

Dickinson-Iron-Menominee Mathematics, Science, and Technology Center *2008-2009 Annual Report*

The Dickinson-Iron-Menominee Mathematics, Science, and Technology Center serves school districts in Dickinson, Iron, and Menominee Counties in the Upper Peninsula of Michigan. Located in Kingsford at the Dickinson-Iron Intermediate School District, the Center focuses on meeting the challenges of rural districts scattered over a wide geographic area.

Overview of the Year's Accomplishments

Student Services:

- Completion of a K-8th Summer Science Camp. This program impacted over 200 students. The Summer Science Camp is eight weeks in length with each week working with a different grade level and a different theme. Pre- and post-tests showed student improvement.
- Completion of the "Back on Track: Algebra for All" online learning program for struggling 8th grade students (Compass Learning after school) and summer (MVU Summer Math Camps). This program was 24 hours in length and impacted middle school students who were designated by their teachers as struggling in mathematics. Pre- and post-test results shows gains in mathematic learning.
- The Center also hosted a middle school Robotics Camp. Twenty-three students received instruction in design and program of robots.

Teacher Professional Development Services:

The Center coordinated professional development in mathematics, science and technology over the course of the school year. The Center supported teachers with: two lending resource rooms; an active website with online registration for professional development workshops and a quarterly, ten page newsletter distributed to over 800 K-12 teachers and administrators. The newsletter and website feature web resources, new programs, state and federal updates and professional development articles and opportunities. Using the electronic directory that the Center established, the information is forwarded to all science and math teachers across the service area.

Leverage of Grants:

The Center Director is the Project Director of a Federal 2008-2010 Title II Part B Mathematics and Science Partnership Grant. Through this grant, four Upper Peninsula Centers work collectively in the area of professional development in Science for 3rd -7th grade teachers. The Center Director secured funds from International Paper, Verso, and We Energies as well as several other small grants.

Organization of the Report

The Strategic Plan identifies six service areas: Leadership, Professional Development, Student Services, Curriculum Support, Community Involvement, and Resource Clearinghouse. This report will focus on Professional Development in the entire service area. In addition, there will be a narrative targeting work done with underachieving schools in the area.

REGION-WIDE PROFESSIONAL DEVELOPMENT

Goal: For educators who participate in Center Professional Development to reflect best instructional practices in their own settings.

Who participated?

Professional development opportunities were provided for classroom teachers, classroom support staff, administrators, parents/community members, and others involved in K-12 education. The chart and summary descriptions show who participated.

Table 1: Participants Receiving Professional Development

Participants			Reported Gender		Position					
			M	F	Admin	Math Tchr	Sci Tchr	Tech	Comb Subj	Other or Unknown*
Pre-School	1	12	0	1	0	0	0	0	0	1
Elementary	56	906	4	52	2	2	1	0	45	6
Middle/Jr. High	20	382	6	14	0	6	5	1	4	4
High School	35	599	25	10	3	13	10	0	3	6
K-12 Mixed Levels	18	370	9	9	2	2	3	0	5	6
Other*	23	385	6	17	1	1	0	0	0	21
Total	153	2654	50	103	8	24	19	1	57	44

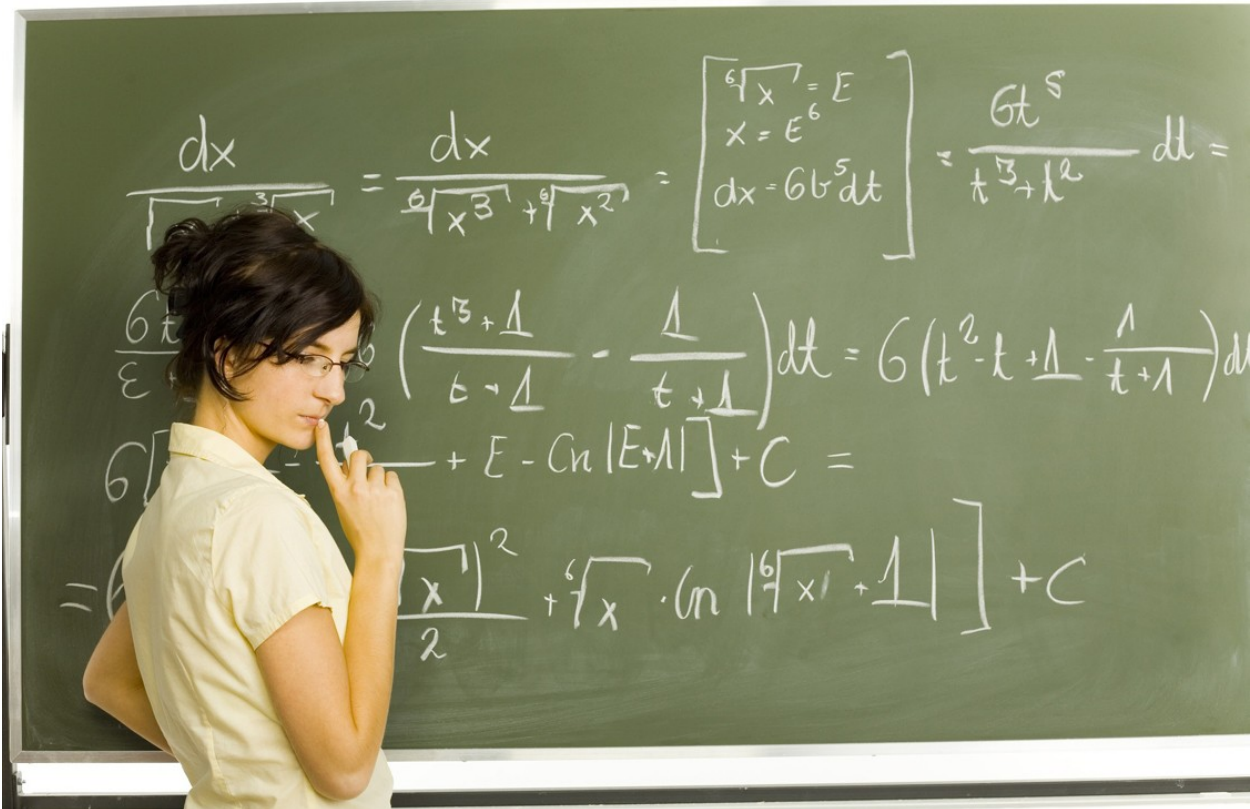
* Other includes persons who work across levels, are not teachers or administrators, or did not indicate position.

Professional development was delivered in many ways, depending upon the identified needs. Two primary formats included: (1) **Single events**, lasting for a portion of one day to several consecutive days, focused on a particular topic, skill, or issue; and (2) **Series**, which were a series of sessions (each building on the previous and conducted periodically over a several week/month period). The goal was to systematically strengthen teaching practices based on local needs and current research. Table 2 on the following page represents a picture of the number of sessions offered and the rate of attendance.

Teachers, on average, spent 17.3 hours on mathematics, science, or technology professional development.

Table 2: Professional Development Activities

		Math	Science	Technology	Other	Total
Elementary	Events	0	3	0	0	3
	Hours	0	18	0	0	18
	# Participants	0	45	0	0	45
Elementary and Middle School/Jr. High	Events	9	3	0	1	13
	Hours	54	15	0	8	77
	# Participants	106	42	0	8	156
Middle School/Jr. High	Events	1	1	0	0	2
	Hours	6	6	0	0	12
	# Participants	16	24	0	0	40
Middle School/Jr. High and High School	Events	1	2	1	0	4
	Hours	6	12	3	0	21
	# Participants	16	26	5	0	47
High School	Events	4	2	0	0	6
	Hours	28	12	0	0	40
	# Participants	32	23	0	0	55
K-12 Mixed Levels	Events	1	3	2	2	8
	Hours	4	18	9	9	40
	# Participants	4	54	40	25	123
Total	Events	16	14	3	3	36
	Hours	98	81	12	17	208
	# Participants	174	214	45	33	466



Spotlight on Professional Development

The Center continues to serve as the primary source for professional development in the areas of mathematics, science and technology in these three counties. There is no university in the service area.

The Center completed Year 1 of a U.S. Department of Education, Title II Math/Science Partnership grant, "Greater Proficiency in Science."

- Focus: 3rd through 7th grade science teachers.
- Partners: Lake Superior State University and Northern Michigan University, Northwoods Math/Science Center, Seaborg Math/Science Center, Eastern UP Math/Science Center.
- Four workshops were spread over the course of the year. Summer Institutes (4 days) were held at each of the Universities.
- Professional development time was also designated to curriculum alignment.

Center completed its second and final year in the Michigan Math and Science Teacher Leader Collaborative (MMSTLC) grant.

- Focus: High needs school district. Building science and math teacher leaders, improving content knowledge and teaching strategies.
- Worked with LSSU STEM faculty.
- Saw improvement in math (local assessments) and science MEAP scores.

Center selected as one of ten Centers for the Algebra for All statewide program. Over 70 teachers will be trained during the 2008-09 school year.

- Focus: Middle school/high school general and special education Algebra I teachers.

HS MASS-III (High School Math and Science Success)

- Focus on Inquiry in Instruction in both Math and Science.

Spotlight on Partnerships

Partnerships continue to be the "life line" of the Center. Area businesses continue to underwrite the cost of the Regional Science Fair, the Regional Invention Convention and the eight week Summer Science Camp. They also help sponsor our Robotics Team and middle school and high school Rockets for School Teams. We receive cash donations as well as in-kind contributions which makes our programs viable. We also continue to work with the three universities in the Upper Peninsula as well as the other Math/Science Centers around the state to offer educational opportunities for our teachers. The Center is also working with the STEM faculty from Northern Michigan University, Lake Superior State University and Michigan Technological University as well as Bay Community College.

Student Services

Student services are delivered based on identified needs to improve and enhance mathematics and science education. Students who participate in enrichment activities have the opportunity to explore new concepts, develop process skills, cooperate on group tasks, and discuss their findings. Student services include:

- ❖ school-day classroom programs provided by Center staff
- ❖ after-school and summer enrichment and support programs
- ❖ field trips to museums, natural areas, laboratories, and businesses to expose students to practical application of mathematics and science knowledge
- ❖ organization of science and mathematics fairs and academic competitions

Table 3: Student Services Activities Provided in 2008-2009

		Math	Science	Total
Elementary	Events	0	6	6
	Hours	0	30	30
	# Participants	0	209	209
Elementary & Middle School/Jr. High	Events	0	2	2
	Hours	0	9	9
	# Participants	0	238	238
Middle School/Jr. High	Events	4	2	6
	Hours	183	11	194
	# Participants	113	40	153
High School	Events	2	0	2
	Hours	195	0	195
	# Participants	32	0	32
Total	Events	6	10	16
	Hours	378	50	428
	# Participants	145	487	632

Spotlight on High Priority Schools

Blesh made AYP this year. Science scores were up significantly. Both the Science teacher and two Math teachers at Blesh participated in the MMSTLC grant for the past two years. Considerable amounts of PD were conducted at the school. In addition, teachers participated in all the MMSTLC leadership and content workshops. The Principal was also an active participant in the MMSTLC work. The Center Director also gave workshops in curriculum alignment, the science companion document with the GLCE, and balanced assessment.

West Iron again failed to make AYP. They have just enrolled teachers in the Algebra for All project and signed up teachers to participate in our new MSP expansion grant for Middle School and High School Earth/Environmental Science.

What was the impact of the Dickinson-Iron-Menominee Mathematics, Science and Technology Center?

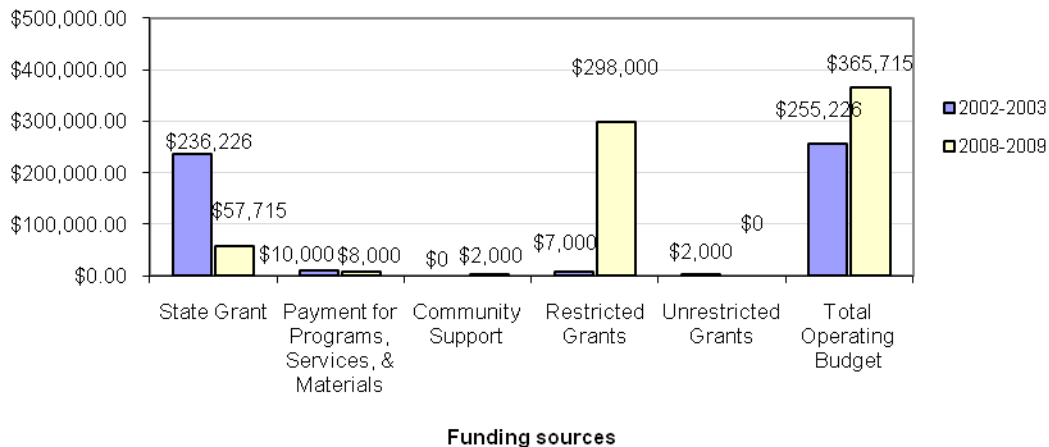
Impact on Students	Impact on Teachers
<p><u>Application of science knowledge</u></p> <ul style="list-style-type: none"> • 300 elementary/middle school students completed projects utilizing the Scientific Method for the Regional Science Fair. • 23 students completed the week long Robotics camp. <p><u>Enthusiasm for science programs</u></p> <ul style="list-style-type: none"> • 63 middle school students participated in the Rockets for Schools program. • 45 High School Students participated in the High School Rockets for Schools program. • 210 elementary and middle school students participated in a week long hands-on science camp. 	<p><u>Teachers received research-based best practice professional development</u></p> <ul style="list-style-type: none"> • Teachers, Principals and Administrators received training on Data for Student Success. • Teachers participated in MSP grants in Science (26) and Technology. • Teachers (35) participated in the HSMASS trainings in both math and science. • Local teachers (10) served as facilitators in the Back on Track Ready for Algebra program.
Impact on Schools	Impact on Communities
<p><u>All districts have curricula aligned with state standards</u></p> <ul style="list-style-type: none"> • All districts participated in curriculum mapping/pacing activities to better align their curriculums. • <i>Outcome:</i> MEAP science and math scores above the state average in all districts. <p><u>All districts are supporting the integration of technology into lessons</u></p> <ul style="list-style-type: none"> • All districts had teachers trained in the classroom assessment program using “clickers.” <p><u>Centers save school districts money by providing resources and services</u></p> <ul style="list-style-type: none"> • Teachers used materials from the Center’s Lending resource room to help supplement their supplies and equipment in teaching math and science. • Districts receive MEAP Data analysis from the Center (Dickinson & Iron). • Districts receive all professional development from the Center at no cost. • Districts’ Michigan Virtual High School (MVHS) efforts coordinated by the Center (Dickinson & Iron). 	<p><u>Community members, students, and teachers have real-world application of science opportunities</u></p> <ul style="list-style-type: none"> • Students and teachers had the opportunity to work with outside agencies such as the DNR and local industries. <p><u>Participation of parents and community members in mathematics and science programs</u></p> <ul style="list-style-type: none"> • 28 professionals (science or math) volunteered as judges for the Invention Convention and the Regional Science Fair.

Director's 2008-2009 Budget Discussion

The Dickinson-Iron-Menominee Center has reduced staff with currently a part time director, a less than 10% part time secretary and the ISD technology coordinator serving on a limited base. We have cut programs, eliminated some student activities such as Girls + Math + Science = Success, and reduced the amount of professional development offered to teachers. While we continue to operate the two lending resource rooms, few new supplies, kits, or equipment were purchased.

The Center is part of a two year MSP grant that is shared by three other Centers. Due to that funding and two other smaller grants, the Center was able to complete the work of the past year. This coming school year will be greatly limited in what we can afford to offer. The state foundation funding for the Center was \$57,000 for 2008 – 2009 year. Because of the totally unknown funding dilemma facing the Centers, there can be no projections concerning the work of the Math/Science Centers.

Changes in Dickinson-Iron-Menominee MST Center's Financial Support



In addition to the amounts shown above, In-Kind Support (facilities, technology, donated time and mileage) was valued at \$10,000.

Director's Summary

2008-2009 proved to be a year filled with budget issues, many challenges such as the alignment of Merit Curriculum, the Science Companion Documents which the Centers help rollout for the State of Michigan. With the continued reduction in funding from the State of Michigan, the staff reduction was severe and necessary. We have no full time staff, no consultants.

The Center continues to serve teachers, students and the community in the basic service areas due mainly to several smaller grants which the Center had received from various sources and community support.

Leadership: The Center Director continues to work with local companies, the Chamber of Commerce, state and local agencies, and school administrators to expand the role and importance of math and science education. The Director sits on the Upper Peninsula Center for Educational Development Board which meets monthly. The Directors of the Centers in the Upper Peninsula have also started to meet quarterly utilizing ITV to conduct meetings. We are trying to maximize resources and joint venture whenever possible. We continue to participate in state-wide projects such as MMLA, Building a Presence in Science, the Merit Curriculum and GLCE rollout as well as the High School Math and Science Success (HSMASS) projects.

Curriculum Support: The Center has maintained the Lending Resource Rooms at the Dickinson-Iron ISD and the Menominee ISD. Teachers have a listing of available materials and can physically come and check out the materials or e-mail a request and supplies are shipped out to them. No new items were added to the inventory due to current budget restraints. Support continues for curriculum alignment for the GLEC's and HS Merit Curriculum. The Center's web site with current web resources and the quarterly newsletter distributed information on free materials available, teacher grant opportunities, and professional development opportunities.

Student Services: The eight week Summer Science Camp completed its fifteenth year, hosting sessions for K through 8th grade, enrolling over 200 students and logging in 40 days of hands-on instruction. Each grade level is a week-long and a different theme looking at the world of science. Parents are asked to fill out an evaluation sheet at the end of the week. Ratings remain extremely high as to the child's motivation and excitement about "doing" science. The Regional Science Fair was held for fourth through eighth grade students with over 300 students exhibiting experiments. Completion of the "Back on Track : Ready for Algebra" online learning program for struggling 8th grade students (Compass Learning after school) and summer (MVU Summer Math Camps). This program was 24 hours in length and impacted middle school students who were designated by their teachers as struggling in mathematics. Pre- and post-test results show gains in mathematic learning. The Center also hosted a middle school Robotics camp. Twenty-three students received instruction in design and program of robots.