3 aspects of STEM.
MS Program	12	Teacher	LEP has been absent throughout this program. Has not made any acknowledgement of student progress.

Grant	Survey	ID	Comments about your IMSP vision and support
WIP-1 Program	86	Teacher	[name] and [name] worked themselves to death to facilitate all of our needs. Thank you!!
WIP-2 Program	36	Teacher	My district is not part of the IMSP program. Those of us participating in the program are doing so because of our own desire to do so. We were informed of the initiative by a co-worker.
MS Program	137	Teacher	My district promoted participation, but was not willing to pay for nine new masters degrees.
MS Program	251	Teacher	My school district has not recognized nor care to ever become educated about the IMSP goals.
MS Program	152	Teacher	My school district Unit 4 did not give me anything.
WIP-1 Program	62	Teacher	No support from the district.
WIP-1 Program	90	Teacher	none
WIP-2 Program	277	Teacher	None to share
WIP-2 Program	124	Teacher	Not clear at sign-up of requirements. No one seemed to know who was in charge. Unorganized to some degree, and misleading.
MS Program	21	Teacher	Not sure what our School provided for grant. We drove our cars, bought gas, did not get time off for attendance. Do not recall any outside professionals participating. We came to depend on each other more within the school to complete assignments, worked with others in the school we normally would not have.
MS Program	271	Teacher	Our district has done everything to support a program that has little direction and clarity from Illinois State University. This has been a colossally disappointing experiencing.
MS Program	173	Teacher	Our professors involved at our local level have been exceptionally supportive.
WIP-1 Program	89	Teacher	Overall, I am pleased with the vision and support of this grant.
WIP-2 Program	25	Teacher	Please note that my last comment is directed to the school I was with last year. This fall I am starting with a new school. Its support is fine.
WIP-2 Program	23	Teacher	The participants received some wonderful technological resources and training to use those resources

Grant	Survey	ID	Comments about your IMSP vision and support
WIP-2 Program	245	Teacher	The surveys used did not allow for me to share my ideas. Everything else was great!
MS Program	212	Teacher	The vision for this program was wonderful--it just never left the ground. It still feels like it is in the planning process even after three years. I have not benefitted from this program to become a teacher leader. There were not enough classes having to do with teaching or leadership. Mostly, we were stuck in classes relearning mathematics from high school--not even looking at the curriculum as teachers--we were just forced into the role of student. Teacher leaders are able to collaborate, talk curriculum, mentor, initiate ideas, implement new ideas and change, they are aware of the complexities of school policies and working with people...and they are well schooled in best TEACHING practices and consumers of educational research and tools and technology-- None of these needs were addressed other than technology and an introduction leadership class that skimmed over topics.
MS Program	243	Teacher	The vision of the program and the incorporation of STEM was excellent.
MS Program	280	Teacher	There were changes in the plans that were unexpected, though not much of a distraction to the overall goal of the program.
WIP-2 Program	144	Teacher	This grant has opened so many doors for me and I'm very proud to be a part of such a wonderful program. I am a better teacher because of this grant and my students are so much more prepared for the next grade level!
MS Program	11	Teacher	This program has been fragmented and does not follow a logical flow of courses.
MS Program	262	Teacher	This program was not in the best set of hands to run it correctly. I believe there were a handful of professors from [IHE] that really did care and want to help us. There were also those professors who did not show any interest in better us as educators.
MS Program	17	Teacher	This program was not what I signed up for. There was not enough emphasis on the classroom aspect or developing me as a teacher, but instead was way too high content knowledge base. This was not a master's program to me, but an undergraduate degree because of this. A master's program involves implementation, discussion and collaboration of topics, not BUSY WORK--testing, content knowledge reading, research papers, or unguided lab work. There was simply not enough higher level thinking through synthesis and evaluation for this to be beneficial. I was very disappointed in the program, and even more disappointed that there was no modifications to the program when concerns were raised, but instead we were told that because this was a 'free' master's program to suck it up and do what we were told. The university leaders in particular were unrealistic, especially Dr. Othman, who was quite honestly rude and completely unaware of what an educator in the classroom needed to make this program viable. I will not be recommending the program to any of my many colleagues or friends. There are better, more efficient ones out there.
WIP-1 Program	33	Teacher	This was by FAR the best experience I have ever had regarding professional development and its relevance. The support was amazing.

Grant	Survey	ID	Comments about your IMSP vision and support
WIP-2 Program	175	Teacher	This workshop did exactly what it was supposed to do, which was to give teachers the resources and information needed to bring more engineering related lessons into our classrooms. The instructors and staff were wonderful and did an awesome job organizing the workshop and staying focused on exactly what we needed for our students.
WIP-1 Program	18	Teacher	This workshop enabled me to be the teacher I have always dreamed of being.
WIP-2 Program	207	Teacher	To my knowledge, our local school district did nothing to support the grant. When they realized so many people would be gaining a Master's degree, they froze the salary schedule.
MS Program	26	Teacher	Update my teaching skills in teaching science and engineering principles together.
WIP-1 Program	98	Teacher	Very strong connection to teachers and their classrooms
MS Program	199	Teacher	Very unorganized at Aurora University; I've been in previous masters programs and this is by far the worst run program
WIP-1 Program	84	Teacher	We are surveyed to death!
MS Program	5	Teacher	We have been given much support and guidance throughout the entire process. It has made this experience a positive one for me.
WIP-2 Program	48	Teacher	We took a pre/posttest and we have one for our students. Yet WE are to come up with plans based on what was presented, even if one or two of the plans are for subjects not taught specifically by the said teacher. The pre/post tests should show improvement of activities/labs provided and gone through at the workshop - to be a true evaluative tool for the workshop. There was good resources given but the book was outdated and bias, put out by the government. I would have liked a book that I could better used to teach my students and have activities/labs to practice at the workshop ourselves and use in our classes for our students. The GPS was great but some ideas on specific activities for different types of classes would have been better.
MS Program	25	Teacher	Wonderful experience!
WIP-1 Program	2	Teacher	Would like to see other Science fields represented . Very heavy in Physics

Table 21. Comments about IMSP leadership

Grant	Survey	ID	Comments about your IMSP leadership
MS Program	4	IHE	Leadership was outstanding.
MS Program	7	IHE	Some teachers from the schools have been very rude and exhibit unrealistic demands and voiced feelings of entitlements way beyond what the project was about.
MS Program	10	IHE	The collective leadership among faculty and PIs is a distinctive feature of the project I am involved with. I am happy to see that.
MS Program	16	IHE	They are the reason for the success of the program!!
MS Program	21	IHE	The IMSP leadership team on this project is strong.
MS Program	63	IHE	Excellent leader who understands collaborative relationships.
MS Program	2	Industry	Very satisfied with the professionalism and flexibility of Aurora University staff!
WIP-1 Program	9	Industry	Strong leadership from staff fostered confidence in the project. Made it easy for me to seek partner assistance from corporate contacts.
MS Program	5	School	At times I felt that there was an agenda and no one listened to valid concerns.
MS Program	30	School	The leadership team has been very strong and responsive to our comments and concerns.
MS Program	32	School	IMSP leaders have provided excellent leadership and have been very responsive to concerns and feedback.
MS Program	39	School	Once again, the IMSP leadership at the University went through a major change and it effected the planned activities greatly.
MS Program	5	Teacher	Yes, I was asked to present at the ASC in Anaheim Ca. This was a learning experience and it allowed me to take a leadership role at the university.
MS Program	17	Teacher	The university leadership was sorely unprepared, and very disorganized. They also did not respond to student needs or personal goals.

Grant	Survey	ID	Comments about your IMSP leadership
MS Program	25	Teacher	Top notch!
MS Program	26	Teacher	With other teachers share the 5 E's instruction model.
MS Program	30	Teacher	Leader needs to open a better line of communication for requirements.
MS Program	41	Teacher	I couldn't imagine [IHE faculty name] and [IHE faculty name] being any more professional or supportive. They encouraged us the entire time and expected us to become better teachers of mathematics.
MS Program	44	Teacher	What I learned most from the NIU/RPS master co-hort came from watching two masters at teaching, [IHE faculty name] and [IHE faculty name]. Their compassion, their intelligence, their modeling of teaching methods are all gifts given to me every single time I attended their classes. I also learned a lot more about why I teach mathematics; from a very basic level, the pure beauty and absoluteness of the math problem is so exciting! These gifts and insights are now threaded into my teaching daily.
MS Program	46	Teacher	[IHE faculty name]and [IHE faculty name] were very respectful of our cohort members as individuals and created a very supportive family atmosphere.
MS Program	65	Teacher	[IHE faculty name] and [IHE faculty name]are exceptional leaders. With their support and guidance every participant was able to successfully complete the requirements of this program. Words cannot express the gratitude I have for the instruction and wealth of knowledge I gained from [IHE faculty name]and [IHE faculty name]
MS Program	98	Teacher	The program has helped me to take on more leadership roles in my school community
MS Program	102	Teacher	Always emphasize on designing lessons and projects to include the disadvantage and the underserved.
MS Program	119	Teacher	Our leaders were always helpful and supportive.
MS Program	123	Teacher	Our leaders were very conscientious and flexible. Thanks!
MS Program	149	Teacher	Some of the leadership was very strong, some was not
MS Program	210	Teacher	I was happy with some of the instructors, but unfortunately I didn't feel that everyone was qualified to teach or even lead us in the right direction. I wish that our classes that emphases science would have been taught by science teacher. (I saw on our schedule that it was a math teacher).
MS Program	235	Teacher	Our original coordinator seemed out of touch with reality. Our new coordinator, Vicky Morgan, is excellent.

Grant	Survey	ID	Comments about your IMSP leadership
MS Program	237	Teacher	This program did not have a good strong leader at the beginning and now there are others that are doing the best they can to pick up the pieces. My answers are for who has been in charge at the beginning.
MS Program	243	Teacher	Excellent, all the instructors/leaders where well prepared and knowledgeable.
MS Program	255	Teacher	Participants were given the opportunity to attend a professional panel session at the NCTM in 2011.
MS Program	261	Teacher	Very little of local leadership was seen at any time.
MS Program	262	Teacher	Until this last semester the leadership of this grant was poor.
MS Program	271	Teacher	Leadership has been inconsistent throughout this partnership.
MS Program	272	Teacher	Illinois State's Professors who are leading this program are enthusiastic and prepared. This has been a valuable program for our district's teachers.
MS Program	274	Teacher	I have had a participant malign my character.
MS Program	280	Teacher	[IHE faculty name] and [IHE faculty name]are highly valued and regarded individuals in the IMSP at [IHE name].
WIP-1 Program	2	Teacher	I believe that the IMSP leadership went above and beyond on many occasions.
WIP-1 Program	18	Teacher	The program provided the most professional leadership.
WIP-1 Program	25	Teacher	GREAT JOB.
WIP-1 Program	33	Teacher	the leadership in the Grant was outstanding. Others could learn and have learned from Mary Ann Quivey's direction and expertise.
WIP-1 Program	58	Teacher	[IHE faculty name]and his team did an amazing job with this group

Grant	Survey	ID	Comments about your IMSP leadership
WIP-1 Program	63	Teacher	they did an excellent job. well run, well organized
WIP-1 Program	89	Teacher	The leaders were very willing to use participants as leaders and educators.
WIP-1 Program	90	Teacher	none
WIP-1 Program	114	Teacher	I am really satisfied with the job Gloria Oggero has done. Once again she has been a great resource to the teachers in St. Clair County. I am not sure what exactly Mr. Jed Deets does however.
WIP-1 Program	124	Teacher	I think our grant writer [name] did an excellent job of trying to get us the tools and the instruction to use those tools in the classroom
WIP-2 Program	13	Teacher	Great Job!
WIP-2 Program	14	Teacher	[name] is an extremely organized, hard working woman dedicated to her job.
WIP-2 Program	23	Teacher	both the coordinator and the lead teacher for the course communicate effectively with the participants and work together to provide effective training for participants
WIP-2 Program	36	Teacher	I don't know who the local IMSP leadership team members are.
WIP-2 Program	39	Teacher	IMSP was very sensitive to cultural issues and expressed concerns in our training.
WIP-2 Program	48	Teacher	The main leader was great she gave us a variety of topics and access to the PowerPoints and was very accommodating to us. The other one on the second to last day made a 'bold statement' that was not sensitive to different cultures. Whether or not it is OK for 'academia' the statement and point could have been made in a less insensitive way. The other one was 'teaching' from the outdated book and seemed to not be prepared to cover what we had to read the night before. Also that it seemed that the book was not previewed before being bought to use for this workshop.
WIP-2 Program	161	Teacher	The leader of our grant, [name] , did an outstanding job of providing opportunities for us to increase our knowledge of math and science.
WIP-2 Program	163	Teacher	The leadership is very knowledgeable.

Grant	Survey	ID	Comments about your IMSP leadership
WIP-2 Program	167	Teacher	[name] is a great leader and facilitates a wonderful learning environment.
WIP-2 Program	175	Teacher	They were very professional and easy to work with and you could tell that they were very invested in giving the teachers everything they needed to bring more physics and engineering project based lessons into our classrooms.
WIP-2 Program	176	Teacher	Wonderful environment to work in with caring supportive personnel.
WIP-2 Program	195	Teacher	Our leaders want to effect change in the elementary classrooms. It was evident in the care they put into planning meaningful experiences for us to take back to our schools.
WIP-2 Program	256	Teacher	Awesome instructors and organizers made everything run smoothly!
WIP-2 Program	277	Teacher	None at this time

Table 22. Comments about IMSP communication

Grant	ID	Survey	Comments about your IMSP communication
MS Program	7	IHE	Changes in leadership in one school district complicated communication.
MS Program	10	IHE	We have received tremendous support from the school partners and that from our participating teachers. However, we need to do a better job communicating the greatness of the IMSP to the broad community through news media and online resources.
MS Program	21	IHE	Use of the media was not part of our proposal. However, we have been successful in getting the word out about the IMSP program. We were oversubscribed, and we need to turns some teachers away.
MS Program	63	IHE	The website is key to this project.
WIP-1 Program	6	IHE	Outstanding!!!
WIP-1 Program	19	IHE	Wonderful communication.
WIP-2 Program	6	IHE	I am always kept abreast of what is happening. Beneficial to those who are concerned about the program.
MS Program	11	Industry	Communication was better in the earlier stages. Less effective & comprehensive (for me at least) more recently
WIP-1 Program	9	Industry	Great communication throughout. A pleasure to work with. It has not been easy to get our work publicized outside the local communities, but the partners all worked hard on this issue.
MS Program	5	School	The districts were surprisingly missing throughout.
MS Program	32	School	Communication and establishment of working relationships with my school district have been poor, but again, this is due to a lack of interest by my school district's leaders
MS Program	39	School	Communication has improved greatly when the University was able to change leadership of the grant.
MS Program	11	Teacher	Communication among professors and students was minimal. It was tough to get answers within an acceptable amount of time.
MS Program	17	Teacher	The lack of genuine communication was obvious, and it was all one sided, the participants were a secondary consideration.

Grant	ID	Survey	Comments about your IMSP communication
MS Program	21	Teacher	Communication could have been better.
MS Program	25	Teacher	A valuable experience!
MS Program	26	Teacher	More confident in lesson planning science inquiry activities.
MS Program	30	Teacher	Leader needs to open a better line of communication for requirements.
MS Program	46	Teacher	Again, I don't feel our district took much involvement. However, [name], the grants person for the district, did take the time and work hard to support the partnership.
MS Program	102	Teacher	When [name] took over, the communication about all issues concerning this Master's program was great.
MS Program	119	Teacher	Our leaders were always quick to respond and solve our problems.
MS Program	144	Teacher	I was the only one from my district. The main communication was with district 150.
MS Program	173	Teacher	Our leaders involved are doing an excellent job of surveying our group, trying to keep us informed, and they are trying their best to meet the needs of the majority of the group.
MS Program	210	Teacher	Felt that communication has lacked during the past 3 years. However, we are the first group and my hope is that these issues are resolved in the future.
MS Program	212	Teacher	We have been using constructive criticism since year one and no changes have taken place. unfortunately, this has deteriorated into adults whining during class which is embarrassing and unbearable. The way in which information is handed down is absurd--it is always last minute and not respectful of individuals lives. No one ever seems to know what is going on! Even professors that are hired are last minute and have no idea what the vision of the program is or what text they are supposed to be using or what the requirements are--ridiculous.
MS Program	243	Teacher	My school was willing and accepted incorporating STEM and IMSP within our curriculum with open arms.

Grant	ID	Survey	Comments about your IMSP communication
MS Program	251	Teacher	More information about resources would be helpful.
MS Program	261	Teacher	I expected greater support from local and state leaders. I got lip talk but no action.
MS Program	262	Teacher	The communication was poor. We were continually bounced from one to another without ever getting a straight answer to our questions.
MS Program	271	Teacher	We have had very limited access to any resources, and communication has improved only as of late.
MS Program	274	Teacher	I believe this is a fabulous program and more can be done to promote what the participants and the professors are doing.
MS Program	280	Teacher	I got the impression as though communication with our IMSP leadership from above was delayed or inconsistent.
WIP-1 Program	18	Teacher	Excellent!
WIP-1 Program	25	Teacher	GREAT JOB.
WIP-1 Program	33	Teacher	Communication was another excellent component of the Grant. I will continue to use the communication and information provided through it long after the Grant is completed.
WIP-1 Program	36	Teacher	Communication was very last minute, everything always worked out.
WIP-1 Program	90	Teacher	none
WIP-1 Program	117	Teacher	Very difficult to get responses from leaders. Some members told one thing, others told something else. Not a clear message to all.
WIP-2 Program	25	Teacher	Again my negative comment is directed to the district I taught in last year. They were not supportive.
WIP-2 Program	48	Teacher	Again, I thought that labs/activities would be provided and gone through at the workshop to use in our classrooms. Blackboard and email with [name] was good and checked every night.
WIP-2 Program	102	Teacher	Well organized.
WIP-2	162	Teacher	Communication is always sent out in a timely manner.

Grant	ID	Survey	Comments about your IMSP communication
Program			
WIP-2 Program	163	Teacher	We are informed of what is expected of us.
WIP-2 Program	167	Teacher	There has always been open communication between the members as well as the members and our respective schools.
WIP-2 Program	239	Teacher	Information provided was vague and not specific enough.
WIP-2 Program	270	Teacher	Not everyone gets information about training and resources
WIP-2 Program	277	Teacher	None to share at this time.

Table 23. Comments about IMSP technical assistance

Grant	ID	Survey	Comments about your IMSP technical assistance
MS Program	4	IHE	I was very pleased with the faculty and staff. They provided an extra-ordinary level of commitment to the graduate program. From the team leader to the secretary, they gave outstanding service.
MS Program	7	IHE	[IHE name] faculty and support systems were appreciated.
MS Program	10	IHE	We are considering enhancing involvement of STEM industries/groups in addition to the university faculty.
MS Program	61	IHE	Now I am satisfied since the new leadership team has been established, i.e., Karen Lind is no longer the PI.
MS Program	63	IHE	[IHE name] faculty are amazing and provide help to the school district beyond the needs of the project.
WIP-2 Program	6	IHE	Students know the resources that are available for them to use in the classroom.
WIP-1 Program	9	Industry	Excellent assistance from the IMSP project staff.
MS Program	5	School	The instructional staff was very good but those Deans and above gave the impression as to they weren't interested in the input of the participants.
MS Program	6	School	Both [name] and [name] have been totally responsive to requests
MS Program	39	School	There seems to be inter-departmental battles about how to approach STEM education. These could have been addressed with strong leadership.
MS Program	5	Teacher	All staff was very professional and very helpful.
MS Program	12	Teacher	Not much has happened in the technical realm.
MS Program	17	Teacher	[IHE faculty name] worked as hard as he could with our group, but overall the staff was not helpful, but often counter-productive or unresponsive. The teaching staff in particular was sub-par, most had no idea how to work with a group of well-educated teachers, or else used the position as a place to pontificate on their own ideas.

Grant	ID	Survey	Comments about your IMSP technical assistance
MS Program	21	Teacher	Not sure what type of technical assistance we got. Majority of the classes were lecture format.
MS Program	25	Teacher	Amazing!
MS Program	26	Teacher	Lesson planning for all my students in using their problem-solving skills in solving solutions to a scenario problem.
MS Program	31	Teacher	Content seemed quite disorganized, almost like the staff was forced into teaching the course (with a few exceptions)
MS Program	46	Teacher	I am not entirely sure what you mean by technical assistance.
MS Program	102	Teacher	Technical support was fine. I never had any obstacles to carry out what I needed.
MS Program	148	Teacher	Some of the faculty did not want to help us. I got the idea that were 'beneath' them in some ways.
MS Program	149	Teacher	faculty and staff was very supportive
MS Program	174	Teacher	Not given any tech teaching on tablets.
MS Program	198	Teacher	We were to use some new equipment for collecting data in experiments, but no instruction was given in how to use it in one course. In a later course, the instructor became aware we did not know how to use it, and he gave demonstrations/instructions for the use of the
MS Program	210	Teacher	Didn't really have any technical issues.
MS Program	212	Teacher	Technology class was AWESOME!
MS Program	228	Teacher	There was much support in technical assistance!! from software to hardware.
MS Program	261	Teacher	The majority of the staff related that they were not properly instructed on their role and had little idea of where the cohort was at.
MS Program	296	Teacher	More 'advice' in terms of direction for final project.

Grant	ID	Survey	Comments about your IMSP technical assistance
WIP-1 Program	25	Teacher	GREAT JOB.
WIP-1 Program	33	Teacher	There were glitches and they were always worked out. We were never left hanging.
WIP-1 Program	62	Teacher	Excellent staff. [IHE faculty name] is a valued resource.
WIP-1 Program	81	Teacher	They were GREAT!!!!
WIP-1 Program	90	Teacher	none
WIP-1 Program	117	Teacher	The leaders do not seem very comfortable with technology themselves, so to be in charge of something involving technology seems a little odd.
WIP-2 Program	39	Teacher	I know that the IMSP faculty is an email away. I like that I have three other members at my school.
WIP-2 Program	48	Teacher	It would have been nice to practice and have activities/labs on what we were shown. We had a little time and not enough computers so everyone had one to work on. Not everyone had the same computer skills.
WIP-2 Program	58	Teacher	It would have been helpful to have more assistance designing our action research projects.
WIP-2 Program	105	Teacher	I felt the wiki page was not user friendly and frustrating to use. The instructions for it were given too quickly for me to understand.
WIP-2 Program	109	Teacher	Faculty and staff were very supportive and were their if you needed help.
WIP-2 Program	124	Teacher	Helpers tried very hard to fix or help with areas in need.
WIP-2 Program	162	Teacher	The staff and teachers involved are highly trained and assist all members of the class to clarify any troublesome areas.
WIP-2 Program	163	Teacher	The faculty and staff are very approachable and know their material.
WIP-2 Program	167	Teacher	I have not needed much technical assistance, but the technical training I have had has been wonderful and thorough.
WIP-2 Program	170	Teacher	I was not sure on the wording in the last statement in this section. Help was always available from the technical assistance. Great support!

Grant	ID	Survey	Comments about your IMSP technical assistance
WIP-2 Program	175	Teacher	They listened to concerns and were flexible.
WIP-2 Program	239	Teacher	We were given iPads but no training on how to use them in the classroom and work towards the objectives we need to meet.
WIP-2 Program	277	Teacher	None to share at this time.

Table 24. Comments about IMSP progress and outcomes

Grant	ID	Survey	Comments about your IMSP progress and outcomes
MS Program	7	IHE	Some teachers from one district do not get along with each other very well even though they teach in the same school in the same school district.
MS Program	20	IHE	As evaluator I help to measure specific progress and outcomes...and will focus on that more precisely in project reports.
MS Program	21	IHE	The teachers have grown significantly in both content knowledge and pedagogy. In this grant we did not have STEM industry partners nor teacher mentors. Nor was accessing new STEM technologies a part of our project.
MS Program	55	IHE	Some of the teachers worked hard to learn the content. Others spent much of their time complaining and indicating that they shouldn't have to take the course. Some of the others talked and disturbed class at times.
MS Program	63	IHE	Teachers are truly changing how they teach.
WIP-1 Program	2	IHE	No endorsement program. Noncredit bearing
WIP-1 Program	6	IHE	Did not lead to endorsement...Noncredit bearing
WIP-2 Program	4	IHE	The Intel Math project is one with the strongest focus on content and the teacher participants are very positive about their experience in spite of initial 'gap' surprises! ROE 45 should be commended on getting this program to IL IMSP.
WIP-1 Program	7	Industry	The program has also improved career and technical education instruction.
MS Program	32	School	mentoring needs to be improved. This program has had no discernible systemic impact on my school and school district

Grant	ID	Survey	Comments about your IMSP progress and outcomes
MS Program	5	Teacher	Since I am the only participant in my building it is hard to tell at this point.
MS Program	5	Teacher	I have learned a great deal that I believe I will be able to incorporate into my teaching practice.
MS Program	17	Teacher	I do not feel I gained any new teaching techniques, or new technology for my students, because we have not been exposed to these things. We wrote papers, we did labs that I have done for years, and we read an overabundance of repetitive content knowledge, that for any person who studies or teaches these subjects, is not new, but old information. If it were not for the support of fellow classmates, this would have been a terrible three year experience. We taught each other more about the science instruction process than any of our professors or seminars.
MS Program	21	Teacher	What kind of endorsement are we talking about? I didn't know there was a 'STEM' endorsement. We did collaborate within our school and with the Instructors from the other school.
MS Program	26	Teacher	I believe the STEM program helps students to make connections to their real world.
MS Program	30	Teacher	I now do a STEM project with each of my classes every year. Airplanes with 6th, Dragsters with 7th and Bridges with 8th.
MS Program	31	Teacher	I wished that we had more opportunity to work with industry experts, either through the classes or internship opportunities. I really enjoyed the one internship that I was able to complete.
MS Program	41	Teacher	I firmly believe that this IMSP cohort has made me a better mathematics teacher for my school.
MS Program	46	Teacher	The industry experts for the summer courses really helped me see some of the applications for what we teach in the real world.
MS Program	101	Teacher	I have been able to provide quality methods resources to my school as a result of my participation.
MS Program	102	Teacher	I gained a lot of content throughout this Masters' experience. We all worked very well with each other and our experiences enriched our knowledge.

Grant	ID	Survey	Comments about your IMSP progress and outcomes
MS Program	112	Teacher	Within our program, it would have been nice to be offered additional classes, even if not at a discounted rate, in order to obtain endorsements in mathematics and science teaching. This would have added to my ability to teach math and science in a regular education setting.
MS Program	119	Teacher	The classes have definitely helped my math and science lessons to actively engage the students at all times.
MS Program	137	Teacher	The state earth science certification test requires a knowledge of physics, chemistry and biology. We were not prepared for that test.
MS Program	140	Teacher	When I took the certification test, I found there to be a large portion of Life Science, which I was not prepared for. I feel that Life Science needs to be integrated into the program more if we are to be tested on it.
MS Program	164	Teacher	I wish there were more from my school who are participating!
MS Program	174	Teacher	No, new content knowledge. Any tech resources I was given I do not have the technology at my school district to use with. Even though in other surveys we had indicated so but yet still received tech that just sits in a cabinet. A Promethian table sitting in a cabinet. And there are other teachers that have not used it b/c they don't have tech to use it with or not given training on how to use it.
MS Program	212	Teacher	There was no need to improve--we teach what is being taught at the college in our classes every day! Any improvements are due to the usual self-reflection and collaboration with other teachers, not due to this program.
MS Program	218	Teacher	I would prefer to have taken more content classes rather than instruction.
MS Program	243	Teacher	Few of these were difficult being that we were the first STEM masters but we mentored with each other.
MS Program	251	Teacher	My school does not support STEM in the classroom. They are unwilling to support additional training.
MS Program	261	Teacher	I do not believe that I have sufficient knowledge to take back to my classroom. Very little was related to STEM.
MS Program	271	Teacher	We have had no access to new or STEM related instructional resources aside from the 'Private Eye' training received at the beginning of the process. There has been no access to or interaction with mentors or other professionals in STEM related fields. This program has not improved my instruction and has been a waste of time.
MS Program	272	Teacher	As stated above, this program has benefited our district's teachers in enhancing content knowledge and also improving teaching strategies so students learn at a conceptual level.

Grant	ID	Survey	Comments about your IMSP progress and outcomes
MS Program	274	Teacher	The middle school endorsements should have been included.
MS Program	277	Teacher	I would ask that you include in the future the 2 middles school endorsement classes to the program. Many of the teachers participating to not have this endorsement and need it. It would have been nice to have it included.
MS Program	280	Teacher	We collaborated with one expert at the Morton Arboretum who was not a STEM expert.
MS Program	295	Teacher	I feel that the middle school teachers should not have been part of this program. Their lack of science knowledge really held back some of the classes (for example, Biochemistry) and how detailed we could get because they did not have the proper knowledge base to be successful.
WIP-1 Program	18	Teacher	Math and reading scores grew tremendously due to the workshop.
WIP-1 Program	25	Teacher	GREAT JOB.
WIP-1 Program	33	Teacher	I have gained and applied more knowledge from this Grant than any other source of professional development. It has moved toward a STEM goals I never had before. My students are the real recipients.
WIP-1 Program	36	Teacher	Incredible variety of mentors and earth science professionals around the country that we had access to.
WIP-1 Program	62	Teacher	Administration does not value STEM.
WIP-1 Program	89	Teacher	My knowledge of technology has increased dramatically.
WIP-1 Program	90	Teacher	none
WIP-1 Program	117	Teacher	There should have been a more collaborative approach to everything, including purchasing the materials. We are very isolated from one another. I have no idea what others are doing. I have no idea what they chose to purchase or why. I may have made better choices for myself if I had been able to bounce my ideas off someone else.
WIP-2 Program	16	Teacher	I felt that I learned a lot and what I knew about , it was reinforced.

Grant	ID	Survey	Comments about your IMSP progress and outcomes
WIP-2 Program	23	Teacher	more access to mentors would be useful to me and my students
WIP-2 Program	33	Teacher	I will be implementing it this fall.
WIP-2 Program	39	Teacher	I not sure how much help my school administrator will be at this time. It will take time to assess the improvements in science and math instructions at my school.
WIP-2 Program	48	Teacher	I gained some new knowledge but there was outdated information (the book)but more activities/labs and time were needed.
WIP-2 Program	62	Teacher	Loved the combination of these 2 courses-best I have ever taken!
WIP-2 Program	65	Teacher	This was very beneficial in increasing my mathematics knowledge.
WIP-2 Program	96	Teacher	We did not discuss anything about endorsement or certification.
WIP-2 Program	105	Teacher	I wish we could have been allowed to select the resources and materials we were given. Some items I received were expensive and I will not use them. Seems to be a waste when there are other materials I could have used.
WIP-2 Program	117	Teacher	While no actual mentors were assigned, participants could count on others in the group for mentoring as needed
WIP-2 Program	144	Teacher	This grant is the only way I will be able to obtain my Master's Degree and I'm very very grateful for it!
WIP-2 Program	160	Teacher	I have learned a lot about new technology to use in my classroom but do not have the technology available in my school and classroom. I would be able to better use what I have learned if I were able to use the technology that I have learned about.
WIP-2 Program	162	Teacher	I'm confident that these workshops will improve my teaching techniques and hopeful that test scores will reflect this.
WIP-2 Program	167	Teacher	I am so pleased with how much stronger of a math and science teacher I feel I am now thanks to this program.

Grant	ID	Survey	Comments about your IMSP progress and outcomes
WIP-2 Program	169	Teacher	This initiative is a powerful shot in the arm for our small rural district!
WIP-2 Program	174	Teacher	Due to these districts being located in rural communities, it is difficult for teachers to have access to the materials that are offered at the [IHE name] facility. It is difficult to pick up and return materials due to the driving distance.
WIP-2 Program	175	Teacher	This workshop made me excited about getting back to school so that I could try some of these lessons. I know my students are going to love them. It also made me much more aware of setting up my lessons so that the students use critical thinking skills instead of just being fed facts.
WIP-2 Program	256	Teacher	I learned so much about ME and math.
WIP-2 Program	277	Teacher	None at this time

Table 25. Comments about IMSP Sustainability

Grant	ID	Survey	Comments about your IMSP Sustainability
MS Program	10	IHE	The IMSP should be continued, given the changing needs of classroom teachers in both content and instructional strategies.
MS Program	13	IHE	Most of us are teachers and know how to manage the classroom and etc. The only problem, to be honest, is to master the materials we may teach.
MS Program	21	IHE	Through this project, we created a new Master of Science in Mathematics Education which is an official program of the university. We intend that the program will continue after the expiration of grant funds. However our tuition is very high for CPS teachers to afford. We are seeking other funding sources.
MS Program	28	IHE	We have established relationships and policies that pave the way for future IMSP activities and would make it easier to do this a second time. But we have learned that most teachers who need this program simply can't afford UI's high tuition, and they need the tuition subsidy that the grant provides in order to afford the program. There are also hidden costs for them -- child care, giving up summer and after-school tutoring/teaching opportunities, etc. The tuition subsidy that the grant provided made all the difference to the teachers. They are very pleased that they were able to get a UI degree, and it just couldn't have happened without the grant. So while we are in a better position at [IHE name] to offer a similar program again, we don't feel like we would get a solid cohort of teachers from a high-needs district, without the tuition subsidy. Additionally, if we are to evaluate the program in an ongoing manner, we need grant funds to support that.

Grant	ID	Survey	Comments about your IMSP Sustainability
MS Program	32	IHE	I have answered the above questions with regard to my primary employer: [IHE name]. My own university ([IHE name]) is not really involved in, and doesn't really care about, this program most of the time. [observatory name] will probably teach similar courses regardless of involvement with [IHE name]and/or IMSP.. [name](of The [IHE name]) contributed to and benefited greatly from the IMSP program. [name] will continue to participate as long as [IHE name] seriously wants our participation, and as long as [IHE name] doesn't stop our participation. [observatory name] will probably teach similar courses regardless of involvement with [IHE name]and/or IMSP.
WIP-2 Program	3	IHE	These Math-Science partnerships have been excellent. I think they have benefited the teachers, and their students in many ways.
WIP-2 Program	4	IHE	I think teachers, if empowered with strong content and pedagogy, are by themselves a force of sustainability for an IMSP. We are also seeking NSF and other grants to provide continued support for the Math/Sci teachers in the region. The IMSP activities certainly paved the way for our recent Robert Noyce Grant award.
WIP-1 Program	6	Industry	The SciTech museum is a business partner.
WIP-1 Program	9	Industry	We intend to continue collaborating with teachers and the ROE to facilitate educator-industry interaction and collaboration.
MS Program	5	School	Since they have not been involved in the process or even requested an interview I can't determine what benefit they stand to gain or what they plan to do with this IMSP project.
MS Program	24	School	I basically know next to nothing about the IMSP program as a building principal. I'm not even sure what to do with this survey other than I was instructed to fill it out. Sorry, but I have nothing to share. It never comes up in my daily work and I never hear about it.
MS Program	30	School	Our district has reached out to program participants to take on more leadership roles.
MS Program	32	School	It remains to be seen if this IMSP will be sustainable without grant support, but the complete lack of interest shown by my district leads me to believe it will not.
MS Program	39	School	We have a STEM education middle school and one of our cohort is going to be the STEM coordinator.
WIP-1 Program	3	School	At this point it is dependent on continued grant funding.
MS Program	5	Teacher	Great program we need to keep this going.

Grant	ID	Survey	Comments about your IMSP Sustainability
MS Program	12	Teacher	Again the district has not been involved in the IMSP on a student(teacher) level, so it is difficult in knowing what they are thinking. Our science program has been reduced to another form of reading class which does not promote science inquiry.
MS Program	26	Teacher	I would recommend this cohort program for any teacher wanting to invest their time in learning how to teach science with instruction models similar what used in the workplaces.
MS Program	30	Teacher	Need new leadership
MS Program	31	Teacher	Major curriculum changes must be made to make the program worth the time, energy, and money.
MS Program	41	Teacher	It would be a shame if [IHE name]'s IMSP program dissolved. Our student's test scores show that.
MS Program	42	Teacher	Being able to participate in the IMSP has provided me with many worthwhile experiences I would not have had otherwise ie. attending NCTM, ICTM, access to university and nationally recognized researchers and highly knowledgeable mathematicians.
MS Program	49	Teacher	I understand this is a program designed for middle school endorsement however, I believe it would strengthen the program to have a high school equivalent for teachers already certified.
MS Program	54	Teacher	All of the professors were very aware of the diverse learners in his/her class. These professors then tailored the content and the instruction in order to meet our needs. They all realized that we had full-time jobs, families, and other commitments. I believe every professor tied to this program wanted each and every one of us to be successful.
MS Program	102	Teacher	If everything that has been promised (Masters + math endorsement)is given to me, then I have to say that this program is reliable and it should continue with committed participants to it.
MS Program	112	Teacher	I have resigned from my position as a special educator (teaching mathematics primarily) in order to be a stay at home mom to my son. If I would continue teaching, I feel as though I have the support necessary to continue with what I have learned throughout the IMSP. My only suggestion for improvement would be to create a strand of the master's degree that focuses on math and one that focuses on science because not every math teacher is a science teacher and vice versa.
MS Program	125	Teacher	My district lacks hands on materials to implement science fully.
MS Program	152	Teacher	My school district [district name]did not give me anything.
MS Program	174	Teacher	This program has not given me any new ideas and resources to help myself as a teacher or help my school district.

Grant	ID	Survey	Comments about your IMSP Sustainability
MS Program	200	Teacher	My district integrates technology in all classrooms anyway - not related to IMSP strategies, nor are they considered IMSP materials.
MS Program	210	Teacher	I believe this could be a great program and math/science teachers need a program like this one. However, I do not feel that our particular program was run in such a way that I benefitted like I should have. I have a hard time coming up with what I gained after 3 years. I don't feel like the class selection was conducive to the overall goal of Teacher Leadership or enhancing my teaching of my content area.
MS Program	212	Teacher	I would love to help make this program better--I whole heartedly agree with the original vision--the implementation was just way off the mark.
MS Program	227	Teacher	Continue to provide courses that focus on teaching strategies and content knowledge.
MS Program	243	Teacher	If we as a nation want to improve our educational track, it is imperative to continue educating teachers using IMSP strategies and STEM.
MS Program	248	Teacher	I believe that we are on the right path, but we have just started to integrate math and science the right way
MS Program	261	Teacher	If the mistakes and red flags are corrected in this program, it has the potential to be an influential resource. It did not reach its full potential in the condition it is in now.
MS Program	280	Teacher	I have already benefited from the IMSP and I am confident I will continue to experience growth after the program has ended.
MS Program	293	Teacher	IMSP is a great opportunity for teachers to really improve their own teaching as well as their school districts.
WIP-1 Program	18	Teacher	Student engagement is huge!
WIP-1 Program	33	Teacher	I have enrolled in another IMSP activity due to the success of this participation. I am grateful for the opportunity! I truly hope my district continues to support these strategies.
WIP-1 Program	58	Teacher	Please continue and expand this program. It has proved extremely beneficial to my students. My school district supports this completely.
WIP-1 Program	68	Teacher	I agree that the IMSP should be continued, however I think some things could be changed to make it more effective and directly more exclusively to math and science teachers.
WIP-1 Program	69	Teacher	I really like and enjoyed the classes. I was able to get many worthwhile activities for my students and many free supplies my school district would not have been able to give me. I cannot take the last class, because it will put me all the way over on the pay steps (maximum) - I am not tenured yet and don't want to lose my job over the raise.

Grant	ID	Survey	Comments about your IMSP Sustainability
WIP-1 Program	80	Teacher	The math teacher was great; however, the science teacher's objectives were unclear. A better science teacher would make the program better.
WIP-1 Program	89	Teacher	I have acquired skills and materials that will stay with me the rest of my teaching career.
WIP-1 Program	90	Teacher	none
WIP-1 Program	91	Teacher	Budgets are tight, but I have support, so I will be able to continue what has been added, but may not be able to continue to add activities.
WIP-1 Program	97	Teacher	The amount of additional work has increases in the past couple of years, to the point that it almost becomes a burden....I agree that the participating teachers should have to show some proof of implementation and should be held accountable...the amount was reasonable the first time I participated and has now become a bit of a burden. We are already very busy as teachers.
WIP-1 Program	114	Teacher	[district name] is no longer in control of itself. With the state takeover I am unsure what participation will be like in the future.
WIP-1 Program	117	Teacher	This just needs better organization. I think in theory this was a great idea, but in actuality there were some issues.
WIP-1 Program	127	Teacher	I hope that other teachers from our district are able to participate in future workshops and training.
WIP-2 Program	1	Teacher	I think it's critical that IMSP continue.
WIP-2 Program	16	Teacher	The class was intense and the materials received will benefit me as a classroom teacher. The equipment will engage students and they will be motivated to learn more.
WIP-2 Program	23	Teacher	I appreciate that this grant has allowed for participation over two years. This has allowed me to keep learning more effective ways to implement the concepts and technology obtained through the grant.
WIP-2 Program	25	Teacher	I am in a new district and not sure how much they will support me.
WIP-2 Program	34	Teacher	It is too early to tell. I have not implemented any learning cycles yet. Thus, I cannot predict how well received integrating [name] into my curriculum will be. The current emphasis is on standardized test scores. Thus, the continued integration of these strategies will be evaluated by whether or not I can keep, or improve, our school's standardized test scores.
WIP-2 Program	39	Teacher	My district is concerned with making AYP. They are also behind in Math, Science, and Technology. The materials IMSP supplied allows limited instructions. It is a start!!!!!!!! A start that I am thankful for. I will need to explore other possible resources.

Grant	ID	Survey	Comments about your IMSP Sustainability
WIP-2 Program	48	Teacher	Again the 4 lesson plans cannot always fit into your teaching assignments. We should have been provided with many activities (and try them in the workshop) to choose what would be the best fit to our school's curriculum. Some parts were good, other parts need to be improved. The availability of the kits is good and will be nice to be able to use them in our classes.
WIP-2 Program	57	Teacher	Financing is currently a big problem. I need a lot more immediate technology in the classroom and I am not getting a response from administration in the building.
WIP-2 Program	62	Teacher	Like I said earlier-truly my favorite course combo I have taken!
WIP-2 Program	65	Teacher	I would encourage others to participate in this program. It is worth all of the frustration.
WIP-2 Program	93	Teacher	With this being a one year grant, I'm not sure I'll be able to participate again. I'd also like to let other teachers have the opportunity to try it!
WIP-2 Program	112	Teacher	I only wish our district had more money/resources so I could get more training and supplies for my classroom.
WIP-2 Program	117	Teacher	I will strongly consider participation in IMSP's future activities if it works into my schedule
WIP-2 Program	122	Teacher	Some access to computer software and tools can be cost prohibitive for my district.
WIP-2 Program	160	Teacher	Once again, the materials that I received will be used in my classroom. However, I do not have access to a lot of the technology discussed and taught during the grant. Teachers used promethian boards, elmos, computer projectors, and computer programs to enhance math and science lessons and I have a laptop now, but no internet access at school and none of the other sources of technology. Students have access to 1 computer with internet access.
WIP-2 Program	162	Teacher	I will continue to support workshops I feel will improve my classroom.
WIP-2 Program	167	Teacher	Yes, everything I have received have been wonderful and well worth the time and effort put in.
WIP-2 Program	169	Teacher	Don't have the resources...they are on order pending grant approval at the SIUE and district levels
WIP-2 Program	193	Teacher	The math and engineering class were very beneficial to me as a teacher of both subject areas in the elementary level.
WIP-2 Program	245	Teacher	Just meet today with a peer to plan the curriculum.

Grant	ID	Survey	Comments about your IMSP Sustainability
WIP-2 Program	256	Teacher	The more that participate within a district the better for communication and vertical alignment. It should MOST definitely be continued.

Table 26. Other Comments about participation in the IMSP during this year of implementation

Grant	ID	Survey	Comments about participation in the IMSP during this year of implementation
MS Program	4	IHE	This year seemed the longest most intense year for the teachers. Earning a content-based masters has a new meaning for many of them. It takes a lot of commitment on their parts to stick to the program and keep up rigorous university academic expectations.
MS Program	7	IHE	Very valuable experience. Teachers learned about many emerging technologies and improved their math/science knowledge and skills.
MS Program	8	IHE	Ended even better than I ever expected
MS Program	14	IHE	NO
MS Program	15	IHE	The experience of participating in this IMSP was very rewarding: (1)Seeing the teacher participants develop as a supportive professional community of middle school teachers of mathematics, and (2) our presentations at the MSP regional conference in Baltimore and at AERA in New Orleans provided us with affirmation of the high quality and effectiveness of this IMSP.
MS Program	21	IHE	Participation in this IMSP has been very rewarding. It was a really partnership between the district, our College of Education, and our College of Liberal Arts and Sciences. The IMSP drew us together to create an extremely valuable program that will have impact on students for literally decades (as many of the teachers will continue to teach for 10 or more years).
MS Program	28	IHE	Actually - these final questions ask about the 1st year of implementation, but I'm answering more generally, since this is our 3rd year.
MS Program	32	IHE	My primary job is as a faculty member at [IHE name] and Director of [observatory name]. My FUN job has been teaching these teachers through the IMSP grant to [IHE name]/[IHE name].
MS Program	42	IHE	After participation in both the 'degree program' model and the 'institute/workshop' model, I see the degree program (or at least OUR degree program) is far more effective in deepening teacher content knowledge and promoting lasting change in classroom practice.
MS Program	44	IHE	it has been a good experience to work with teachers of different background
MS Program	47	IHE	This was not our first year, it is our last.
MS Program	51	IHE	Again, this has been an amazing experience for me as an educational leader. I am so proud of our work and will do whatever it takes to sustain our work in STEM education.
MS Program	52	IHE	We are working on a mathematics and Science Center for the Campus. Exciting!!!
MS Program	63	IHE	Very strong IMSP project with great camaraderie among the teachers.

Grant	ID	Survey	Comments about participation in the IMSP during this year of implementation
MS Program	65	IHE	This is the second year of our IMSP program. There have been great benefits to the teacher.
WIP-1 Program	2	IHE	Made my career. I learned so much from organizing the workshop model with the partners from Industry and school districts...
WIP-1 Program	16	IHE	I have been involved for several years and it has provided great benefits to the teachers, schools, colleges and faculty.
WIP-1 Program	17	IHE	The IMSP has been very beneficial for the students, teachers, and university faculty involved. The excellent structure that [name] has put together has allowed us to successfully meet the IMSP goals.
WIP-1 Program	19	IHE	We are honored to be a part of this initiative.
WIP-2 Program	3	IHE	I like the way the ROE organized things, recruited, and advertised. As university professors, we could focus on the content.
WIP-2 Program	4	IHE	I enjoyed working with teachers and other RoE professionals. Together, we are understanding the needs better and develop strong programs and projects to meet the challenges of K-12 education in math (and science).
WIP-2 Program	6	IHE	I hope that this program will be available in the future.
MS Program	3	Industry	No.
MS Program	7	Industry	There is a need for more frequent communication among the mentor, teacher (graduate student), and university personnel.
MS Program	8	Industry	Use of online learning was a forward-thinking approach to bringing STEM experts to the teachers.
MS Program	9	Industry	I believe that IMSP has made a world of difference and the ripple effect has helped to bring it to others within the district as well.
MS Program	11	Industry	I was involved most directly & actively during the planning & initial implementation stages. I think this survey sounds like it is meant for participating teachers. I am not one. I am an 'industry' partner
WIP-1 Program	5	Industry	Great experience.
WIP-1 Program	6	Industry	My position at the SciTech museum where our organization participated as a business partner in this program, followed the conclusion of this program. As a result, my understanding and ability to comment is limited at best.
WIP-1 Program	7	Industry	This project has sparked a good deal of student interest.
MS Program	5	School	District levels need to step up their involvement, support, encouragement and contact with all members. Science is treated as an orphan child in our district.
MS Program	6	School	Wonderful opportunity

Grant	ID	Survey	Comments about participation in the IMSP during this year of implementation
MS Program	12	School	This has been a wonderful program-thank you for the opportunity!
MS Program	16	School	This was a great program for our District. I could not have been happier with the relationship we built with George Williams and the education our teachers received from this program.
MS Program	17	School	None
MS Program	26	School	No
MS Program	31	School	This was not the first year of implementation in our district.
MS Program	39	School	It was rough from the start because of the coordinator of the grant at the University level. We have felt strong support over the past 6 months to rectify the problems. We had many plans that would have been amazing if implemented.
WIP-1 Program	3	School	No.
WIP-2 Program	1	School	No
WIP-2 Program	3	School	Our participating teacher thoroughly enjoys working with the tools that were provided.
WIP-2 Program	4	School	Not at this time.
MS Program	1	Teacher	a little rocky or rough around the edges but it has improved. some of the professors did were too flexible with other members of the cohort. Should have told them to meet the mark or leave!
MS Program	4	Teacher	N/A
MS Program	5	Teacher	The staff at [IHE name] has been both professional and extremely helpful. They have made this program a success.
MS Program	8	Teacher	The effort I needed to put forth in the program these past 3 years is well beyond what was explained to me during the first year of the program.
MS Program	9	Teacher	I've said this on a few surveys so far, but the largest weakness to this program is the fact that some members of the cohort have a strong background in science, and others do not even know enough to excel in a high school science class. Segregating these populations of students by ability would allow this program to infinitely more effective and meaningful to all involved. Any negative response above is mainly due to this disconnect.
MS Program	11	Teacher	no

Grant	ID	Survey	Comments about participation in the IMSP during this year of implementation
MS Program	14	Teacher	none
MS Program	18	Teacher	Before entering this program I had no idea how beneficial it would be to me. I teach science and math, but needed a better foundation in science concepts. The SMART and PIASCS programs have given me a better understanding and enjoyment for what I teach, as well as a resource for interesting, hands-on and technological lessons in my classroom that have motivated my students as well.
MS Program	19	Teacher	Everything was a PowerPoint! I can read for myself. Zero outside trips into the STEM areas.
MS Program	20	Teacher	No
MS Program	22	Teacher	Integrate Education Methodology in course(s) scheduled on the regular program rather than as weekend workshops
MS Program	23	Teacher	I have enjoyed myself.
MS Program	24	Teacher	So. Frustrating. ...and no one seems to be listening.
MS Program	25	Teacher	Fantastic!
MS Program	26	Teacher	I would of liked to classes on math and geology. The statistics class was okay.
MS Program	27	Teacher	I have been able to apply what I have learned into my own classroom. I believe this program is already making me a better science teacher.
MS Program	30	Teacher	Classes and school work were difficult to do during the school week.
MS Program	31	Teacher	I would have rather had more of a variety of staff. We ended up with the same professors multiple times. This wasn't necessarily good considering that the quality of instruction wasn't great.
MS Program	32	Teacher	no
MS Program	39	Teacher	The program was very challenging, but I learned a lot.
MS Program	41	Teacher	This is the third year of implementation.
MS Program	49	Teacher	None at this time.
MS Program	52	Teacher	The action research felt very rushed. I would have liked to work on the intervention for a year, not just two weeks.

Grant	ID	Survey	Comments about participation in the IMSP during this year of implementation
MS Program	54	Teacher	I did not like getting a class syllabus in February. The second half of this year was already packed with the action research project and the calculus class. I felt defeated once this late syllabus was distributed.
MS Program	56	Teacher	It has been a great program that has help me understand and see other ways that math could be taught to students.
MS Program	62	Teacher	[IHE faculty name] and [IHE faculty name] are patient and understanding. They took care of us as a group and as individuals. Their leadership and dedication was excellent, and I would highly recommend this program.
MS Program	65	Teacher	My understanding and implementation of mathematics content and instructional practices have increased tremendously.
MS Program	67	Teacher	Our professors displayed genuine concern for us a human beings first, then teachers and students. I strongly feel that they encouraged us to do our very best and get the most out of this wonderful program and partnership.
MS Program	68	Teacher	As a teacher, I am still a life-long learner and appreciate all that the IMSP has enabled me to do to continue to strengthen my classroom.
MS Program	69	Teacher	I think it was great, however I feel some changes could be made to the structure of some of the classes. The Algebra Initiative was amazing and the professors were incredibly knowledgeable and helpful.
MS Program	74	Teacher	no
MS Program	75	Teacher	Excellent program at [IHE name]!!!
MS Program	77	Teacher	none
MS Program	85	Teacher	I feel the program is very useful and applicable to myself and my students.
MS Program	94	Teacher	n/a
MS Program	97	Teacher	This was a wonderful program. I learned and wealth of information and have a greater knowledge of how to integrate math and science.
MS Program	99	Teacher	No, I enjoyed the program.
MS Program	100	Teacher	N/A
MS Program	102	Teacher	Everything was great. I obtained many resources to make myself a better teacher.
MS Program	112	Teacher	I feel as though my participation has greatly influenced my teaching style and my students' engagement in lessons presented in the classroom. Even my students were excited on nights that I had classes because they were anxious to 'learn' what I learned the previous night in class.
MS Program	118	Teacher	Very good science classes needs more math classes.

Grant	ID	Survey	Comments about participation in the IMSP during this year of implementation
MS Program	119	Teacher	I found this to be a very valuable experience and would definitely recommend the program to other teachers. I am thankful I was able to participate.
MS Program	121	Teacher	Great [program for new and tenured instructors
MS Program	124	Teacher	What an amazing program, I am so lucky!
MS Program	126	Teacher	No
MS Program	141	Teacher	The amount of work this year was very difficult to do at my best level while teaching full-time and taking care of my family and other obligations as well.
MS Program	156	Teacher	Some of the work was scheduled due too close together so it was hard to keep up with it and all my duties as a teacher full time. I think some due dates need to be spread out especially in MST 650.
MS Program	158	Teacher	I have learned a lot and truly enjoyed the program. It has enhanced my instructional abilities while improving my content knowledge.
MS Program	162	Teacher	Not quite what I expected, but not out of reach.
MS Program	163	Teacher	no
MS Program	164	Teacher	I think my students and I have greatly benefited from my increased knowledge and ideas learned from the IMSP.
MS Program	167	Teacher	Sometimes I don't feel like our opinion matters.
MS Program	168	Teacher	This has applied very little my actual teaching career.
MS Program	172	Teacher	no
MS Program	173	Teacher	I feel very fortunate to be a part of this program.

Grant	ID	Survey	Comments about participation in the IMSP during this year of implementation
MS Program	174	Teacher	This program was targeted for low income districts that have low PSAE scores. We were told that this program would give us new ideas, methods classes, resources, strategies to help my students raise scores. I have not and will not receive that in this program. Please show me how taking Calculus based Statistics or Proof based Calculus will help my students with their arithmetic and Algebra skills? I was told that this program would help with low level to average students in Alg 1 and Geometry. It is just an upper level math graduate course that is NOT beneficial for a high school teacher. This program is a waste of federal money and should be drastically changed or cancelled. I would not recommend this program to anyone considering starting it. We have had 4/ 30 or so students drop the program since the beginning b/c it has been so frustrating and nothing gained from it. There are at least 4 to 6 out of 26 remaining others that would like to drop it or see the program cancelled. Frustrating can't even describe the feelings of some of the participants.
MS Program	176	Teacher	I find this survey very oddly worded. I am not sure what you were asking on many of the questions.
MS Program	189	Teacher	I think this was well worth the time...it has improved my instruction.
MS Program	190	Teacher	This has been an outstanding opportunity for our University and for me as an educational leader.
MS Program	198	Teacher	no
MS Program	199	Teacher	Poor quality
MS Program	200	Teacher	The 'internships' were a bit of a let-down. I feel I have the education and mathematical knowledge to work 1 on 1 doing an internship at a local lab or business. We were told at the beginning that we would be able to choose, and made to believe that it would be a summer internship...which turned out to be a 1 week field trip. The reason we couldn't do a full summer internship is because we were also expected to complete two courses during the mornings that summer. We should be given more time for the internship...maybe 1 summer class and then a month-long internship.
MS Program	202	Teacher	Content courses need to be split between middle school and high school teachers but I really think the other courses should be kept mixed.
MS Program	203	Teacher	No
MS Program	209	Teacher	no

Grant	ID	Survey	Comments about participation in the IMSP during this year of implementation
MS Program	210	Teacher	If the program wants to create Teacher Leaders then they need to make that a focus. Besides our first class the words teacher leader haven't been part of the program at all. The content classes that were supposed to help me be a leader back at my district were never taught as if I was a teacher already. I felt like I was in a very basic undergraduate class. I never felt like I was looking at the lessons from the perspective of a teacher. I did feel like I was in an undergraduate class (to be honest it was even easier than that). The class selection outside of the content needs to concentrate on the things that teachers can truly lead. Have a grant writing class or a mentoring class. Something that I can actually bring back to my district. Even an educational law or negotiations class would help me be a leader. Then the content classes could help me lead in the math classroom (if taught as if I knew the content and wanted to explore how to teach it better). There are so many great things that a program like this can offer. Unfortunately I don't feel that our particular program hit the mark on this one.
MS Program	211	Teacher	Thank you for offering this program free of charge. I do appreciate all the effort and hard work you put into this program.
MS Program	217	Teacher	This program was a joke and waste of time. The education courses were a waste of time. The chemistry courses were not designed to help me utilize any information in my classroom. The only value is that I get credit for the hours and will receive a pay raise.
MS Program	218	Teacher	Great group of teachers - a much needed program!
MS Program	220	Teacher	I believe this is the last year of implementation
MS Program	222	Teacher	I am extremely happy with the way the program has been run and what has been available to me in terms of assistance and learning.
MS Program	226	Teacher	I would not be able to do a program if it was not online. IT would be easier to take in person but this offers good flexibility.
MS Program	227	Teacher	IMSP should continue the focus on research studies that are relevant to teacher as practitioner and researcher.
MS Program	233	Teacher	This was, by far, the most stressful year for the program. I would like to see teachers taking no more than a single class at a time. However, I'm not sure I would have been excited about continuing for another year, so perhaps this was best.
MS Program	236	Teacher	Communication and quality instruction were greatly lacking during this year of implementation. Most of the professors were unaware they were teaching this type of class until the week, even day before starting class. Resources needed to complete projects were not fairly distributed, nor done so in a timely manner.
MS Program	239	Teacher	Excellent program and opportunity
MS Program	240	Teacher	The most positive aspect that I've had was helping to spread STEM ideology through my school. Also, working professionally with Dr. Merrill is a great pleasure due to his level of expertise and his level of consistent motivation and enthusiasm for content and direct student learning.

Grant	ID	Survey	Comments about participation in the IMSP during this year of implementation
MS Program	242	Teacher	The focus of this entire IMSP was on Science and Math teachers becoming Technology teachers, not the other way around. I felt the entire time that my influence as a Tech Ed. teacher was diminishing or not important.
MS Program	248	Teacher	No
MS Program	249	Teacher	no
MS Program	253	Teacher	Multiple opportunities are available to those who participated.
MS Program	256	Teacher	none
MS Program	261	Teacher	I did not feel the instruction, except for one instructional leader, was of the highest quality. It was obvious that there was not the integrity of leadership that I was hoping to find.
MS Program	262	Teacher	The communication was the biggest downfall to this program. It sounded really good at the orientation but many of those promises were not met. I think the person that was in charge had high hopes but did not have the skills to organize the grant in an effective way.
MS Program	270	Teacher	The classes that we took did not help me to become a better leader in math or science. The math classes did not relate to math that I teach.
MS Program	271	Teacher	When I began this program, I was extremely excited about the possibilities and the potential for improving instruction. I am leaving with an overwhelming feeling that I wasted my time. The courses did little to nothing to improve my instruction. A majority of our coursework was not cohesive or relevant to our needs. Our district personnel that provided support for this cohort had to do much more leg work and clean up for the university's leadership than should have been necessary. Multiple colleagues failed or were not following through on their commitments for our classes, however, they were allowed to continue to participate in the cohort. Additionally, nearly a year ago, we were given a budget and asked to gather a list of materials that would be coordinated with our research projects. Except for a few individuals, no one has yet to receive the materials that were connected to the research they are already supposed to be conducting. The biggest irritation for me in regards to this program is that I began wanting to improve my teaching and challenge myself, and I am leaving frustrated, exhausted, and exasperated that something like this cohort is allowed to happen. I submitted my IRB ahead of the deadline and followed through on all of the questions that were asked of me following my submission. However, somehow my IRB was 'lost,' and there was no recourse for me. I am left having to abandon a research proposal that I was fully invested in to complete a literature review that I could care less about. Irritation and disappointment do not come close to expressing my emotions about this program.
MS Program	272	Teacher	It was an overwhelming amount of work at times while teaching full time. If you got through the work, the program overall was beneficial.

Grant	ID	Survey	Comments about participation in the IMSP during this year of implementation
MS Program	273	Teacher	Loved the instructors for the most part. It was an outstanding experience.
MS Program	274	Teacher	I have had to continue working with an individual who should have been dropped from the program. Because of this, I have had my work load increased dramatically. It is not fair that an individual receives a Masters on someone else's back.
MS Program	278	Teacher	There needs to be a more solid explanation of what we can expect, how everything will work, how we will be considered 'highly qualified', and there needs to be better follow thru on the core content classes that were to be offered.
MS Program	280	Teacher	It seemed as though communication through my IMSP coordinator and our cohort was slowed because of communication from above.
MS Program	285	Teacher	None
MS Program	286	Teacher	No
MS Program	287	Teacher	I wish that the Biology content courses were more demanding. I feel like I have not learned that much Biology content during the program.
MS Program	299	Teacher	Well worth the time and effort! It was a great opportunity!
WIP-1 Program	4	Teacher	I love having accessibility to others who do teach in these fields as the 'experts'.
WIP-1 Program	8	Teacher	I learned a great deal and met some outstanding professionals.
WIP-1 Program	18	Teacher	Words cannot express the benefits I have gained.
WIP-1 Program	21	Teacher	I have greatly valued the experiences and opportunities that I have benefited from this program
WIP-1 Program	25	Teacher	NO.
WIP-1 Program	27	Teacher	None at this time. It has a remarkable experience.
WIP-1 Program	41	Teacher	It was the best thing to happen in my curriculum advancement. I learned more during this process than in my master's program
WIP-1 Program	45	Teacher	The staff was extremely knowledgeable and aware of the different background levels of the participants. They were helpful in all aspects. The field trips for specimen collection were excellent in expanding materials for my labs.

Grant	ID	Survey	Comments about participation in the IMSP during this year of implementation
WIP-1 Program	49	Teacher	I really enjoyed this program.
WIP-1 Program	52	Teacher	no
WIP-1 Program	54	Teacher	None
WIP-1 Program	56	Teacher	I found it to be very useful and enjoyed working with all the different teachers towards understanding the software and concepts more clearly.
WIP-1 Program	58	Teacher	My participation has made me a much better teacher and has had great benefits to my students.
WIP-1 Program	61	Teacher	It was an eye-opening program in that it allowed us educators, who are rather insulated from many of the developments and tools in industry, to see something that's currently being used there. I had no idea that CAD programs were so powerful.
WIP-1 Program	63	Teacher	continue training teachers in science technology and math as these are area where students are falling behind and where the majority of teachers need more training
WIP-1 Program	67	Teacher	NONE
WIP-1 Program	76	Teacher	It is a great program for both educators and their students!
WIP-1 Program	82	Teacher	Wonderful
WIP-1 Program	86	Teacher	I enjoyed the two years working with the group! Thank you!
WIP-1 Program	87	Teacher	I feel that this program was/is of benefit to my teaching.
WIP-1 Program	89	Teacher	I feel very lucky to have been part of the project.
WIP-1 Program	90	Teacher	excellent opportunity
WIP-1 Program	92	Teacher	It was a wonderful experience!
WIP-1 Program	98	Teacher	very organized
WIP-1 Program	99	Teacher	Like always, this was my third and final year and I hate to leave. But I will use all of the materials and knowledge that I received from these classes.
WIP-1 Program	102	Teacher	Instructors were great and I learned a lot in the process.

Grant	ID	Survey	Comments about participation in the IMSP during this year of implementation
WIP-1 Program	108	Teacher	ISAT collection of data is problematic for middle school teachers due to the volume of students we have. For example, I would have to report more than 125 students each time. Then, for the end of the year data, since I teach 7th and 8th grade, I need to collect data from 2 schools since their 6th grade data was from a different school. It is not impossible, it is just difficult obtaining data and then recording it when I don't have access to it readily. This is not a problem in a self-contained classroom, as those teachers have far fewer students and access to their data.
WIP-1 Program	112	Teacher	This was a fantastic program and I hope to see it continue on for years to come!
WIP-1 Program	114	Teacher	I have been with [name]'s Math and Science programs since its Camp Imagination incarnation and it has been a great asset to me throughout the years. It has provided me with the only bits of equipment I have ever had the opportunity to use and it is my sincere hope that you allow this program to continue for it is very worthwhile and it makes a difference in the classroom by producing more engaged kids.
WIP-1 Program	118	Teacher	No
WIP-1 Program	120	Teacher	very good experience!
WIP-2 Program	1	Teacher	It was wonderful and my students have all benefitted from my participation.
WIP-2 Program	2	Teacher	no
WIP-2 Program	6	Teacher	I am ecstatic that I took the opportunity presented to me to be a part of the IMSP program. I have learned more from this program, that I learned in 2 years of my master's degree to become a teacher. I feel that this is the type of class needed for educators, rather than the method's classes we are expected to take. You can't teach teaching, it's something that you just do. BUT learning what science really is was far more beneficial and I walked away from a 3 week summer Engineering Class than 2 years of methods classes.
WIP-2 Program	8	Teacher	This survey is regarding the Engineering Now class starting June 2011.
WIP-2 Program	9	Teacher	I was disappointed that I did not receive any materials to implement in my classroom. I was informed that this was part of the program.
WIP-2 Program	14	Teacher	Good to have break between the 2 week session to reflect on principals, play w/technologies
WIP-2 Program	16	Teacher	Enjoyed the class. It was challenging because it was geared towards grades 7-12 and I have not had the higher level math for a long time. However, it was great to see what the higher levels are expecting and what we need to do at the JH level.
WIP-2 Program	19	Teacher	I truly believe this project was put forth with a lot of work as well as heart and soul with the effort....Dara has great vision for helping to see that the schools within their ROE are successful. [IHE faculty name] was a wonderful attribute. He brought forth many useful & relevant ideas for all participants.
WIP-2 Program	22	Teacher	I would like to give thanks to all who made IMSP possible. You have given me a chance to teach and prepare students for the 21st century.

Grant	ID	Survey	Comments about participation in the IMSP during this year of implementation
WIP-2 Program	23	Teacher	The IMSP grant has helped me to continue to improve as a STEM teacher.
WIP-2 Program	31	Teacher	I made many new contacts to share implementation ideas with.
WIP-2 Program	34	Teacher	The workshops and staff have me excited to be a part of the [name] program and look forward to implementing it. Yet, I am concerned about how much time it will take to complete a learning cycle and whether or not I can still cover the curriculum needed for my students to improve & pass their standardized tests.
WIP-2 Program	36	Teacher	I learned SO much about the integration of Math and Science during the [name] Workshop at [IHE]. I believe that ISAT is going to get in the way of implementation in my school district. The district will definitely NOT fully integrate it. I/We will only be able to integrate it sparingly, unfortunately.
WIP-2 Program	37	Teacher	It was very informative going through the training.
WIP-2 Program	39	Teacher	Programs like this give me hope to bring our school into the technology age. They can't see beyond AYP. If we teach the students Math, Science, and technology together we will increase our ability to make AYP.
WIP-2 Program	43	Teacher	It was and outstanding 2 weeks. I truly appreciate the opportunity of being with other teachers. I got so much from the class time. This was enhanced by our meal time discussions. Being able to stay on campus was definitely a plus!
WIP-2 Program	45	Teacher	Awesome
WIP-2 Program	48	Teacher	Over all (other than the second to last day) it was a good workshop.
WIP-2 Program	49	Teacher	none
WIP-2 Program	53	Teacher	I find the collaboration with other STEM educators and the sharing of lesson ideas to be extremely valuable
WIP-2 Program	57	Teacher	It does seem to be well thought out, but I understand the lack of additional time to broaden then learning environment.
WIP-2 Program	65	Teacher	It was mentally exhausting but worth it.
WIP-2 Program	66	Teacher	not at this time
WIP-2 Program	85	Teacher	The junior high and high school teachers benefitted the most from this program. The math was too advanced for most of the primary teachers that hadn't had a math class in many years.
WIP-2 Program	87	Teacher	very positive experience
WIP-2 Program	88	Teacher	no
WIP-2 Program	91	Teacher	No

Grant	ID	Survey	Comments about participation in the IMSP during this year of implementation
WIP-2 Program	92	Teacher	I thought the people in charge of the IMSP in [county names] did an excellent job preparing it.
WIP-2 Program	102	Teacher	What I gained this summer was/is immeasurable. The quality of commitment from my teachers was outstanding. I learned so much!!!
WIP-2 Program	103	Teacher	I learned a lot and cannot wait to use the activities and materials in the classroom.
WIP-2 Program	108	Teacher	This program was very useful and applicable to my high school classroom.
WIP-2 Program	112	Teacher	This program should definitely continue
WIP-2 Program	121	Teacher	excellent experience
WIP-2 Program	124	Teacher	Better communication between staff and more directed goal set up front. Never really understood goal until about day 4 of workshop.
WIP-2 Program	125	Teacher	Great workshop!
WIP-2 Program	128	Teacher	Professors and assistants did an excellent job trying to explain material we didn't understand and help us understand the importance of using this material in class.
WIP-2 Program	135	Teacher	no.
WIP-2 Program	137	Teacher	So far, I'm really enjoying it.
WIP-2 Program	140	Teacher	This has been such a wonderful learning experience!
WIP-2 Program	142	Teacher	I am very thankful for this opportunity.
WIP-2 Program	144	Teacher	I love it and wish I could continue on with it next year!
WIP-2 Program	147	Teacher	I have enjoyed the learning of teaching strategies and skills that I can implement in my classroom. It is much appreciated!
WIP-2 Program	150	Teacher	It was by far the most productive grant I have ever been involved in. I have learned so much and my teaching methods have improved tremendously.
WIP-2 Program	154	Teacher	This has been a wonderful opportunity for me. I have grown in my knowledge of both math and science and my students will benefit from my involvement in this grant.
WIP-2 Program	158	Teacher	n/a
WIP-2 Program	160	Teacher	[name] did a great job writing the grant and offering it to our local schools, very grateful for her hard work!
WIP-2 Program	161	Teacher	I hope that you are able to offer a grant like this again for my colleagues. It has been very beneficial to my teaching career and it has allowed me to increase my educational supplies in my classroom for hands on activities, something that I would have never been able to achieve in today's economy.
WIP-2 Program	165	Teacher	It has been a wonderful, enlightening, and fulfilling experience!

Grant	ID	Survey	Comments about participation in the IMSP during this year of implementation
WIP-2 Program	167	Teacher	Just that I am so happy I have had the opportunity to be a part of it! I definitely would do it again and again and again!
WIP-2 Program	169	Teacher	Just hoping we get the resources to back it up
WIP-2 Program	170	Teacher	This was a great experience that I am very fortunate to have attended. I learned a great amount of information that I even took home to my family.
WIP-2 Program	175	Teacher	It has been a great experience and I am so glad that I decided to participate.
WIP-2 Program	176	Teacher	no
WIP-2 Program	178	Teacher	I'm looking forward to implementing what I learned this summer, in my classroom with my students.
WIP-2 Program	179	Teacher	I enjoyed it and grew a lot
WIP-2 Program	183	Teacher	This was the best program I have been involved in in a very long time. Showed how to integrate engineering into my science and math curriculum.
WIP-2 Program	185	Teacher	Overall positive experience.
WIP-2 Program	191	Teacher	As in the Engineering Class I am a participant, the Math class again far surpassed my expectations. It was more beneficial to me than my whole master's degree. Learning methods did not do for me as a teacher, that the math class I partook in did.
WIP-2 Program	193	Teacher	The survey is regarding Algebraic Thinking in Science starting July 2011.
WIP-2 Program	202	Teacher	I am grateful for the opportunity. The course and instructors were top notch.
WIP-2 Program	207	Teacher	I gained knowledge and grew as a teacher. Thanks
WIP-2 Program	208	Teacher	It has been a rewarding and valuable learning experience for me.
WIP-2 Program	209	Teacher	It is a great way to involve classroom teachers.
WIP-2 Program	212	Teacher	I am the PI, so I filled the survey from my perspective as such. Thanks! Jeff
WIP-2 Program	219	Teacher	I was actually excited to attend this workshop.

Grant	ID	Survey	Comments about participation in the IMSP during this year of implementation
WIP-2 Program	220	Teacher	I have participated in STEM Master's program at another university and this program gave me more knowledge and resources to better serve my students. I wish this would have been offered as a course during my STEM program, it would have been far more beneficial.
WIP-2 Program	225	Teacher	no
WIP-2 Program	230	Teacher	It was a wonderful experience.
WIP-2 Program	233	Teacher	It was fantastic!! I feel that my students will greatly benefit from my participation in the IMSP.
WIP-2 Program	241	Teacher	I feel that we could have worked a little more with the teachers from our schools to collaborate and come up with a plan on implementation for a cross-curricular lesson that could serve all students. We didn't seem to have a lot of time for collaboration to set such a theme in motion.
WIP-2 Program	242	Teacher	I think it is a great program.
WIP-2 Program	244	Teacher	Wish we would have had more time to discuss and develop our PBL during the workshop. Would have liked to have had more time to reflect on how I would implement the ideas/ concepts we covered during the workshop. I found that some of the most beneficial things I gained from the workshop was sharing/ getting ideas from other teachers. I felt like this part of the process was rushed and cut off due to time constraints and had it not been for our 'hotel' time, it probably would not have happened.
WIP-2 Program	245	Teacher	This was amazing-- I was a Talent Sparks3 Participant-- and I am just amazed at how much I learned and how much support we got.
WIP-2 Program	248	Teacher	I was extremely disappointed in the experience I received over the summer. I did not feel as if the people in charge knew what they were doing at times (a lot of times). I specifically asked about a problem I was having an issue with and I never got an answer (VERY UPSETTING!)
WIP-2 Program	250	Teacher	I am still unsure about what is expected of me in order to fulfill the grant.
WIP-2 Program	251	Teacher	Needs to be better organized. Deadlines are too quick and poorly explained.
WIP-2 Program	252	Teacher	This is a great program!
WIP-2 Program	256	Teacher	I loved how organized and nurturing the staff and instructors were.
WIP-2 Program	257	Teacher	Great program.
WIP-2 Program	261	Teacher	I feel very fortunate to have had the opportunity to participate in this program.

Grant	ID	Survey	Comments about participation in the IMSP during this year of implementation
WIP-2 Program	266	Teacher	I truly believe it is a worthwhile and effective program. I hope that the program is extended to include geometry, trig, and science concepts. I would be very interested in being involved if it becomes available.
WIP-2 Program	267	Teacher	I truly believe it is a worthwhile and effective program. I hope that the program is extended to include geometry, trig, and science concepts. I would be very interested in being involved if it becomes available.
WIP-2 Program	269	Teacher	This has been much harder than I ever imagined, but I got so much out of it that it is worth the time and effort.
WIP-2 Program	272	Teacher	Very beneficial
WIP-2 Program	277	Teacher	I have no other comments at this time.
WIP-2 Program	281	Teacher	no

Table 27. Comments about the Most Positive Aspects of the IMSP

Grant	ID	Survey	Comments about the most positive aspects of the IMSP
MS Program	4	IHE	Working with the teachers and their classrooms. Working with the evaluators. Attending IMSP meetings.
MS Program	7	IHE	This is not the first year of implementation. During this year, the Action Research projects showed the degree to which teachers were impacting classroom instruction.
MS Program	8	IHE	Teacher participation
MS Program	10	IHE	Get to know the local community of STEM teachers, their needs and classroom practices.
MS Program	15	IHE	One of the most positive aspects of my participation in this year of implementation was mentoring the teacher participants through their action research studies, and seeing 22 of our teacher participants complete their graduate master degree programs.
MS Program	17	IHE	Seeing the weaker students gain confidence and improve dramatically in their knowledge and ability.
MS Program	21	IHE	The collaboration between the district, the College of Education, and the College of Liberal Arts and Sciences.
MS Program	22	IHE	Progress of the teachers.
MS Program	23	IHE	The very unique program that was offered to teachers to obtain their middle school math endorsement and master's degree.
MS Program	27	IHE	graduation
MS Program	28	IHE	I have learned a lot from participating, and I have really enjoyed developing relationships with the teachers and others in the district. I think these relationships will have long-term impacts for both instruction in the district and my future research.
MS Program	30	IHE	Work with the teachers and seeing how they became more accepting of the action research project
MS Program	31	IHE	Opportunity to observe the development of a professional community among the participant teachers as well as among the implementation committee! The leadership of the grant allowed this to happen...Great learning beyond the course instruction.
MS Program	32	IHE	Working with a wonderful group of teachers, and through them, I hope, improving science instruction in their schools.

Grant	ID	Survey	Comments about the most positive aspects of the IMSP
MS Program	42	IHE	Our first cohort graduated with their new master's degree and handed the torch to our second cohort.
MS Program	44	IHE	Learning more from teachers
MS Program	46	IHE	All of it. So worthwhile from design to listening to the speakers
MS Program	48	IHE	Seeing the partners working together with a common objective.
MS Program	50	IHE	Collaboration
MS Program	55	IHE	Some of the participants worked very hard to learn the content and asked good questions in the class. Their presentations showed that they applied what they had learned to their teaching.
MS Program	63	IHE	Strong project leaders and instructional content provided to the teachers.
MS Program	65	IHE	Teachers who network from their surrounding districts has been great. Update of materials and interaction with scientists have been one the great benefits of the program.
WIP-1 Program	1	IHE	Strong leadership
WIP-1 Program	5	IHE	Strong leadership
WIP-1 Program	16	IHE	The integration achieved with math, science, and technology the past two years has surpassed expectations.
WIP-1 Program	17	IHE	Improving content knowledge of the teachers -- which makes them better teachers.
WIP-2 Program	3	IHE	The content knowledge of the teachers has increased
WIP-2 Program	4	IHE	Seeing teachers grow in math (and science) and appreciate the opportunities and perspectives we bring to K-12 math education. The instructional team consists of a math professor, a math educator, and a high school teacher. This unique combination is an excellent experiment for bringing diverse perspectives into K-12 professional development.
WIP-2 Program	5	IHE	Opportunity to work with teachers on mathematics, and to see their affective growth in the subject.
WIP-2 Program	6	IHE	The enthusiasm of the teachers in the classes.

Grant	ID	Survey	Comments about the most positive aspects of the IMSP
MS Program	3	Industry	Enthusiasm of teachers.
MS Program	8	Industry	Teacher's willingness to work out of their comfort zone (most have no real STEM experience, so real STEM is out of their comfort zone).
MS Program	9	Industry	Sharing ideas and networking.
MS Program	11	Industry	the collaborative nature & openness of the planning committees.
MS Program	14	Industry	Opportunities to assist teachers.
WIP-1 Program	2	Industry	In-class learning experiences with IMSP faculty and staff as well as teaching peers.
WIP-1 Program	4	Industry	Ability to have in-class learning experiences with the teachers.
WIP-1 Program	5	Industry	Partnerships made.
WIP-1 Program	7	Industry	The support from the project has been outstanding.
WIP-1 Program	9	Industry	The teachers were wonderful. Positive, cooperative, collaborative.
WIP-2 Program	1	Industry	Relationships built among partners and schools
MS Program	5	School	I have made many good friendships among the AU staff of dedicated instructors.
MS Program	6	School	This is year three of implementation. Collaboration of partners in moving agenda forward in a sustainable manner
MS Program	12	School	From the administrative side it has been a wonderful partnership with [IHE name] and the most positive aspect has been the communication.
MS Program	16	School	Relationship and professional development from the college.
MS Program	17	School	Communication between the students and the teaching staff. The courses were designed to best meet their needs.

Grant	ID	Survey	Comments about the most positive aspects of the IMSP
MS Program	20	School	I liked the collaboration with classroom teachers.
MS Program	26	School	growth as a teacher in different areas of content knowledge
MS Program	28	School	Members of the program were very supportive.
MS Program	30	School	The working relationship with the professors and leadership has been great.
MS Program	31	School	Moving from 'free' Masters degrees to building teacher leadership for the district.
MS Program	33	School	Feedback of how students are doing in the program
MS Program	39	School	Getting to meet this wonderful cohort of teachers... seeing them grow as a group... seeing some of them move into leadership positions related to STEM and math in our systems.
MS Program	42	School	The growth and professional development offered to all of the participants in the program. Improvement of teaching, which directly affects student achievement.
WIP-1 Program	3	School	Ability to enhance teachers' professional development.
WIP-2 Program	3	School	Our teacher has a renewed enthusiasm.
WIP-2 Program	4	School	The amount of information and material our staff gained through the process.
MS Program	1	Teacher	Got to experience the beginning of the program. Hopes to help future programs like this.
MS Program	4	Teacher	Master's Degree
MS Program	5	Teacher	the staff at [IHE name]
MS Program	8	Teacher	Creating new relationships with educators within my district and those surrounding my district.

Grant	ID	Survey	Comments about the most positive aspects of the IMSP
MS Program	9	Teacher	I completed my action research project, which was a beneficial experience. It will allow me to continue action research in the future.
MS Program	11	Teacher	action research project
MS Program	14	Teacher	Growth in content material
MS Program	17	Teacher	The strong connections made with a very positive group of teachers that were my classmates.
MS Program	18	Teacher	The amount of support given by the instructors at SIUC has been phenomenal.
MS Program	19	Teacher	Interacting with staff from different areas.
MS Program	20	Teacher	I gain a lot of content knowledge and great activities/lessons to bring back into my classroom and help my students learn.
MS Program	21	Teacher	Relationships built with the other math and Science teachers within my school.
MS Program	22	Teacher	Learning the Emerging Technologies in STEM
MS Program	23	Teacher	the collaboration among teachers
MS Program	24	Teacher	Getting to know other teachers both in my district others.
MS Program	25	Teacher	The hands on experience!
MS Program	26	Teacher	I was able to work with other teachers in my building and share ideas about curriculum.
MS Program	27	Teacher	I am really starting to understand better my junior high students' thinking processes.
MS Program	30	Teacher	Honestly, I'm happy to be done, traveling out to [city name] once a week was a pain.
MS Program	31	Teacher	I really enjoyed the internship. I would have loved to have had more opportunities like that to reinforce the content.

Grant	ID	Survey	Comments about the most positive aspects of the IMSP
MS Program	32	Teacher	the resources
MS Program	41	Teacher	This is the third year of implementation.
MS Program	45	Teacher	Acquisition of mathematical knowledge and increased confidence in teaching Math.
MS Program	46	Teacher	I have grown tenfold in my mathematics ability and I am able use what I learned to take learning to a deeper level
MS Program	47	Teacher	action research and collaboration between other teachers in my cohort.
MS Program	48	Teacher	The interaction with the other participants and professors.
MS Program	49	Teacher	Collaboration and self-reflection.
MS Program	52	Teacher	Being able to collaborate with others in my field
MS Program	54	Teacher	As in the past, I enjoyed attending the NCTM conference and co-teaching with another from the cohort. If it weren't for this program, I don't think I would have ever been able to do either.
MS Program	56	Teacher	I feel I am a better teacher. The learning of my students is still important but the implementation of concepts in the classroom are not different.
MS Program	59	Teacher	The connections with the other participants I now have.
MS Program	61	Teacher	The ability to co-teach with colleagues and put into practice the instructional techniques being learned
MS Program	62	Teacher	The members of our cohort looked out for one another, and took interest in each individual's progress. This group of people began the cohort as individuals and left as a family.
MS Program	65	Teacher	The opportunity to work and collaborate with fellow educators helped me grow professionally.
MS Program	67	Teacher	learning to feel the struggle of mathematics as our students do.
MS Program	68	Teacher	I was able to collaborate with other teachers and discuss the many strategies that everyone is using within their classroom.

Grant	ID	Survey	Comments about the most positive aspects of the IMSP
MS Program	69	Teacher	I think the course that had the greatest impact on my teaching was with [IHE faculty name]. He was very insightful and gave me a whole different idea about what teaching should be like. Having students develop mathematics understanding based on their on their own reasoning and exploration.
MS Program	70	Teacher	it has changed the way I teach, in a very positive way
MS Program	71	Teacher	The professors at [IHE name] are outstanding! I have learned so much!
MS Program	74	Teacher	working with other teachers
MS Program	75	Teacher	Learning new strategies that will help me to be a more effective mathematics teacher.
MS Program	77	Teacher	the strategies provided
MS Program	83	Teacher	Diversity in the courses.
MS Program	84	Teacher	Action Research was a wonderful way to cap off the program.
MS Program	85	Teacher	The relationships established through the program itself.
MS Program	88	Teacher	I have become a better and more effective teacher.
MS Program	94	Teacher	enhancement of content knowledge as well as middle school math endorsement qualifications
MS Program	96	Teacher	My knowledge in the math content was enriched by the program.
MS Program	97	Teacher	I feel even better prepared to teach my students and have learned ways to better reach all of them.
MS Program	98	Teacher	I think it allowed me to really grow as a teacher. I was able to work and grow with other cps teachers who had similar struggles and we could share ideas with one another.
MS Program	99	Teacher	The content and pedagogical knowledge I gained through the years.

Grant	ID	Survey	Comments about the most positive aspects of the IMSP
MS Program	100	Teacher	The most positive aspect would be the use of collecting data and analyzing it for instructional purposes.
MS Program	101	Teacher	My increased content and pedagogical knowledge allows me to plan more effectively for student learning, and assists me in collaborating with my colleagues at work to influence instruction and improve student achievement.
MS Program	102	Teacher	The learning from the experiences brought to this program by my colleagues.
MS Program	103	Teacher	Greatly increased my content knowledge
MS Program	109	Teacher	Math content knowledge and collaboration with colleagues and professors
MS Program	110	Teacher	Being more confident teaching math , learning math content , sharing ideas with colleges, and learning strategies and methods to better serve my students
MS Program	112	Teacher	The most positive aspect of my participation is seeing the excitement in my students over learning what I was learning in my classes. They were actively engaged and it was also beneficial for them to see that learning never stops.
MS Program	115	Teacher	The incorporation of technology into instruction.
MS Program	116	Teacher	i am less stressed about state testing and MORE enthusiastic about getting my kids to UNDERSTAND math concepts.
MS Program	119	Teacher	I love being able to see how much the students look forward to math and especially science lessons.
MS Program	120	Teacher	Having the opportunity to increase my students' and my math and science knowledge.
MS Program	121	Teacher	Enthusiastic and knowledgeable instructors and acquiring resources to provide inquiry science based lessons in the classroom
MS Program	123	Teacher	Practical experience with working with students and studying teaching effects through action research.
MS Program	124	Teacher	The diverse faculty and insight brought to the classes.
MS Program	125	Teacher	My teaching of science is more inquiry based. I am a much better science teacher. I utilize a lesson format that incorporates engagement, exploration, explanation, elaboration and evaluation with hands on activities.
MS Program	126	Teacher	Many new ideas for teaching math and science were given.

Grant	ID	Survey	Comments about the most positive aspects of the IMSP
MS Program	130	Teacher	We had a great time and learn a lot. I learned to use a lot of new technology from the staff and other students.
MS Program	140	Teacher	I enjoyed the hands on activities and projects that required group work.
MS Program	141	Teacher	The cohesion of all that I have learned and working with the other teachers in my cohort group to bring even more great ideas to my classroom.
MS Program	148	Teacher	The most positive aspect is the change in my understanding of helping the students with a variety of information.
MS Program	149	Teacher	I feel my students are reaping the benefits of the outcome of my studies
MS Program	150	Teacher	Access to new content knowledge and some technology.
MS Program	155	Teacher	I am glad to be learning environmental science content that I can incorporate into my mathematics curriculum.
MS Program	156	Teacher	I did learn a lot about content.
MS Program	157	Teacher	Getting to work with colleagues and reap the benefits of their knowledge base
MS Program	158	Teacher	There is not one...the faculty I have worked worth, the contacts I have made, the materials I have been exposed to, and the education I have gained.
MS Program	159	Teacher	The science knowledge I have gained.
MS Program	162	Teacher	The peer interaction, establishing a nice relationship with other teachers.
MS Program	163	Teacher	Support from other teachers in the program
MS Program	164	Teacher	The group of colleagues and mentors I have meet. When we all have every class together, we do better at the give and take. I have learned more so far from the others in the cohort than I had in previous grad classes!
MS Program	167	Teacher	I am moving towards my master's degree

Grant	ID	Survey	Comments about the most positive aspects of the IMSP
MS Program	168	Teacher	Working with other teachers from the area.
MS Program	169	Teacher	Collaboration with other STEM teachers in the area
MS Program	172	Teacher	I've gotten to meet a lot of people in my classes that have great teaching ideas that I currently use in my classroom.
MS Program	173	Teacher	The support I have received has been amazing. It is wonderful to have teachers from other local districts to be able to share ideas with. I see the relevance of what we are learning to be the wave of the future to meet the new Common Core Standards.
MS Program	174	Teacher	The only beneficial thing is the communication between teachers of other schools. Talking with other teachers from other school districts has been positive. More communication in the math classes that were billed as methods classes (and are not but upper level graduate classes) would be most positive.
MS Program	175	Teacher	The cohort experience and the exposure to STEM.
MS Program	176	Teacher	Meeting and collaborating with other math teachers.
MS Program	178	Teacher	Working with other teachers from other schools towards our goals.
MS Program	180	Teacher	Access to other STEM educators, resources provided
MS Program	181	Teacher	Learning about the core standards and how project based STEM approaches is what the 21st century classroom is leaning towards.
MS Program	184	Teacher	I have received many useful resources. I enjoy meeting with other math teachers on a regular basis and discussing school related issues.
MS Program	189	Teacher	The network of resources that I have developed.
MS Program	196	Teacher	The content knowledge that could be used in my classroom with my own students and their learning.
MS Program	198	Teacher	The most positive aspect continues to be the CONTENT classes. This past term, the Earth and Space Science class was outstanding.

Grant	ID	Survey	Comments about the most positive aspects of the IMSP
MS Program	199	Teacher	It's free.
MS Program	200	Teacher	Getting ideas from other teachers in the program, and some strategies used by our math professors.
MS Program	202	Teacher	The internship was interesting. I liked talking with other schools and discussing similarities and differences. The technology course was great!
MS Program	203	Teacher	The math classes were of enormous help since I was lacking highly qualified hours
MS Program	211	Teacher	The technology class was my favorite. Most of the teachers were great.
MS Program	215	Teacher	I learned teaching strategies from other teachers
MS Program	217	Teacher	I moved over on the pay scale.
MS Program	218	Teacher	Quick program with lots of online courses.
MS Program	220	Teacher	I believe this is the last year of implementation
MS Program	221	Teacher	meeting new people
MS Program	222	Teacher	My understanding of the content area has been improved, which I would not have been able to do without the program, and my knowledge in the area of technology use and applications has greatly improved.
MS Program	226	Teacher	New things I bring to our science department, more encouraging of students to complete intern ships in STEM outside of school for the summer.
MS Program	227	Teacher	Designing and applying the action research in my classroom.
MS Program	233	Teacher	I really feel like I have made strides in improving both my content and pedagogical knowledge, which makes me more confident and effective as a teacher.
MS Program	235	Teacher	The extra professional development, such as visiting national conventions, extra resources, and extra content knowledge.
MS Program	240	Teacher	The most positive aspect that I've had was helping to spread STEM ideology through my school. Also, working professionally with Dr. Merrill is a great pleasure due to his level of expertise and motivation of content.

Grant	ID	Survey	Comments about the most positive aspects of the IMSP
MS Program	244	Teacher	Learning effective ways to get my school & district involved in IMSP activities more.
MS Program	245	Teacher	The improvement of my lessons and curriculum.
MS Program	248	Teacher	Good people
MS Program	249	Teacher	Allowing students the opportunity to connect various learning activities
MS Program	250	Teacher	Interaction with other teachers - sharing ideas
MS Program	253	Teacher	Being recognized as being a teacher-leader and viewed as a resource.
MS Program	254	Teacher	The books and articles that were chosen for us to read were very insightful and beneficial.
MS Program	255	Teacher	The rate of tuition, materials provided, cohort support, consistent leadership of the IMSP
MS Program	256	Teacher	This was a great experience....very much worth the time and effort I put into it
MS Program	259	Teacher	Improved content knowledge and teaching methods
MS Program	262	Teacher	Being able to listen and work with colleagues in our district. It was nice to get to know them on a professional and personal level.
MS Program	263	Teacher	I am almost finished - there's the positive!
MS Program	264	Teacher	CONTROL OF IMSP WAS SWITCHED TO VERY CAPABLE STAFF
MS Program	270	Teacher	Making contact with other teachers in the district. I have learned from other teachers sharing our knowledge.
MS Program	271	Teacher	It is almost over.
MS Program	272	Teacher	The program motivated me to continue to improve my teaching. I continue to improving my teaching strategies so my students learn on a conceptual level.

Grant	ID	Survey	Comments about the most positive aspects of the IMSP
MS Program	273	Teacher	Working on group projects that caused us to observe, experience, and reflect
MS Program	274	Teacher	The professors and the materials were great.
MS Program	277	Teacher	I am proud and lucky to be a part of this program.
MS Program	278	Teacher	Learned some things on new and different technologies
MS Program	280	Teacher	The application of most classes and material I learned in the IMSP to my everyday teaching is pretty outstanding.
MS Program	282	Teacher	The most positive aspect to participating in IMSP has been the connections and networking that I have been able to make with other teachers in the area.
MS Program	283	Teacher	collaboration
MS Program	285	Teacher	I have enjoyed the opportunities to meet with a great group of teachers and learn from them as well as the teacher
MS Program	286	Teacher	Working with teachers in my building to make the curriculum better.
MS Program	287	Teacher	I like having the opportunity to work with other teachers and discuss lessons used in our classes.
MS Program	289	Teacher	Challenges presented by taking content area (biology) classes.
MS Program	291	Teacher	classes in subject area
MS Program	293	Teacher	I've learned so many new things I can use in the classroom, and enjoyed collaborating with other teachers.
MS Program	295	Teacher	I was able to achieve my goal of obtaining a Master's degree in Biology (not education) and continue to work. It was exactly what I wanted.
MS Program	296	Teacher	Getting/ sharing ideas with very strong teachers from many different schools. The collaboration has been worth any other issues that may have arisen.

Grant	ID	Survey	Comments about the most positive aspects of the IMSP
MS Program	298	Teacher	The relationships I have established with science teachers outside of my district.
MS Program	299	Teacher	Collaboration with other teachers and mentors
WIP-1 Program	2	Teacher	I feel that learning about Problem Based Learning was the best part of the experience and hope to promote this more in the future.
WIP-1 Program	4	Teacher	The collaboration between teachers/professionals in their respective areas.
WIP-1 Program	8	Teacher	Feeling more comfortable implementing PBL units.
WIP-1 Program	10	Teacher	exposure to new technologies
WIP-1 Program	18	Teacher	I am a better teacher, my students are able to learn
WIP-1 Program	20	Teacher	The partnership with [industry partner name]
WIP-1 Program	21	Teacher	New ideas! I LOVE the fact that we were trained in PBL through IMSA.
WIP-1 Program	23	Teacher	The access to materials and the time to prepare lessons.
WIP-1 Program	24	Teacher	The ability to receive equipment and materials from my IMSP program was invaluable to my first year as a teacher.
WIP-1 Program	25	Teacher	THE COLLABORATION TIME WITH OTHER TEACHERS WITH THE SAME INTEREST.
WIP-1 Program	26	Teacher	I am able to introduce the new field of nanotechnology to my students.
WIP-1 Program	27	Teacher	Knowledge of new material in nanotechnology to share w/students, being comfortable presenting lessons and the resources made available to my classroom.
WIP-1 Program	29	Teacher	I am amazed that as a Math teacher, I now feel comfortable relating topics in my classroom to things I have learned about biotechnologies over the last two years!
WIP-1 Program	33	Teacher	My teaching has truly been improved by the implementation of strategies, resources, and information I have obtained.

Grant	ID	Survey	Comments about the most positive aspects of the IMSP
WIP-1 Program	34	Teacher	access to resources, both tangible and intellectual
WIP-1 Program	36	Teacher	Network of teachers around IL and earth science content, and geology field work
WIP-1 Program	41	Teacher	The labs and lessons have helped myself and others.
WIP-1 Program	43	Teacher	I met many new friends who continue to collaborate with me. Most schools only have 1-2 earth science teachers so it's really valuable to meet others.
WIP-1 Program	45	Teacher	This course work provided new subject materials to augment my teaching curriculum. This fills a void in earth science material that is not be currently taught at my school.
WIP-1 Program	49	Teacher	Helpful leaders who answered questions and gave ideas for implementation.
WIP-1 Program	50	Teacher	Learned a lot about 3 D modeling
WIP-1 Program	52	Teacher	access to new STEM resources
WIP-1 Program	54	Teacher	The chance to incorporate current technology into a science classroom.
WIP-1 Program	56	Teacher	Being able to come back to my school and share with the students and staff what I had learned. The many different items that I received (i.e. laptop, projector, 3D mouse, etc) were very beneficial and have been used often in my classroom.
WIP-1 Program	57	Teacher	the exposure to innovative methods of teaching using technology
WIP-1 Program	58	Teacher	I am now a part of a strong group of educators that believe and care about using the programs we learned to strengthen our STEM teachings. I also had incredible training and support.
WIP-1 Program	61	Teacher	See answer above regarding access to relevant technologies used in the workforce today. Also, the kids enjoyed it and most took to it pretty quickly. Most are used to seeing visual representations of things and being able to manipulate them, so it was a great tool to engage them in applications of science topics explored in class, as well as a learning tool for some topics.
WIP-1 Program	67	Teacher	NONE
WIP-1 Program	68	Teacher	The staff at Lee/Ogle ROE and the Professors involved in the program were excellent
WIP-1 Program	73	Teacher	curriculum resources

Grant	ID	Survey	Comments about the most positive aspects of the IMSP
WIP-1 Program	76	Teacher	Seeing the growth in my student's math skills.
WIP-1 Program	78	Teacher	The multimedia tools I received from the class
WIP-1 Program	82	Teacher	all aspects mentioned above.
WIP-1 Program	86	Teacher	Depth of knowledge! I learned so very much!
WIP-1 Program	87	Teacher	I was able to gain a lot of information as to how other teachers are bringing the IMSP into their classrooms.
WIP-1 Program	88	Teacher	Being able to network with other teachers across the state
WIP-1 Program	89	Teacher	I have been in this project for two years.
WIP-1 Program	90	Teacher	awareness of science news and discoveries
WIP-1 Program	92	Teacher	Bringing technology and current scientific practices into my classroom
WIP-1 Program	95	Teacher	networking with others and gaining new ideas and labs for my classroom!
WIP-1 Program	96	Teacher	These courses have helped me grow as a teacher. With the National Core Standards coming, integration is a key, and these courses really helped with that. More programs like these need to continue!
WIP-1 Program	97	Teacher	I appreciate being able to strengthen my content area knowledge and being exposed to other ways to implement lessons and activities in the classroom.
WIP-1 Program	98	Teacher	interaction with professors
WIP-1 Program	101	Teacher	The resource materials that I received
WIP-1 Program	102	Teacher	Learning how to implement all the hands-on lessons.

Grant	ID	Survey	Comments about the most positive aspects of the IMSP
WIP-1 Program	103	Teacher	Increased my knowledge base and built my confidence to use hands-on inquiry based projects. Also the friendships that were built over 3 year period improved collegiality across districts and grade levels. I would feel comfortable collaborating with any of my NIMS classmates.
WIP-1 Program	106	Teacher	the ability to peer share with other excited teachers
WIP-1 Program	107	Teacher	the activities that were so easily transferred to my classroom
WIP-1 Program	108	Teacher	Better ideas of how to integrate the subjects.
WIP-1 Program	111	Teacher	Prior to this year I included very little physical science in my 6th grade units because of lack of confidence about my ability to teach the content. I feel adequately prepared to include the content now.
WIP-1 Program	112	Teacher	This program taught me so much about math and science in the classroom. I feel that I have become a better math and science teacher because of this program and all the information and resources they provided me with.
WIP-1 Program	114	Teacher	I have learned so many new things as a result of my time in GreenSTEM and I will take with me many materials that I will use to teach children throughout my career. Thank you for this opportunity I am very grateful.
WIP-1 Program	115	Teacher	Getting the technology (TI-NSpires) for my classroom.
WIP-1 Program	117	Teacher	The items I received.
WIP-1 Program	118	Teacher	Getting to work with teachers from different schools and becoming friends with them. It is nice to have someone outside of your own district to consult with.
WIP-1 Program	120	Teacher	Science tools and workshops
WIP-1 Program	124	Teacher	Wealth of technology gained and experience using that technology
WIP-1 Program	127	Teacher	The availability of teaching tools that are badly needed in my district.
WIP-2 Program	1	Teacher	Everything.
WIP-2 Program	2	Teacher	I have new ideas and tools to help my students

Grant	ID	Survey	Comments about the most positive aspects of the IMSP
WIP-2 Program	3	Teacher	Access to content knowledge well beyond the immediate needs of the elementary classroom which allows us to foresee possible student questions or fields of inquiry.
WIP-2 Program	4	Teacher	I have not had a year of implementation yet.
WIP-2 Program	6	Teacher	Aside from the materials and partners, I feel that the education that I received far outreached anything else. Even if I had not been given materials, I feel that what I learned can support me in my 3rd grade classroom.
WIP-2 Program	8	Teacher	Increased and refreshed science knowledge through workshops, hands-on activities, and field-trips.
WIP-2 Program	9	Teacher	Meeting new people and sharing ways of presenting math in my classroom.
WIP-2 Program	11	Teacher	Having knowledgeable instructors.
WIP-2 Program	13	Teacher	I learned a lot about some hands on activities we could implement in the classroom to help each child with their higher order thinking skills! The activities will be fun for the students to perform.
WIP-2 Program	14	Teacher	The clickers and netbooks I received
WIP-2 Program	16	Teacher	The variety of instructors, especially Janet Moore was a very effective instructor with lots of hands on materials and ideas. I also enjoyed collaborating with fellow teachers on their classroom and sharing their ideas.
WIP-2 Program	17	Teacher	The most positive aspect was the interaction with other teachers in the project and the exposure to real world science topics to use in giving students background of applications for the learning they are doing in the classroom.
WIP-2 Program	19	Teacher	I truly loved being fully engaged at all times throughout the entire experience. It was really neat knowing that we were all working at different levels and yet still exploring new things together as a collaborative group.
WIP-2 Program	21	Teacher	The variety of technology and resources.
WIP-2 Program	22	Teacher	Receiving another set of 8 netbooks for my classroom. Now my students do not have to share.
WIP-2 Program	23	Teacher	The IMSP grant has had an impact on my students and their learning outcomes in math and science.
WIP-2 Program	25	Teacher	I learned a lot of interesting ways to show math in the real world.

Grant	ID	Survey	Comments about the most positive aspects of the IMSP
WIP-2 Program	27	Teacher	Learning about new technologies that I would not have known about if I had not participated.
WIP-2 Program	31	Teacher	The most positive aspects are the knowledge and support from the staff and the completeness of the curriculum and materials provided to support the curriculum.
WIP-2 Program	32	Teacher	The curriculum pedagogy and materials.
WIP-2 Program	34	Teacher	The [name] staff. I also got as much, if not more, out of the camaraderie that resulted in spending time with other science teachers in other schools and discussing implementation of the curriculum.
WIP-2 Program	35	Teacher	The materials given at the end of the workshop really motivated me to implement the curriculum.
WIP-2 Program	36	Teacher	The most positive aspect for me was the realization that I must teach my students to become more responsible learners. I have merely paid lip service to that belief in the past. The [name] Workshop made me remember that my instructional style leans toward constructivism. Though I have not used the [name] curriculum YET, I have used the constructivism approach. I am forcing my students to think more about the lessons and about their own thinking. They are struggling, but it will get better as long as I continue to push them.
WIP-2 Program	37	Teacher	The knowledge that was gained.
WIP-2 Program	38	Teacher	Practical application to the classroom & supplying us w/ the equipment to use in our classes
WIP-2 Program	39	Teacher	I receive instructions and materials to engage my students in cross curriculum activities using math, science and technology.
WIP-2 Program	40	Teacher	The connection that I had not only with the presenters but other colleagues as well.
WIP-2 Program	43	Teacher	The experts had such a passion for their area of study. It served to rekindle my excitement for science/teaching.
WIP-2 Program	45	Teacher	to be able to use some equipment I do not have.
WIP-2 Program	46	Teacher	Finally understanding El Nino & learning about the meeting of vortices that create tornadoes!
WIP-2 Program	47	Teacher	Access to resources for personal/professional education and class sets of resources to utilize my education in the classroom.
WIP-2 Program	48	Teacher	The trip to the NWS in Lincoln, the trip to the wind turbine, and the horticulture spot were great.

Grant	ID	Survey	Comments about the most positive aspects of the IMSP
WIP-2 Program	49	Teacher	Collaboration with other teachers.
WIP-2 Program	53	Teacher	The educational ideas provided are backed up with the technological and material resources to implement them in the classroom
WIP-2 Program	57	Teacher	The fact that I was chosen and my commitment to follow through and teach individuals who have not gotten the advantage of applied instruction.
WIP-2 Program	62	Teacher	The activities that I can take into my own classroom!
WIP-2 Program	65	Teacher	The deepening of my understanding and comprehension of the math spectrum
WIP-2 Program	66	Teacher	Classes have not yet resumed, but I am looking forward to implementing some of the new ideas in my instruction.
WIP-2 Program	67	Teacher	The technology that I received to use in my classroom.
WIP-2 Program	69	Teacher	The collaboration with teachers within our own learning community and outside of it!
WIP-2 Program	70	Teacher	Relearning the basics and where they stem from.
WIP-2 Program	71	Teacher	small group problem solving/collaboration
WIP-2 Program	73	Teacher	It has changed the way I think about my students. I have changed my math classes to involve more time for them to try different ways to solve problems.
WIP-2 Program	74	Teacher	Confidence heading into the new school year of material and resource knowledge.
WIP-2 Program	76	Teacher	The extra materials that we received that will be used in my classroom this year
WIP-2 Program	77	Teacher	Collaboration with fellow teachers in my school that I don't normally receive the opportunity to do so.
WIP-2 Program	78	Teacher	A deeper understanding of mathematics that can be shared with my students.

Grant	ID	Survey	Comments about the most positive aspects of the IMSP
WIP-2 Program	79	Teacher	The instructors were excellent. I learned many new ways of solving problems. It made me think.
WIP-2 Program	81	Teacher	the patience of the instructors.
WIP-2 Program	82	Teacher	Being able to work with fellow teachers K-12 was very worthwhile.
WIP-2 Program	87	Teacher	other teacher interaction on related topics
WIP-2 Program	90	Teacher	Greater confidence in my math skills
WIP-2 Program	91	Teacher	I learned a great deal by simply being exposed to other teachers and to their levels of understanding of math.
WIP-2 Program	92	Teacher	I really enjoyed the collaboration. As I high school teacher, I did not learn new content, but I did learn different ways to approach certain topics. It was also very helpful to learn how my students are taught different topics before they get to me.
WIP-2 Program	94	Teacher	I feel like I am trying to get my students to think of different ways to do problems instead of focusing on one strategies. I had a chance to collaborate with other professions at different levels and see where my students will need to go in the future.
WIP-2 Program	95	Teacher	I have gained so much knowledge and ideas to use with my students.
WIP-2 Program	96	Teacher	Working with new professors but collaborating with other science and math teachers is always vital and appreciated. It is great to be able to share new ideas with teachers already in the classroom and doing similar things as you.
WIP-2 Program	97	Teacher	Knowledge to share with my students
WIP-2 Program	102	Teacher	I gained confidence in a subject that I now teach!
WIP-2 Program	103	Teacher	The faculty support was awesome as it has been in the past.
WIP-2 Program	104	Teacher	The students grasped some concepts better.
WIP-2 Program	105	Teacher	I feel that [IHE faculty name] and [IHE faculty name] did an excellent job. [name] was also very helpful. The group of participants was very inspiring. We learned a lot from each other.
WIP-2 Program	107	Teacher	The collaboration and diversified approaches to all instruction were awesome!

Grant	ID	Survey	Comments about the most positive aspects of the IMSP
WIP-2 Program	108	Teacher	The resources I gained from this program are irreplaceable.
WIP-2 Program	109	Teacher	Being able to take activities I have learned and apply them immediately
WIP-2 Program	112	Teacher	The opportunity to collaborate with others!
WIP-2 Program	113	Teacher	implementation of STEM activities into my classroom
WIP-2 Program	116	Teacher	materials received and knowledge gained
WIP-2 Program	120	Teacher	The knowledge that I gained will be incorporated into my classroom this year.
WIP-2 Program	121	Teacher	the variety of activities and the support of everyone
WIP-2 Program	122	Teacher	Exposure to innovative ways to teach content and collaboration with peers.
WIP-2 Program	124	Teacher	Great knowledge received over different areas of technology.
WIP-2 Program	125	Teacher	The USB drives were very handy. Thank you.
WIP-2 Program	126	Teacher	The tools and resources that were gained through the course.
WIP-2 Program	127	Teacher	The amount of staff at [IHE name] willing to help and eager to 'do' was amazing. [name] is outstanding in her efforts and should be commended for her work!
WIP-2 Program	128	Teacher	I feel that I learned a lot of new information that will make me a better teacher in the future.
WIP-2 Program	130	Teacher	Being able to network with others. Learning new things
WIP-2 Program	133	Teacher	Collaborating with other teachers and learning new technology that can be adapted for my classroom
WIP-2 Program	135	Teacher	Lots of hands on materials to use.

Grant	ID	Survey	Comments about the most positive aspects of the IMSP
WIP-2 Program	137	Teacher	It brought me back to basics. I have been getting out the manipulatives and using them.
WIP-2 Program	140	Teacher	All the wonderful manipulatives for my classroom! It has made teaching math and science so much more enjoyable.
WIP-2 Program	142	Teacher	I have learned so much through the STEM program.
WIP-2 Program	144	Teacher	Getting course credit towards my Master's Degree!
WIP-2 Program	146	Teacher	I have gained much knowledge about technology integration. The materials provided as part of the program were outstanding.
WIP-2 Program	147	Teacher	The most positive aspect of my participation is the learning of skills, collaborating with fellow educators, and gaining knowledge and materials that will help classroom instruction.
WIP-2 Program	148	Teacher	Working with other teachers and the 'trainers' - I have gotten so many new ideas and resources.
WIP-2 Program	149	Teacher	Materials and knowledge to further my students' abilities!
WIP-2 Program	150	Teacher	Knowledge...knowledge... and more knowledge.
WIP-2 Program	154	Teacher	I appreciate all the materials and the expertize of the instructors but I have really liked that I have an opportunity to meet and collaborate with my colleagues from this area.
WIP-2 Program	158	Teacher	Very knowledgeable, capable, and hardworking people
WIP-2 Program	159	Teacher	All the interaction with other teachers
WIP-2 Program	160	Teacher	New ways to enhance my science and math instruction and receiving enough materials and manipulatives for my entire classroom.

Grant	ID	Survey	Comments about the most positive aspects of the IMSP
WIP-2 Program	161	Teacher	Being able to work with other teachers of my grade level and discuss ways to use the strategies presented were very helpful. The most positive aspect would be that I was able to earn credit hours towards my Master's Degree and I felt that the hours spent were actually useful to my everyday teaching. I don't think I would have ever gone back to school for my Masters if it wasn't for this program. Once I am finished with IMSP I will be very close to earning a Master's in which I will continue classes until I do.
WIP-2 Program	162	Teacher	I like the materials that can be used for DI activities in my classroom.
WIP-2 Program	165	Teacher	KNOWLEDGE!!
WIP-2 Program	167	Teacher	The most positive aspect is how much I have grown as a math and science teacher. I feel so much stronger in these subject areas, and have a newfound excitement to share this new knowledge with my students.
WIP-2 Program	169	Teacher	MASLI is a powerful initiative and the program was thoughtfully presented to us.
WIP-2 Program	170	Teacher	I have been given new information and a curriculum of new ideas with hands on manipulatives to use in my class! Being the student and learning from a student's perspective was very beneficial.
WIP-2 Program	172	Teacher	I learned a lot about teaching problem-solving skills to my students.
WIP-2 Program	174	Teacher	The professionals who implemented the program were very supportive and continue to be supportive. I also liked the practicality of the activities. Most of the activities are 'do-able' in my classroom. The funding for classroom materials allows me to implement much of what I learned at the workshop.
WIP-2 Program	175	Teacher	The teachers and staff were top notch. They were always there to help and support us. They were very professional and focused.
WIP-2 Program	176	Teacher	renewed interest in science
WIP-2 Program	177	Teacher	My participation has helped me to review my way of teaching. It has given me a new insight into how to introduce new topics to my students in an easier format that will help them to better understand the reason for learning the topic and an easier way to address problems in the classroom and life.
WIP-2 Program	179	Teacher	A lot of this stuff was right up my interest alley.
WIP-2 Program	183	Teacher	That I learned some very simple ways and how to use some basic everyday item to teach engineering to my students.
WIP-2 Program	184	Teacher	Purchase of resources for my class

Grant	ID	Survey	Comments about the most positive aspects of the IMSP
WIP-2 Program	185	Teacher	Being exposed to the STEM Program.
WIP-2 Program	189	Teacher	I think that the teachers were especially knowledgeable and willing to go above and beyond what they needed to do in order to help us learn. In addition, it seemed that they provided us with a wealth of resources to help our students learn.
WIP-2 Program	191	Teacher	Receiving an in-depth understanding of math to build my math background and enable me to further educate my students than I have in the past.
WIP-2 Program	193	Teacher	The instructor, [IHE faculty name], modeled exemplary mathematical teaching techniques.
WIP-2 Program	194	Teacher	Increased content knowledge
WIP-2 Program	195	Teacher	I learned how to take every day experiences and turn them into science lessons for my kindergarten students.
WIP-2 Program	197	Teacher	i have not done the implementation part yet.
WIP-2 Program	200	Teacher	The collaborative effort of the teachers who presented the workshops/labs, and the resources they provided.
WIP-2 Program	202	Teacher	The robust offerings of instructors was outstanding.
WIP-2 Program	203	Teacher	The Galaxies course I took at [IHE name]/[observatory name] last month was one of the best science courses/workshops I ever had. There were so many people who worked hard to make it such a valuable experience. I enjoyed the range of activities each day. I really learned a lot about astronomy software from this course. Thank you!
WIP-2 Program	207	Teacher	The accomplishment of my action research paper
WIP-2 Program	208	Teacher	Working with a great team of professionals toward a common goal.
WIP-2 Program	209	Teacher	Made me think more deeply about what my students are getting out of it.
WIP-2 Program	210	Teacher	I am excited about the start of school year. I view mathematical instruction differently...less teacher instruction, more kids thinking-critically, questioning, etc.
WIP-2 Program	212	Teacher	I am pleased that the teacher participants have been ready to work on learning trajectories to improve their own classroom Action R. .

Grant	ID	Survey	Comments about the most positive aspects of the IMSP
WIP-2 Program	216	Teacher	All the great ideas and new things I learned to take back to my class.
WIP-2 Program	217	Teacher	Knowing that I need to ask students how they got their answers...instead of just saying it is wrong.
WIP-2 Program	219	Teacher	It was USEFUL! It was nice to participate in professional development that will actually enhance my teaching.
WIP-2 Program	220	Teacher	Leaving with the knowledge to assess and build on my student's ability level.
WIP-2 Program	227	Teacher	The access to resources and use of the resources to decide how to implement them in our classrooms.
WIP-2 Program	229	Teacher	The provision of all necessary supplies for activities and willingness to assist in implementation
WIP-2 Program	230	Teacher	The new excitement I will bring to the classroom as a result of my participation.
WIP-2 Program	233	Teacher	I feel that I can now collaborate with science and math teachers. As an English teacher, I haven't been able to do that in the past years.
WIP-2 Program	238	Teacher	Meeting other teachers from various backgrounds
WIP-2 Program	239	Teacher	The new knowledge I gained and the networking with experts in the field.
WIP-2 Program	241	Teacher	I learned a lot more about a topic that I felt I had an excellent understanding of already. This will provide me with added information to pass along to my students.
WIP-2 Program	242	Teacher	Having the opportunity to work with other teachers throughout the state.
WIP-2 Program	243	Teacher	Working with the other teachers from my school to come up with a PBL.
WIP-2 Program	244	Teacher	Deeper understanding of biotechnology and a different way to look at the PBL process.
WIP-2 Program	245	Teacher	Models and labs-- and seeing complex science come alive.

Grant	ID	Survey	Comments about the most positive aspects of the IMSP
WIP-2 Program	250	Teacher	I have gained a lot of great resources and met a lot of great people to network with.
WIP-2 Program	251	Teacher	Getting an ipad
WIP-2 Program	252	Teacher	Being able to provide my students with hands-on applicable activities that the students can relate to and understand
WIP-2 Program	253	Teacher	I have learned new teaching techniques.
WIP-2 Program	254	Teacher	Better understanding of math and understanding of how it's all connected-----algebra, geometry, etc. Seeing a variety of ways to come to an answer. Promotion of thinking skills.
WIP-2 Program	255	Teacher	So far I have only gone through the two week training. I look forward to implementing what I have learned so far.
WIP-2 Program	256	Teacher	I was able to learn numerous things each day that I will take with me as a teacher. I was teaching my family members my new-found knowledge each night.
WIP-2 Program	257	Teacher	Vertical Alignment and peer collaboration.
WIP-2 Program	260	Teacher	I learned so much about math, was able to collaborate with other teachers and received great technology to use in my classroom. Each was equally important to me.
WIP-2 Program	261	Teacher	It was great to see the excitement about mathematics grow in the group throughout the training.
WIP-2 Program	264	Teacher	Working with and learning from other professionals in the field of education.
WIP-2 Program	266	Teacher	I appreciate the manipulatives that I received for my classroom and the document camera is a blessing.
WIP-2 Program	267	Teacher	I appreciate the manipulatives that I received for my classroom and the document camera is a blessing.
WIP-2 Program	269	Teacher	My students are benefiting from my increased knowledge. I feel I am a better teacher now.
WIP-2 Program	270	Teacher	I teach Science and Math to special Ed and struggling learners. The ability to be included in the MIPS grant was a huge benefit to my students and myself. I have practical application and VERY applicable technology that I use daily this year in my classroom.
WIP-2 Program	272	Teacher	Broadened my ideas of different ways to implement math in the classroom

Grant	ID	Survey	Comments about the most positive aspects of the IMSP
WIP-2 Program	275	Teacher	The most positive aspect of my participation was the hands on activities and the way my mentors addressed my concerns for implementation in my classroom.
WIP-2 Program	277	Teacher	Teachers were given high quality instruction.
WIP-2 Program	279	Teacher	It both introduced and clarified a lot of information regarding renewable energy. The labs were a lot of fun and would be something that students would really enjoy and benefit from.
WIP-2 Program	281	Teacher	Learning new methods and ideas on how to teach science

Table 28. Comments about improving IMSP

Grant	ID	Survey	Comments about improving your IMSP's year of implementation
MS Program	3	IHE	more updates/communication with participants about activities
MS Program	4	IHE	The IMSP can be improved by having even stronger administrative ties with the LEA Partner District Offices.
MS Program	7	IHE	This year could have been improved by more NIU faculty from education dedicated to helping students with Action Research projects.
MS Program	10	IHE	Continued long-term funding, plus rigorous state-level assessment, esp. in teachers' STEM content. Those who participated in the IMSP projects should be given more official opportunities to demonstrate their successes so that the public may change their bias against K-9 teachers, esp. in math and sciences.
MS Program	15	IHE	In the future, more expedient access to the ISAT data from the partnering school district would be helpful.
MS Program	17	IHE	To see the program continued.
MS Program	21	IHE	In retrospect, it looks like some of the Algebra courses in the program would be better placed later in the program. The courses were very challenging for the teachers.
MS Program	22	IHE	Better understanding of the program by the upper administration.
MS Program	23	IHE	Additional funding.
MS Program	27	IHE	Pay for fees

Grant	ID	Survey	Comments about improving your IMSP's year of implementation
MS Program	28	IHE	We combined math and science into one program, based on the rules of the MSP's RFP when we applied. However, if we were to do this again, we would have options for teachers to delve into math or science in more depth, depending on their area of interest (we would have some common courses for all teachers and then some course options). We also felt pressure to involve faculty from the math and sciences department, but the quality and relevance of courses we got from them was uneven. We have evidence to show that a math methods/content hybrid course (taught by a math ed faculty member in education) was far more effective for our teachers than a mathematics content course alone. Given that K-12 math education expertise at our university is in the college of education and not the math department, and given that teachers desperately want relevant mathematics content and methods, I would encourage flexibility in future RFPs so that the best professors can teach the most helpful courses for teachers, regardless of what department they are in (in other words, mandating mathematics professor involvement doesn't work well at our university -- this doesn't serve the teachers' needs well).
MS Program	30	IHE	Continued work to develop a stronger partnership with school districts. Work to make certain that there is a stronger connection between the content instruction and pedagogy. Make certain that the appropriate content and pedagogy faculty work with us in developing courses-- we had a number of good faculty but some of them weren't appropriate for the program's needs. Move the action research earlier in the program (but this might not work due to the need to develop a trust relationship with the teachers).
MS Program	32	IHE	Recruitment of new teachers (from WI as well as IL, and maybe further afield) into the program, or at least into some of the science courses, now that first cohort has graduated.
MS Program	38	IHE	The continuity of external funds
MS Program	42	IHE	Continued funding to keep it going!
MS Program	44	IHE	The challenges we have identified and responded to
MS Program	48	IHE	Knowledge of continued support from Illinois.
MS Program	50	IHE	Nothing at this time
MS Program	55	IHE	The new leadership would have organized the courses and requirements so that the participants could have had a more positive cohesive experience. Making sure that participants are aware that being involved in a STEM grant would require them to learn new content in math, science, and technology beyond what they might teach might improve their attitude when taking such courses.

Grant	ID	Survey	Comments about improving your IMSP's year of implementation
MS Program	63	IHE	If more of the school districts became full partners.
MS Program	65	IHE	IMSP would work better if the funding process where not so difficult on the directors of the program from the university side of things. It takes a long time to understand the process of obtaining the funding available from the university even though the grant has been awarded.
WIP-1 Program	1	IHE	Plan for selection of appropriate candidates.
WIP-1 Program	5	IHE	Improved process for approving program candidates
WIP-1 Program	6	IHE	Continuation of this workshop with credit bearing opportunity
WIP-1 Program	16	IHE	The number of assessments and related tasks for the grant partners and participants has increased greatly and a clearer, more streamlined and more focused process would be more effective.
WIP-1 Program	17	IHE	All the paperwork and assessments are very time-consuming and a bit of a 'downer' for the teachers.
WIP-2 Program	3	IHE	NA
WIP-2 Program	4	IHE	Strengthen funding and follow-up workshops; recognize the growing knowledge of classroom teachers.
WIP-2 Program	5	IHE	The only things I see at this point are the fine-tunings that come with repeated offering of a program.
MS Program	3	Industry	Not sure.
MS Program	7	Industry	More information should continuously be provided to the mentor concerning the graduate student's academic progress, course load, and other projects as related to the student-mentor partnership in order to identify areas in need of attention proactively.
MS Program	8	Industry	Sensitivity to the difference between per-participant costs and fixed costs.
MS Program	9	Industry	Nothing

Grant	ID	Survey	Comments about improving your IMSP's year of implementation
MS Program	11	Industry	Somewhat more frequent communication to partners by directors of what is going on with the project in general terms.
MS Program	14	Industry	Strong expectations for teachers to try as much as possible from what they've learned in the classroom.
WIP-1 Program	7	Industry	It would be helpful to align topics with the common core learning standards.
WIP-1 Program	9	Industry	More planning time.
WIP-2 Program	1	Industry	Ongoing commitment to a model that is working rather than changing models. Every community is different.
MS Program	5	School	A more flexible curriculum to meet the needs of each district and teacher.
MS Program	6	School	Continued support from ISBE and DOE for STEM ideology
MS Program	12	School	I can't think of anything that would improve our IMSP partnership; everything has been great.
MS Program	17	School	Expand the program.
MS Program	20	School	I believe that the most important action that needs to take place for implementation is making sure our New Superintendent knows about this program.
MS Program	28	School	I think the program should have more visibility in the district. I think that some of the courses should be revised to be more thoughtful of how those subjects are applicable to elementary education. Some courses that contain too much content should be split so that students can get a deeper understanding of the content matter.
MS Program	30	School	Look at the distribution of the classes. I think more math would have been beneficial for elementary. Another of the Language of Math classes would especially be helpful. If something has to be sacrificed, the depth in which we learned some of the sciences was too deep for elementary teachers. The initial leadership class was also something which could have been replaced with another content class.
MS Program	31	School	We need to have more teachers involved and we need to have the same district administration involved rather than changing representation each year.
MS Program	33	School	Making sure in the future there is always a mentor person or possibly more than one assisting the college faculty in the math courses. We had one in this program and I think that really needs to continue.

Grant	ID	Survey	Comments about improving your IMSP's year of implementation
MS Program	39	School	Strong University leadership. The University had trouble removing the leadership of the IMSP in a timely manner. I think that a University supervisor checking in on her would have helped.
WIP-1 Program	3	School	More time to recruit participants.
WIP-2 Program	4	School	Updates on technology, material and resources for the classrooms.
MS Program	1	Teacher	Development of professor curriculum and laying out the expectations to the students in the cohort and let them know it is a privilege to be here and if you can't handle it, leave.
MS Program	4	Teacher	N/A
MS Program	5	Teacher	A clear outline of the courses of instruction. I understand that this was a first trial for the program overall it went well, but I know there are some areas of improvement such as the course alignment.
MS Program	7	Teacher	Have more classes to help with the action research portion of the requirements.
MS Program	8	Teacher	Providing to the students, up front, a complete list of all courses and the semesters they will be taking them. We did not expect to be going through the 3rd summer of the program. At the beginning, we were told our program would be done in the spring of 2011, but now we are being told 2 additional classes are required before we have fully completed the program. This was NOT told to us originally when we made a decision to be a part of this.
MS Program	9	Teacher	See comment above.
MS Program	11	Teacher	organization of courses and adapt them to specific high school or elementary teachers, instead of all teachers together
MS Program	12	Teacher	Flexibility in the types of courses that could be chosen for this program. More interfacing by the district officials.
MS Program	14	Teacher	time

Grant	ID	Survey	Comments about improving your IMSP's year of implementation
MS Program	15	Teacher	The order the classes were taught and the summer courses. Statistics and Research proposals were too lengthy and too much content to be taught in a 6 week summer course (where each one of those classes was only 3 weeks!). More continuity with action research needed. The project was very piece-meal. Some instructors were into 'memorizing' information from a text book and taking closed book exams on content. I feel like the goal of the program should be more about collaboration, sharing, and working together to achieve common goals than just memorizing a flow chart or text.
MS Program	17	Teacher	Make it for graduate students in educating science, not to get educated in the sciences.
MS Program	18	Teacher	I cannot think of any areas in which this program is lacking.
MS Program	19	Teacher	Clear objectives and expectations.
MS Program	20	Teacher	Nothing
MS Program	21	Teacher	I think the planning committee would learn the types of students WE are working with, and keep them in mind when collaborating with the University on what is to be taught in each class. A few of the Professors stood in front, read from their PowerPoint presentations and never checked to see what the results of the instruction was.
MS Program	22	Teacher	Make sure that the professors plan their lectures and don't put down the teachers or patronize them. If we must learn it, teach it! We are educators, which mean WE ARE Life-long Learners!
MS Program	24	Teacher	Professors that understood their audience. No, we are not engineering students and no, our student population bears little to no resemblance to your childhood or that of your honors-student-children.
MS Program	25	Teacher	More time with the students...
MS Program	26	Teacher	I would of had our principal on board with what currently was happening in the program. They needed to be sold on IMSP and have them evaluate us instead of observation visits. They expect us to have a magic wand, but they do not know its philosophy.
MS Program	27	Teacher	Everything is going great. I do not see anything to improve at this time.
MS Program	28	Teacher	Sometimes it was difficult planning because it was the first year of the program and they were working through the problems.

Grant	ID	Survey	Comments about improving your IMSP's year of implementation
MS Program	30	Teacher	A free subscription to IMSP type magazines to help me stay current now that I've graduated.
MS Program	31	Teacher	A change in the way the content is delivered. It would have been great to learn in the classroom for a few weeks, then go into 'the real world' to see it all in action. The staff that is selected to teach the courses also need more training on effective teaching techniques, particularly when teaching other educators.
MS Program	32	Teacher	working in a district that supported its implementation
MS Program	41	Teacher	This is the third year of implementation. I wish there was a way to turn these courses into semester long courses as opposed to year-long courses. I don't know why the courses can't be shorter yet more intense.
MS Program	46	Teacher	I would like to see the district create more math leadership leader positions, as they have already done for literacy leaders.
MS Program	47	Teacher	more technology
MS Program	48	Teacher	Movement away from high-stakes testing.
MS Program	52	Teacher	A better presentation of the action research project.
MS Program	54	Teacher	I would like to see more science or connections between math and science.
MS Program	56	Teacher	Giving teacher tools that can be used in the classroom. The resources that were provided were awesome and quality of materials. They were well selected.
MS Program	68	Teacher	I think if there were other participants in the program from my building it would be easier to implement ideas in all the classrooms.
MS Program	74	Teacher	nothing at this time
MS Program	77	Teacher	communication between IMSP and the school district (including participants' schools)
MS Program	83	Teacher	Improved course scheduling.

Grant	ID	Survey	Comments about improving your IMSP's year of implementation
MS Program	85	Teacher	Greater opportunities to participate for more educators.
MS Program	88	Teacher	Some type of support from school administration. School administrators that focus on students learning rather than test prep instruction.
MS Program	94	Teacher	n/a
MS Program	96	Teacher	I learned and implemented new strategies to teach math.
MS Program	98	Teacher	Nothing… wonderful experience
MS Program	100	Teacher	N/A
MS Program	110	Teacher	Appropriate materials and support
MS Program	112	Teacher	I believe that adding the option to receive endorsements in mathematics and science instruction would greatly improve the appeal of the program and also the benefits that come from completing the program.
MS Program	115	Teacher	The time to collaborate with others professionals and visit their classrooms.
MS Program	116	Teacher	More time to teach! :-)
MS Program	118	Teacher	Even out the science/math classes lose the Ed. philosophy classes
MS Program	119	Teacher	If I could spend less time teaching language arts and more time teaching math and science, I could better implement IMSP
MS Program	120	Teacher	The opportunity to plan and implement the ideas.
MS Program	121	Teacher	More hands on activities and additional resources for future teaching
MS Program	123	Teacher	It is wonderful as it is. Keep it going!

Grant	ID	Survey	Comments about improving your IMSP's year of implementation
MS Program	124	Teacher	More students will allow more growth
MS Program	126	Teacher	We were an experimental group so I understand this was not possible, but - Having all the requirements laid out ahead of time for each class would be very helpful.
MS Program	141	Teacher	A more solidified time line with courses spread out so that the last year, particularly the last semester is not such a heavy workload. All classes that are needed are offered at time that they can be taken by the group more than once during the program. Especially, those that may only be required for some members of the cohort group.
MS Program	151	Teacher	Access to funds for my classroom to help integrate technology as my school district's resources are very limited.
MS Program	155	Teacher	I wish my school knew more about IMSP and at an administrative level that they would implement something!
MS Program	156	Teacher	More help from professors on the research that will take place this summer - to develop it.
MS Program	157	Teacher	More opportunities to share learning/instructional activities as a group
MS Program	158	Teacher	nothing
MS Program	162	Teacher	Not sure.
MS Program	163	Teacher	More detailed upfront explanations of expectations and exact class time.
MS Program	164	Teacher	A clearly defined end goal.
MS Program	168	Teacher	Applicability; Usefulness; Consideration of teacher's schedules
MS Program	169	Teacher	Clearer goals communicated to participants at beginning of process
MS Program	171	Teacher	If the courses were planned better. Not giving us a syllabus 9 weeks into a course. Also, it would be nice to actually talk about pedagogy if we take a Math pedagogy class.
MS Program	172	Teacher	I would like to have a class that shows me how to be a better teacher in relation to teaching strategies and ideas for lesson planning.

Grant	ID	Survey	Comments about improving your IMSP's year of implementation
MS Program	174	Teacher	If this is the best program that SIU can offer for high school math teachers to become better math teachers and improve are low scores then our educational system will not turn around. This program should not be billed as Secondary Education but just a graduate level math program. There is NO connection to the Secondary Education field.
MS Program	175	Teacher	Getting experiences with STEM industry experts.
MS Program	176	Teacher	Addressing STEM and mathematics specifically.
MS Program	178	Teacher	More integration with professionals outside of the education field.
MS Program	180	Teacher	More time
MS Program	181	Teacher	Technology. Our school lacks STEM technologies. It makes it impossible to teach STEM without the much needed technology,
MS Program	189	Teacher	Some of the assignments need to be redesigned to include more technology and ways to adapt to our own classes.
MS Program	196	Teacher	More of how to incorporate the math & science into my classroom and instruction.
MS Program	198	Teacher	More content classes, fewer 'leadership' classes.
MS Program	199	Teacher	Different staff and more organization; Less excuses when things happen poorly
MS Program	200	Teacher	A shorter program (2 years), a more intense focus on strategies in the math classroom, grant writing or other project instead of action research (many of the teachers in the program were not teaching math or science...how could they do the project, pre or posttest students?). Also, drop the secondary math endorsement unless the teachers in the program will be expected to complete courses above calculus.
MS Program	202	Teacher	The testing required by the state in our classrooms need to change. We cannot lose two instructional days just to give that test. It is detrimental to students learning. They need to use tests that are already in place in the school (final exams, PSAE...)
MS Program	203	Teacher	Better leveling of classes in the content area...students were all over the place in terms of expertise. This was not fair to everyone in the program!!!

Grant	ID	Survey	Comments about improving your IMSP's year of implementation
MS Program	209	Teacher	Get teachers that can teach the material...not necessarily know the material.
MS Program	211	Teacher	Separate cohorts for middle school, elementary, and high school. The ability levels were too different. In some of the math classes students were bored while others had to work extra hard to stay on track. Less paper work and no pre-posttests. I don't believe these tests truly show what we are doing in our classrooms. More collaboration time with each other. I feel we have a lot to share but were never given the time.
MS Program	212	Teacher	Listen to US!!
MS Program	215	Teacher	IDK
MS Program	217	Teacher	Have classes that are not insulting to the intelligence of the student and provide information that can be used in the high school classroom.
MS Program	218	Teacher	More content classes.
MS Program	220	Teacher	I believe this is the last year of implementation.
MS Program	221	Teacher	organization and communication on the institution side
MS Program	226	Teacher	Very long program. Started fall 2008 should finish this summer.
MS Program	227	Teacher	Lessen the focus on historical perspectives and to continue to focus of practical courses that are applicable in the classroom. Continue the weaving of technology and science in each class.
MS Program	233	Teacher	I would say no more than a single course in a semester. That said, I also realize the need for completing the program within a timely period, so it's possible that more than one course in a semester is unavoidable. I am thankful that it only happened twice. The spring semester was definitely more do-able than the fall.
MS Program	235	Teacher	More leadership focus and actual instruction based classes, rather than pure content classes.
MS Program	242	Teacher	Please reevaluate the outcomes. STEM as a pure educator is the wrong path and will injure the curriculum in all areas.
MS Program	245	Teacher	School District support

Grant	ID	Survey	Comments about improving your IMSP's year of implementation
MS Program	248	Teacher	More outside resources
MS Program	249	Teacher	more available lessons
MS Program	251	Teacher	It would be awesome if we could put the technology into the student's hands, via laptop computers.
MS Program	253	Teacher	Continued evolution of coursework and additions to curricula.
MS Program	255	Teacher	teacher participation and dedication to the program-there has been some loss of teacher participants
MS Program	256	Teacher	nothing
MS Program	261	Teacher	I would suggest that a review of all instructors and syllabi be reevaluated for reaching the expectations presented by the original overview. The conditions of STEM leadership was not met. Make sure they are in the future.
MS Program	262	Teacher	Communication and organization.
MS Program	270	Teacher	Having resources available that we can use.
MS Program	271	Teacher	Stronger leadership of the program could have made a huge difference. Organization to improve how classes are scheduled and who will be teaching them. We had multiple last minute classes scheduled with professors who had been told just days before class started not selected for their excellence in STEM related fields. Changes in the coursework required for this partnership to actually impact teaching methods.
MS Program	272	Teacher	Improving and updating technology in our school.
MS Program	273	Teacher	Get eat more geared to middle school learning techniques. Much of what I learned I will not be able to use.
MS Program	274	Teacher	The biggest improvement in the program would be to have an educator who has been through the program to help teach and design future classes. They know their audience. I would also begin the program teaching the world as an open system. Give a basic overview of the hydrosphere, geosphere, biosphere, atmosphere, and the heliosphere. From there I would teach geology, biology, astronomy, and ecology. It would give a springboard in which to hook onto their knowledge.
MS Program	276	Teacher	Better Organization and a stronger vision.

Grant	ID	Survey	Comments about improving your IMSP's year of implementation
MS Program	278	Teacher	Access to more core content classes
MS Program	280	Teacher	Being a little more clear about the plan laid out from the beginning. I think over time, this will naturally figure itself out. However, being in the first group was not without its speed bumps.
MS Program	282	Teacher	A more set cohort pattern of classes, it has been sort of last minute as to what classes would be offered when.
MS Program	285	Teacher	Having plans and closes set up a head of time make sure there are no problems with classes to take.
MS Program	286	Teacher	My content knowledge.
MS Program	287	Teacher	Having more advanced Biology courses in the program.
MS Program	289	Teacher	Make grad level classes available that actually use the technology (clickers, probes, etc.) regularly throughout the course of a semester
MS Program	291	Teacher	more time for planning
MS Program	296	Teacher	Greater district support.
MS Program	299	Teacher	More collaboration and more content area coursework
WIP-1 Program	4	Teacher	Have schedule already in place and follow it. Second year ran much smoother than first year.
WIP-1 Program	8	Teacher	Continued dialogue with IMSP experts.
WIP-1 Program	10	Teacher	time to work on new lessons
WIP-1 Program	21	Teacher	Some improvement in organization and follow up would make this a more effective program.
WIP-1 Program	23	Teacher	Additional classroom technology

Grant	ID	Survey	Comments about improving your IMSP's year of implementation
WIP-1 Program	24	Teacher	I need to work on incorporating IMSP activities further into my lesson planning.
WIP-1 Program	25	Teacher	THERE WAS NOTHING TO BE IMPROVED ON.
WIP-1 Program	26	Teacher	I think it is fine the way it is.
WIP-1 Program	27	Teacher	Hands on experience like we had was crucial.
WIP-1 Program	33	Teacher	Continued collaboration.
WIP-1 Program	41	Teacher	Lab materials
WIP-1 Program	43	Teacher	It was perfect! I only wish we had round 2 this summer.
WIP-1 Program	49	Teacher	It was a lot of information to digest on some days and would have been better if some of the leader days were more targeted to teachers at the start...this was hard since we had to learn a whole new program (which happened later on when he took our requests!).
WIP-1 Program	50	Teacher	The school needs a computer lab with this program installed that is available to all students.
WIP-1 Program	52	Teacher	none
WIP-1 Program	56	Teacher	Having more time to work with others in the group towards creating activities and lessons so that we are truly working with a group of each area in STEM.
WIP-1 Program	57	Teacher	having access to a computer lab where Autodesk Inventor was loaded on all the computers
WIP-1 Program	58	Teacher	I would love for the program to expand and continue. I think we have just begun to explore the benefits of this program.
WIP-1 Program	61	Teacher	Locally, we need the program installed on more machines, which is completely doable. With regards to the program as a whole, I could use a little more help in thinking of creative applications for the classroom that are not too cumbersome or technical. I've come up with several this year, but feel like there are a lot more possibilities out there.
WIP-1 Program	67	Teacher	NONE

Grant	ID	Survey	Comments about improving your IMSP's year of implementation
WIP-1 Program	68	Teacher	I believe the focus should be more on math and science teachers and that it should incorporate working together more within a district or department
WIP-1 Program	76	Teacher	Provided with more activities that can easily be applied to the classroom.
WIP-1 Program	82	Teacher	New materials and concepts were acquired.
WIP-1 Program	86	Teacher	I had no problems that stick out in my mind.
WIP-1 Program	87	Teacher	I feel that a continued work with the IMSP would improve my (anyone's) classroom techniques.
WIP-1 Program	90	Teacher	i was so overwhelmed with the awesomeness of the program, that I can't even imagine an improvement.
WIP-1 Program	92	Teacher	Improved lab at my school (Lab hood does not even work!)
WIP-1 Program	95	Teacher	TIME to look through the gazillion of materials and labs
WIP-1 Program	98	Teacher	more hands on experiences thru field trips
WIP-1 Program	101	Teacher	I would like to see more time devoted to the science portion. It seemed to be more weighted toward the math
WIP-1 Program	102	Teacher	If I got a job as a science or math teacher, because I currently teach literature
WIP-1 Program	106	Teacher	More time to be able to implement.
WIP-1 Program	107	Teacher	materials to use in the classroom
WIP-1 Program	108	Teacher	Clearer expectations from the start of the volume of work necessary to complete the action research during the school year.
WIP-1 Program	111	Teacher	Continue to fully fund it. I'm concerned that with all of the state’s cuts that this may not happen. I cannot afford to pay for state conferences and professional memberships. The funding through IMSP allows for more teachers to participate in professional conferences and memberships.

Grant	ID	Survey	Comments about improving your IMSP's year of implementation
WIP-1 Program	112	Teacher	Nothing that I can think of.
WIP-1 Program	114	Teacher	I think more of a focus upon supplying teaching supplies to teachers would be an excellent start. The trips to the glade, junk yard and other places while interesting is of limited benefit. I think you need to focus the grant so that student engagement through technology becomes the primary focus.
WIP-1 Program	115	Teacher	There was a delay in getting the NSpires and the Navigator, so we received training months before we had the equipment. Most of us needed to be retrained once it arrived. This was not the fault of the ROE, but rather the companies distributing the material. Also the bidding process to get supplies is time-consuming and really delayed the program. That is the state's issue.
WIP-1 Program	117	Teacher	More communication. With the leaders, with the other participants. More organization.
WIP-1 Program	118	Teacher	I thought the required amount of time (in years) was long... longer than I realized when I signed on.
WIP-1 Program	120	Teacher	Input by cooperating teachers
WIP-1 Program	127	Teacher	The matching of resources from our districts would really assist in carrying out activities and provide additional supplies.
WIP-2 Program	1	Teacher	More course offerings.
WIP-2 Program	2	Teacher	giving teachers the opportunity to advance
WIP-2 Program	3	Teacher	The opportunity to adapt our current district mat program to the wealth of materials and ideas that IMSP provided us.
WIP-2 Program	6	Teacher	I believe that more contact, and more partners would improve my IMSP's implementation. There is a multitude of businesses that are science related that could enhance my students education, as well as show them real-life connections.
WIP-2 Program	8	Teacher	It is already very well arranged and organized.
WIP-2 Program	13	Teacher	Nothing!
WIP-2 Program	14	Teacher	Nothing at this time. It was adequate.

Grant	ID	Survey	Comments about improving your IMSP's year of implementation
WIP-2 Program	16	Teacher	New equipment implementation takes time and preparation, seems like we never have enough time to adequately prepare.
WIP-2 Program	17	Teacher	I will need to devote time each week to lesson planning and further prep with resources to more fully implement STEM activities into my curriculum this school year.
WIP-2 Program	21	Teacher	To have a full time tech person. If you want us to use technology then let us implement it.
WIP-2 Program	22	Teacher	longer class periods
WIP-2 Program	23	Teacher	Connection with mentors outside of the IMSP training period for both myself and my students.
WIP-2 Program	25	Teacher	The school has to be behind the teacher. I felt I did all the hard work so the district could get some new technology. I needed some improvements to my room to help me use the technology and the school didn't provide them until I needed to do my action research project.
WIP-2 Program	27	Teacher	More relevant speakers.
WIP-2 Program	31	Teacher	Having my administrator at the training with me.
WIP-2 Program	32	Teacher	Planning and execution of the program I was trained on this summer.
WIP-2 Program	34	Teacher	I believe having a [name] specialist from the staff - come to our school - and speak during parent information night , as well as, fielding questions from parents would help appease any parental concerns and possibly positively improve and promote the initial implementation.
WIP-2 Program	35	Teacher	If the sixth grade books were slip into math and science sections, I would be more likely to use the curriculum. As a 6th grade math teacher, it is difficult to implement the curriculum when we are short on time and the material is more science heavy.
WIP-2 Program	36	Teacher	I believe that rethinking NCLB would most improve implementation. Though I am a teacher, I believe that true 100% proficiency is simply a pipe dream.
WIP-2 Program	37	Teacher	Outside support.
WIP-2 Program	39	Teacher	The loan of supplies and other instructions on how to expand the use of material I already have received.
WIP-2 Program	45	Teacher	Using the technology with my students.

Grant	ID	Survey	Comments about improving your IMSP's year of implementation
WIP-2 Program	46	Teacher	Making science test scores actually count for something.
WIP-2 Program	48	Teacher	If you give us the pre/posttest and one for the students then you should also give us activities and labs to use to be a valid test of what we and our students get from the presented information- a better way to see if presented information increases the students/teachers knowledge or way of presenting the material. GET A DIFFERENT BOOK!
WIP-2 Program	49	Teacher	More autonomy and less top-down curriculum.
WIP-2 Program	53	Teacher	Access to more mentors both for me as a teacher and for my students.
WIP-2 Program	57	Teacher	If I had more support from the administration in my school, it would have a chance to grow.
WIP-2 Program	66	Teacher	Not sure at this time. Classes have not yet resumed.
WIP-2 Program	67	Teacher	Not sure
WIP-2 Program	69	Teacher	Time line. My only complaint, due to the many snow-day impacted schedules, our school year ran up to the first day of the workshop. Then 10 days of math. We could have used at least one day for a break before we began.
WIP-2 Program	70	Teacher	Be sure to set aside time for the facilitators to review what we need to do for the year.
WIP-2 Program	73	Teacher	It would be nice if there were a contact sheet for the people who were in our class. We meet a lot of great teachers that would make great contacts to ask questions, get ideas, etc.
WIP-2 Program	74	Teacher	Quicker follow-up to begin the new year.
WIP-2 Program	78	Teacher	Continuing development with colleagues / partners in this IMSP
WIP-2 Program	79	Teacher	Not sure. There was a lot of information in a short amount of time. Sometimes it felt like we were in brain overload. The instructors were always very helpful though.
WIP-2 Program	82	Teacher	clearer objectives
WIP-2 Program	91	Teacher	A clearer definition of what is expected of the participants for the action research project.
WIP-2 Program	94	Teacher	Nothing at this time....maybe in the future extra time to collaborate with different grade levels

Grant	ID	Survey	Comments about improving your IMSP's year of implementation
WIP-2 Program	96	Teacher	Time. Sometimes it is difficult to integrate new STEM material if it does not directly apply to the curriculum that is being taught in the classroom in order to have students perform well on the state tests.
WIP-2 Program	97	Teacher	More focus on implementation options for our classes
WIP-2 Program	98	Teacher	I would have liked to receive material to bring back to my classes.
WIP-2 Program	102	Teacher	Keep the program for future participants!!!!!!!!!
WIP-2 Program	103	Teacher	More time to focus on other activities and not just book work.
WIP-2 Program	104	Teacher	The state of IL would need to relax some of the pressure placed on teachers for students to well on ISAT tests.
WIP-2 Program	105	Teacher	Longer class periods. Our classes are only 42 minutes and many of the activities would be difficult to complete in this short amount of time.
WIP-2 Program	109	Teacher	projects should be discussed thoroughly the first day
WIP-2 Program	112	Teacher	More time in the day.
WIP-2 Program	116	Teacher	More time in the school day
WIP-2 Program	120	Teacher	More time to develop and implement lessons.
WIP-2 Program	121	Teacher	continuing the program to help my follow-through
WIP-2 Program	122	Teacher	I was very satisfied with the program.
WIP-2 Program	124	Teacher	Organization of staff....some staff disagreed with other staff on projects, so it was unclear to students what the expectations were.
WIP-2 Program	126	Teacher	Don't expect all members of the class to be fully aware of science techniques if it is going to be open to other subject areas and grade levels.
WIP-2 Program	127	Teacher	More time to complete the work in the summer.

Grant	ID	Survey	Comments about improving your IMSP's year of implementation
WIP-2 Program	130	Teacher	Funding grade specific projects so instructors can focus on specific grade teachers. It is very difficult to be in a mixture of K-12 teachers because differences in training backgrounds and content knowledge.
WIP-2 Program	135	Teacher	More technology.
WIP-2 Program	140	Teacher	I wish we could know more in advance on upcoming projects that are due. I have a family at home and need a lot more time to complete the projects.
WIP-2 Program	142	Teacher	I am happy with everything.
WIP-2 Program	144	Teacher	If negative fellow teachers would be asked to leave the grant after making so many problems instead of just working around them!
WIP-2 Program	146	Teacher	Better organization and documentation of requirements given to the participants in advance rather than continuously changed throughout the program.
WIP-2 Program	147	Teacher	I am satisfied with the implementation of STEMs.
WIP-2 Program	148	Teacher	Technology is not the best in my district/school.
WIP-2 Program	149	Teacher	Nothing.
WIP-2 Program	150	Teacher	More support from my local district
WIP-2 Program	158	Teacher	n/a
WIP-2 Program	159	Teacher	nothing
WIP-2 Program	162	Teacher	I would like to have a document reader that will show books and materials to the whole class. These have been used to demonstrate things in our workshops, so I could use it the same way.
WIP-2 Program	165	Teacher	I feel our local IMSP has been implemented in the most efficient and effective fashion!
WIP-2 Program	167	Teacher	I think all the dates should have been set up from the beginning. Every time we get together we are having to work around everyone's schedules to find a date that works for everyone. If they had been set from the beginning, everyone would know when they had to be free for these engagements.
WIP-2 Program	169	Teacher	I can't think of anything.

Grant	ID	Survey	Comments about improving your IMSP's year of implementation
WIP-2 Program	170	Teacher	Having ready-made material and wonderful incentives readily available is always helpful in improving anything! Teacher friendly materials and information as well as student friendly materials that are fun, fun, fun!
WIP-2 Program	172	Teacher	More teacher participation
WIP-2 Program	174	Teacher	The availability of materials. I also feel a resource book would have been helpful. It could have included lessons that could be used in the classroom.
WIP-2 Program	175	Teacher	More resources that are in my school district so that they are easily accessible. I really appreciate the money that was given to our school to purchase supplies. It was very generous and will make it much easier to teach project based engineering lessons in my classroom, however we could not purchase everything that we would have liked to have to implement all the lessons. For instance, my team decided to use our materials money to buy the supplies needed to teach the lessons about simple machines. We did not have enough money to get the materials to teach about robotics.
WIP-2 Program	176	Teacher	more hands on materials and lesson plans
WIP-2 Program	178	Teacher	Get more teachers involved.
WIP-2 Program	179	Teacher	support from my own admin
WIP-2 Program	183	Teacher	Teachers having the resources to teach it in the right way.
WIP-2 Program	185	Teacher	Instruction from the Professors.
WIP-2 Program	191	Teacher	Having math workshops during the school year to help me retain, and learn more math facts than I already know. Something to continually keep me on my toes in the subject of math.
WIP-2 Program	202	Teacher	Additional time teaching this content. I have three to four weeks to teach all of space science.
WIP-2 Program	207	Teacher	Clear expectations (field trips, research papers, etc.) from the beginning.
WIP-2 Program	209	Teacher	A little less busy work in the write up.
WIP-2 Program	210	Teacher	I continue to be a little anxious about the lesson study process. It is taking me out of my comfort zone-which will benefit my overall instruction. I hope the peers in my group are willing to meet during the weeks ahead to plan observed lesson.
WIP-2 Program	212	Teacher	Reflecting on the entire process and revising our design to set out models to share with teachers regarding the use of LTs in classroom planning and instruction.

Grant	ID	Survey	Comments about improving your IMSP's year of implementation
WIP-2 Program	219	Teacher	It would have been great to have a team member from each grade level of my school participate.
WIP-2 Program	220	Teacher	I would love to see a book with the trajectory levels and methods of assessment along with lessons to build upon the determined trajectory levels issued to each participant.
WIP-2 Program	227	Teacher	Nothing. It was a great program.
WIP-2 Program	238	Teacher	Having a willing and able teaching team at my school
WIP-2 Program	239	Teacher	Clarity on expectations and objectives. More structure added to the program. Also proper training in areas of technology.
WIP-2 Program	241	Teacher	A little more time for collaboration and lesson planning for the teachers within the school as well as within our school district to understand how we can deliver and present this information to our students and maximize our resources throughout the school.
WIP-2 Program	242	Teacher	I would not change a thing.
WIP-2 Program	243	Teacher	Just being more organized and not incorporating too much in one day. I felt like we were very rushed and just packed with too much information. I don't feel we had enough time to implement the PBL this year. I think this year we should have planned with our schools and next year be observed.
WIP-2 Program	244	Teacher	Less time to be 'immersed' in the problem and more time to discuss what we would actually do to approach the problem with students. Being about to talk more about the PBL design process and to discuss the strengths and weaknesses of the PBL we did and to reflect on ways we would change it for implementation with our own students
WIP-2 Program	245	Teacher	Money for models and labs is always helpful-- we did receive a couple hundred dollars and that really will help-- but materials are pretty costly. But I am really grateful for what we have gotten already.
WIP-2 Program	248	Teacher	a more general outlook on projects and not make us focus just on obesity
WIP-2 Program	250	Teacher	I feel that there was quite an information overload over the 2 weeks. All the speakers were great, but by the end of the day I felt overwhelmed and unsure of what to do. If we could have had more time to collaborate with all of the participants to work on our projects, get feedback, and bounce ideas off of, that would've been ideal.
WIP-2 Program	251	Teacher	Getting an iPad with 3G capabilities.
WIP-2 Program	252	Teacher	Continue to provide more labs/demos/activities throughout the year for us to take back to the classroom
WIP-2 Program	253	Teacher	Practice. Over time I will use more of the resources and techniques in my teaching as I become more comfortable and confident with them.

Grant	ID	Survey	Comments about improving your IMSP's year of implementation
WIP-2 Program	256	Teacher	Access to some curriculum ideas and resources that teach according to common core AND had activities with each topic using manipulatives or hands on activities.
WIP-2 Program	257	Teacher	Continued workshops.
WIP-2 Program	260	Teacher	Having more time to absorb the information before learning a new concept would be helpful, however, I was glad to have the programs first ten 'learning days' finished within a 2 week time frame. Maybe teachers should be given a choice as to how they would prefer the course to be taught...over two weeks or three.
WIP-2 Program	261	Teacher	District wide participation, in addition to the large group of math teachers currently involved.
WIP-2 Program	266	Teacher	Time. There never seems to be enough time to include all that I want in instruction.
WIP-2 Program	267	Teacher	Time. There never seems to be enough time to include all that I want in instruction.
WIP-2 Program	270	Teacher	Continued involvement and collaboration.
WIP-2 Program	277	Teacher	High accountability; reinforcement of the curriculum we learned
WIP-2 Program	279	Teacher	Additional resources in our school building.

Appendix G

Project Meta-Analysis Results

Table 29. Meta-Analysis Data - Teachers

ProjectID	Pretest Mean	Pretest SD	Pretest Range Low	Pretest Range High	Pretest N	Posttest Mean	Posttest SD	Posttest N	Pearson	Gain	Gain SD	d	d weight
Project 1	9.46	2.74	0	18	22	13.73	1.86	22	0.5	4.27	2.422973	1.762298	12.60045
Project 2	11.46	3.6	4	18	24	14.57	2.9	21	0.572	3.11	3.070283	1.012936	12.95454
Project 3	7.4	1.9	0	12	23	7.6	2.3	25	0.2	0.2	2.674322	0.074785	1.63047
Project 4	15.52	9.274	0	30	25	19.85	7.942	21	0.866	4.33	4.638267	0.933538	12.92217
Project 5	12.65	4.88	0	27	20	16.12	4.6	16	0.72	3.47	3.556583	0.975656	0.113508
Project 6	53.6	11.46	0	95	15	63.93	7.45	15	0.395	10.33	10.9264	0.945416	0.135266
Project 7	13.85	6.84	4	29	20	21.56	6.58	18	0.68	7.71	5.373287	1.434876	10.92461
Project 8	1.85	0.21	0	3	18	2.05	0.32	17	0.5	0.2	0.281603	0.710221	8.386518
Project 9	13	4.5	0	25	25	22	1.23	25	0.82	9	3.561671	2.526904	12.57826
Project 10	15.25	2.98	10	21	24	15.93	3.2	24	0.75	0.68	2.19463	0.309847	6.438934
Project 11	67	19	28	100	29	73	16	18	0.7	6	13.83474	0.433691	7.87556
Project 12	20.57	3.58	12.5	25	14	25.33	2.32	15	0.45	4.76	3.274715	1.453561	7.749935
Project 13	25.17	8.6	10	40	18	35.83	6.41	18	0.69	10.66	6.242934	1.707531	9.929348
Project 14	6.6	0.63	2	10	18	8.6	0.82	18	0.867	2	0.416552	4.801321	5.191672
Project 15	83.19	10.922	0	100	26	85.54	10.164	26	0.918	2.35	4.333636	0.54227	11.13251
Project 16	22.47	4.446	0	30	17	27.65	1.222	17	0.5	5.18	3.97834	1.302051	9.598901
Project 17	-0.012	1.008	-1.664	1.895	31	0.13	0.87	31	0.748	0.142	0.678993	0.209133	5.90859
Project 18	66	13	40	90	26	96	3	26	0.61	30	11.42016	2.626934	12.88748
Project 19	38.88	14.538	0	100	25	87.36	10.436	25	0.52	48.48	12.74662	3.803362	9.510791
Project 20	-0.3	0.6	-1.3	1.2	24	0.33	0.7	24	0.84	0.63	0.38	1.657895	14.19336
Project 21	22.8	7.9	7	35	21	24.1	7.7	10	0.8	1.3	4.936801	0.263328	2.873127
Project 22	13.1	3.2	8	19	12	12	2.8	9	0.67	-1.1	2.464467	-0.44634	-3.16779
Project 23	2.88	2.147	0	7	25	6.08	1.605	25	0.61	3.2	1.726729	1.853215	14.45338
Project 24	289	34	203	392	95	293	39	114	0.7	4	28.64612	0.139635	14.04841
Project 25	37.1	6.6	0	63	17	42.3	8.2	17	0.48	5.2	7.671036	0.677875	7.903255
Project 26	46	14	19	71	24	68	21	15	0.83	22	12.20492	1.802552	10.08979
Project 27	30.1	18.8	0	100	27	62.1	17.9	23	0.25	32	22.48533	1.42315	15.10474
Project 28	60	13.4	40	86	28	89	6.9	16	0.39	29	12.45196	2.328951	10.24071
Project 29	65	40	40	76	8	76	14.66	8	0.781	11	29.98264	0.366879	-0.01185
Project 30	16.88	6.2	6	17	17	20.64	6.9	17	0.68	3.76	5.279129	0.712239	8.121362
Project 31	37.08	9.04	26	70	24	67.2	13.48	24	0.701	30.12	9.622131	3.130284	10.45649
Project 32	38.2	5.5	0	56	19	45.2	2.9	19	0.54	7	4.629687	1.511981	10.89259

ProjectID	Pretest Mean	Pretest SD	Pretest Range Low	Pretest Range High	Pretest N	Posttest Mean	Posttest SD	Posttest N	Pearson	Gain	Gain SD	d	d weight
Project 33	44.6	11.2	0	100	23	83.4	7.7	23	0.54	38.8	9.570308	4.054206	8.165936
Project 34	30.675	8.17	15	47	39	48.8	3.65	39	0.53	18.125	6.961442	2.603627	20.65304
Project 35	53	19.79	15	80	51	67	12.35	51	0.761	14	13.12173	1.066932	0.043925
Project 36	26	6.3471	0	53	8	30.75	3.8078	8	0.85	4.75	3.701161	1.283381	3.238207
Project 37	28.12	4.65	0	39	17	31.88	3.41	17	0.66	3.76	3.509989	1.071229	9.434983
Project 38	15.3	3.6	5	25	26	21.48	4.39	23	0.54	6.18	3.89407	1.587029	14.60329
Project 39	68	10.94	0	100	40	88	5.95	40	0.561	20	9.058242	2.207934	23.11217

Table 30. Meta-Analysis Data - Student

ProjectID	Grade Level Code	Pretest Mean	Pretest SD	Pretest N	Posttest Mean	Posttest SD	Posttest N	Pearson	Pretest Reliability	Posttest Reliability	Gain	Gain SD	d	d weight
Project 1	10	13.09	1.31	11	11.73	1.91	11	0.69	10.37	4.59	-1.36	1.382498	-0.98373	-5.24488
Project 2	10	11.8	4.9	155	14.1	5.3	150	0.539	0.728	0.774	2.3	4.909617	0.468468	63.38973
Project 3	5	220	27	143	228	26.5	149	0.84	0.94	0.94	8	15.13968	0.528413	66.57104
Project 4	7	11.36	4.29	14	14.8	4.417	10	0.724	0.879	0.745	3.44	3.236655	1.062826	5.77344
Project 5	7	248.3	26.5	23	250.7	22.5	23	0.85	0.94	0.93	2.4	13.95976	0.171923	0.445094
Project 6	6	28.9	5.8	49	29.8	4.8	49	0.72	0.93	0.94	0.9	4.073131	0.22096	10.1137
Project 7	4	64.64	12.94	28	87.25	6.28	28	0.67			22.61	9.898955	2.284079	15.16552
Project 8	11	9.8	4	231	12.4	4.4	233	0.1	0.77	0.79	2.6	5.642694	0.460773	95.68671
Project 9	5	12	4.84	66	14.38	5.46	66	0.75	0.811	0.8	2.38	3.687492	0.645425	33.90475
Project 10	8	264	24	120	294	38	118	0.81	0.93	0.93	30	23.29292	1.287945	81.44037
Project 11	5	235.79	38.25	84	266.86	41.66	86	0.91	0.93	0.93	31.07	17.27591	1.798458	55.80536
Project 12	0	6.53	0.96	547	7.6	1.6	444	0.5	0.7	0.9	1.07	1.394848	0.767109	288.9426
Project 13	8	246	26	146	245	26	488	0.92	0.93	0.91	-1	10.4	-0.09615	-21.3183
Project 14	9	26.15	8.682	891	31.6	11.918	891	0.956	0.784	0.883	5.45	4.424617	1.231745	621.7976
Project 15	7	16.07	6.274	130	23.51	6.303	130	0.16	0.83	0.9	7.44	8.150857	0.912787	81.9234
Project 16	8	13.183	5.946	230	14.233	6.33	219	0.821	0.867	0.898	1.05	3.690789	0.284492	60.76756
Project 17	8	49.8	16.3	504	54	14.7	86	0.505	0.671	0.627	4.2	15.48463	0.271237	37.88492
Project 18	10	37	11.34	336	45	14.29	336	0.243	0.263	0.524	8	15.93876	0.501921	148.7412
Project 19	6	229.4	19.2	30	240.3	25.1	31	0.611	0.94	0.94	10.9	20.24213	0.538481	13.19499
Project 20	8	260.18	33.297	131	271.34	31.783	142	0.936	0.94	0.94	11.16	11.73677	0.950858	87.33484
Project 21	8	254.6	26.496	456	267.54	21.54	456	0.833	0.94	0.94	12.94	14.66914	0.882124	287.7968
Project 22	6	1.89	1.09	86	2.65	0.99	86	0.464	0.407	0.419	0.76	1.080183	0.703585	47.03969
Project 23	8	289	34	95	293	39	114	0.7	0.9	0.9	4	28.64612	0.139635	14.04841
Project 24	9	3	2.08	7	3.86	1.35	7	0.83	0.56	-0.23	0.86	1.21968	0.705103	2.330661
Project 25	11	61.2	23.5	108	65.1	26.1	82	0.67	0.76	0.83	3.9	20.28721	0.192239	17.20411
Project 26	5	7.56	1.75	21	9.06	2.29	21	0.739	0.72	0.57	1.5	1.543864	0.971588	11.87743
Project 27	10	68	11.7	20	89	8.68	20	0.785	0.145	0.156	21	7.265637	2.890318	8.811039
Project 28	6	233.81	26.52	135	245.7	25.942	146	0.901	0.94	0.94	11.89	11.68565	1.017487	92.046
Project 29	11	5.15	2.4	149	6.47	2.2	145	0.57	0.343	0.511	1.32	2.14028	0.616742	74.87788
Project 30	11	14.9	5.2	792	15.5	5.5	534	0.61	0.78	0.81	0.6	4.732653	0.126779	-3.68894

ProjectID	Grade Level Code	Pretest Mean	Pretest SD	Pretest N	Posttest Mean	Posttest SD	Posttest N	Pearson	Pretest Reliability	Posttest Reliability	Gain	Gain SD	d	d weight
Project 31	7	8.35	2.45	17	9.59	2.55	17	0.61	0.58	0.67	1.24	2.209762	0.561146	7.020054
Project 32	8	58	15.23	38	65	16.13	34	0.538	0.853	0.769	7	15.09304	0.46379	14.04894
Project 33	9	10.65	7.051	20	25.45	4.199	20	0.72	0.89	0.81	14.8	4.971308	2.977083	8.638778
Project 34	7	5.26	2.12	54	6.65	2.42	52	0.72	0.6	0.754	1.39	1.721344	0.807509	30.5923
Project 35	5	9.44	3.64	292	20	3.52	292	0.8	0.67	0.89	10.56	2.267051	4.658034	112.9765
Project 36	4	44	22.41	138	55	23.86	138	0.485	0.555	0.6	11	23.51268	0.467833	57.22321

Appendix H

Tests Used by Sites for Content Knowledge

Table 31. Assessments - Teacher

Project Name	Test Type	Teacher Test Name
Project 1	Validated	VNOS
Project 2	Validated	MOSART Earth Science
Project 3	Validated	Views of Scientific Inquiry (VOSI-S)
Project 4	Not Validated	Mathematics Diagnostic Testing Project Beginning Calculus Test
Project 5	Validated	LMT ratios and fractions
Project 6	Not Validated	ENS science content
Project 7	Validated	DTAMS Algebra
Project 8	Validated	VNOS-C
Project 9	Not Validated	Project Developed Chemistry Test
Project 10	Not Validated	Science
Project 11	Validated	MOSART Physics Test
Project 12	Not Validated	Probability and Statistics
Project 13	Not Validated	CHEM 497
Project 14	Validated	DTAMS Probability
Project 15	Not Validated	Biology Content
Project 16	Not Validated	Nanotechnology
Project 17	Not Validated	PFA
Project 18	Not Validated	Science
Project 19	Not Validated	Voepel Summer Test
Project 20	Validated	LMT Total
Project 21	Validated	DTAMS
Project 22	Validated	DTAMS
Project 23	Not Validated	Nanotechnolgy
Project 24	Not Validated	ISAT, Mathematics
Project 25	Not Validated	Earthscope
Project 26	Not Validated	Science
Project 27	Not Validated	Follow up April
Project 28	Not Validated	Science
Project 29	Validated	Praxis Math Content PROJECT MATH TEACHERS
Project 30	Validated	DTAMS
Project 31	Not Validated	Math
Project 32	Not Validated	Engaged STEM
Project 33	Validated	TSTE Teachers
Project 34	Not Validated	Science
Project 35	Validated	Intel Math mc1 project
Project 36	Not Validated	Emerging Technologies
Project 37	Not Validated	Monmouth Science
Project 38	Validated	DTAMS
Project 39	Not Validated	SS Science Workshop Su11

Table 32. Assessments - Student

Project ID	Grade	Test Type	Student Test Name
Project 1	10	Validated	VNOS-D+
Project 2	10	Not-Validated	PI-designed high school
Project 3	5	Validated	Illinois Student Achievement Test - Mathematics
Project 4	7	Validated	Mathematics Diagnostic Testing Project Algebra Readiness
Project 5	7	Validated	ISAT math
Project 6	6	Validated	SAT science
Project 7	4	Not-Validated	ISAT Science Sample Items
Project 8	11	Not-Validated	MS Chem
Project 9	5	Not-Validated	math
Project 10	8	Validated	ISAT
Project 11	5	Validated	ISAT
Project 12	0	Validated	MOSART
Project 13	8	Validated	ISAT
Project 14	9	Not-Validated	biology
Project 15	7	Not-Validated	inquiry process
Project 16	8	Validated	EMMA
Project 17	8	Not-Validated	Science Experimental 7-8 Test
Project 18	10	Validated	STUDENT ALGEBRA
Project 19	6	Validated	ISAT(Mathematics)
Project 20	8	Validated	Illinois Student Achievement Test - Mathematics
Project 21	8	Validated	Illinois Student Achievement Test - Mathematics
Project 22	6	Not Validated	Introduction to Nanotechnology
Project 23	8	Validated	ISAT, Mathematics
Project 24	9	Not Validated	Math
Project 25	11	Not Validated	IBIO
Project 26	5	Not Validated	Science
Project 27	10	Not Validated	Advanced Geometry Evaluation
Project 28	6	Validated	Illinois Student Achievement Test - Mathematics
Project 29	11	Validated	PSAE
Project 30	11	Validated	TSTE
Project 31	7	Not-Validated	Math ISAT Like
Project 32	8	Validated	Discovery Math Grade 8
Project 33	9	Not-Validated	Photo Design
Project 34	7	Validated	ISAT math
Project 35	5	Validated	Adapted TIMSS science test
Project 36	4	Not Validated	Revised SCIENCE NAEP EXAM