



Northwestern Local School District Adopts *HSTW* and *MMGW* and Increases Student Achievement

JULY 2010

A *HSTW* NE Ohio Region Case Study sponsored by *HSTW* Ohio Network

Northwestern Local School District, a rural school district of 1,468 students in West Salem, Ohio, adopted *High Schools That Work (HSTW)* in 2006 and *Making Middle Grades Work (MMGW)* in 2007. Since joining the *HSTW/MMGW* network, the school district and high school have earned an “Excellent” Ohio Report Card rating by increasing student achievement, the attendance and graduation rates. The middle school has earned an “Effective” rating. Superintendent Jeffrey Layton believes that the passion for student success is shared and supported by the school board, community and staff.

Student Achievement

- ✓ 2008-2009 “Excellent with Distinction” district rating
- ✓ 2006-2009 “Excellent” district rating and Met AYP
- ✓ 2006-2009 “Excellent” high school rating and Met AYP

Attendance

- ✓ 2006-2009 middle and high school exceeded 93 percent requirement for three years

Graduation Rate

- ✓ 2005-2009 increased graduation rate from 87.4 to 96.7 percent
- ✓ 70 percent of the 2010 graduating class will attend college

Organizational Changes, Systemic Leadership and Research-based PD

Superintendent Layton said, “With a history of being a good district, it was a challenge to become a great district. The perception that we were good enough was the greatest obstacle to making improvements. We also needed to create a balance between the quality and cost of public education.”

Working together the district reinvented the organizational culture and grew immensely by employing and developing new systemic leadership resulting in a team that works very well together. This team takes time to celebrate, collaborate and build support in the community.

Developing a system of annually reviewing the strategic plan, goals and student achievement has been the cornerstone of the district’s success. Through *HSTW/MMGW* the district and schools are now more aware and engaged in data analysis and the district leadership more closely monitors progress.

Through the utilization of research-based, meaningful and practical job-embedded PD, alignment of resources, involvement of stakeholders, adoption of the *HSTW/MMGW* framework and best practices, the district has improved student-centered educational opportunities for all students.



Roche Harmon, NMS Teacher, presents a best practice STEM lesson during the Ohio HSTW NE Region Re-Connect.

STEM: Regional and Business Partnerships

In 2007, the district was invited by the governor to participate in the Governor’s Task Force on Innovation and Creativity. This opportunity to network with state legislators and stakeholders validated the district’s plan to seek new ways to meet the educational needs of students. NLS searched for support to move in this new direction and became involved in STEM.

In 2008 and 2009, the district was awarded a state STEM grant. In addition, NLS received \$85,000 for a K-8 STEM Program of Excellence from the Ohio Board of Regents. The area businesses contributed another \$15,000. Business sponsors included Luk, USA and other area businesses.

The district is part of a regional STEM network that includes business, college and university (continued on page 4.)

WHAT CHANGES ARE MAKING A DIFFERENCE?

Northwestern Local School District (NLS)

- Organizational Changes, Systemic Leadership and Research-based Professional Development (PD)
- Science, Technology, Engineering, Mathematics (STEM): Regional and Business Partnerships
- Improved Technology for Teachers and Classrooms

Northwestern High School (NHS)

- Senior Seminar Capstone Project for Graduation
- STEM: Project Lead The Way (PLTW) – Biomedical and Pre- Engineering
- Advisor/Advisee: “Husky Huddle”

Northwestern Middle School (NMS)

- Extra Help, Power of I, and Response to Intervention (RtI)
- STEM: PLTW – Gateway to Technology
- Algebra I for High School Credit

HSTW Best Practices High Expectations for All

NHS provides rigor, relevancy and relationships

The mission of Northwestern Local Schools is "to prepare our students today for tomorrow's opportunities."

Northwestern High School (NHS) has embraced this mission statement and forged ahead using the best practices of the *HSTW* school improvement framework.

As a *HSTW* exploring site, NHS staff visited exemplar sites to seek strategies that best align with the school improvement plan. The school joined *HSTW* in 2006 and has active leadership and focus teams that meet monthly to plan, implement and examine data. NHS appointed a site coordinator and focus team chairs to govern the decision-making process.

Principal Mike Burkholder stated, "NHS took a good look at *HSTW* best practices to help coordinate and focus our efforts. The team chose Senior Seminar Capstone Project as one of our first initiatives."

Senior Seminar Capstone Project

During the first implementation year 2007-2008, NHS initiated senior project as an extension of the English 12 curriculum. During the second year, senior project was named Senior Seminar Capstone Project, removed from the English class and became a separate course.

During this same year, the Northwestern Local School Board adopted Senior Seminar Capstone Project as a requirement for graduation. During 2009-2010, NHS worked on further revisions to the program.

After presenting at numerous local, state and national conferences on evolution and implementation of this program, NHS found they were a leader in requiring all seniors to complete the Senior Capstone Project as a graduation requirement. Burkholder said, "Senior Seminar has definitely increased the rigor and relevancy of the senior year and has provided exceptional learning

opportunities and experiences for our seniors. Our students routinely reaffirm the values of this program as evidenced by surveys of our recent graduates."

STEM: PLTW - Biomedical /Pre-Engineering

To further efforts to address both rigor and relevancy, in 2009-2010 NHS offered four biomedical and pre-engineering courses, and added nine dual credit opportunities, previously zero, for all students through the STEM: Project Lead the Way (PLTW) initiative. Eleven dual credit courses are planned for 2011-2012 and 15 in 2012-2013.

The staff has overwhelmingly embraced these programs. Although it is additional work without compensation, the teachers instructing these courses see the value-added benefits for students and families.

As a result of the new STEM courses, NHS has seen a shift in the number of students who are pursuing further education in the engineering and biomedical fields. More than 70 percent of the 2010 graduating class will attend college with over 50 percent in the science, technology, engineering and medical fields. This is the first time a graduating class has exceeded one million dollars in grants and scholarships.

Advisor/Advisee: "Husky Huddle"

NHS staff wanted to strengthen its relationship with all students to increase the graduation rate, and improve student involvement and engagement in school. To ensure the success of this advisor/advisee program, NHS adopted *Husky Huddle*, using a *HSTW* best practice approach.

Husky Huddle has evolved over the past four years, but some aspects have remained constant. All students at NHS have an advisor and stay with the same advisor throughout high school. Advisory teams meet once a week for thirty minutes and focus on building relationships and monitoring students' educational progress.

In 2009-2010, NHS incorporated an additional weekly 30 minute extra help program. Burkholder stated, "We have been able to exceed the state graduation requirement for the past three years. It is our belief that our huddle program has helped to meet this goal."

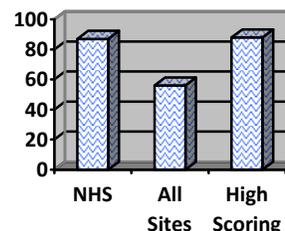


Mike Burkholder, Principal
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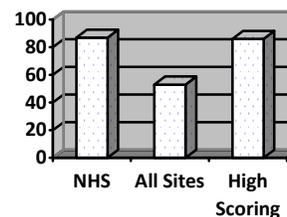
NHS took a good look at the *HSTW* best practices to help coordinate and focus our efforts. As a staff, we are committed to high expectations for ourselves and our students. Our success is due to the leadership of a teacher-led and data-driven culture that has allowed us to embrace new initiatives with minimum road blocks along the way.

Percentage of NHS Students Meeting 2008 HSTW Readiness Goals (HSTW Goal 85%)

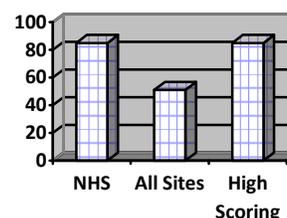
87% Reading – Exceeded HSTW Goal



87% Mathematics – Exceeded HSTW Goal



85% Science - Met HSTW Goal/High Scoring Sites



MMGW Best Practices Extra Help & Rigorous Courses

NMS prepares all students for rigorous high school courses

Northwestern Middle School (NMS) joined *MMGW* in 2007, a year after the high school adopted *HSTW*. Principal Scott Smith stated, "As the district was moving forward to adopt *HSTW* and STEM, we knew that the middle school had to come on board with rigorous courses and extra help to ensure the middle school students would be prepared for success in high school."

NMS has achieved an "Effective" state rating, but is continually challenged to meet AYP. As a *MMGW* exploring site, the NMS staff visited exemplar sites to seek best practices to meet AYP and *MMGW* strategies that aligned with the school improvement plan.

The middle school appointed a site coordinator and organized into focus teams to prepare for planning and implementing *MMGW*. Based upon the data, NMS developed a plan to implement extra help strategies including Power of I and Response to Intervention (RtI).

Extra Help, Power of I, and Response to Intervention (RtI)

NMS analyzed data from 2006-2009 and determined that failure rates were extremely high with over eight-hundred F's on grade cards. One of the main factors was that students were not completing assignments which resulted in zeroes in the grade book.

In 2007-2008, NMS developed RtI guidelines and decided to focus on oral reading fluency in year one of implementation.

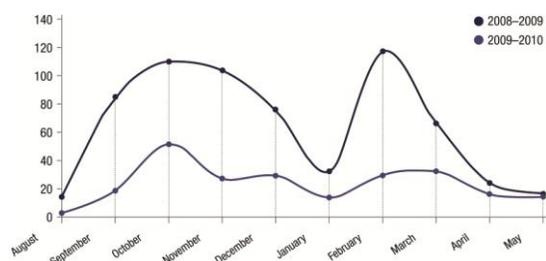
All students had their oral reading fluency tested three times throughout the year. Based on this data, students received reading interventions and were progress-monitored throughout the course of the year as determined by the established tiered RtI guidelines. During 2009-2010, NMS decided to collect benchmark data on reading comprehension and math computation with interventions specific to these areas to begin in the fall of 2010.

NMS needed to become more aggressive in reducing failures. In 2009-2010, NMS implemented a building-wide, daily, one-hour extra help period for all students. During the extra help period, students have the ability to seek help from any of their teachers and to redo assignments. Teachers have the opportunity to re-teach and provide interventions for students. Students and teachers now have the flexibility within the school day to work with each other.

During the Fall 2009, the staff at NMS attended professional development and immediately implemented a Power of I (I = Incomplete) policy. Students were expected to complete all assignments and received an "I" instead of a zero or F. Students received an incomplete for the assignment or for the grading period, depending on the circumstances of the missing assignments. Rewards and consequences were developed in each grade level to motivate students to complete all assignments.

Each grade-level teaching team embraced Extra Help, Power of I, and RtI differently. The data shows that the three initiatives have complimented each other to dramatically decrease the failure rates and discipline incidents, and increase student achievement in the classroom and on state-wide testing. In 2010, student performance on the Ohio Achievement Test (OAT) at all grade levels, and for all tested subjects, met or exceeded the state requirement of 75 percent, except for a 72 percent in seventh grade mathematics.

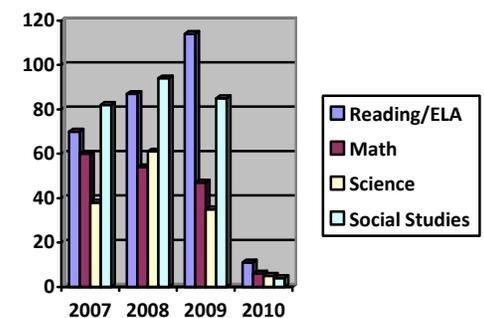
Discipline Incidents 2009-2010



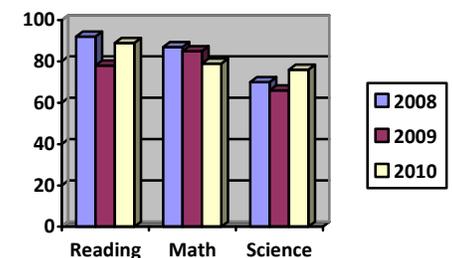
Scott Smith, Principal
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NMS joined *MMGW* to ensure the middle school students would be prepared for the rigorous courses in high school. Extra Help, Power of I, and RtI data show that the three initiatives have dramatically decreased the failure rates and discipline incidents, and increased student achievement in the classroom and on state-wide testing.

Failure Rates (Fs on grade cards) 2007-2010



Eighth Grade OAT 2008-2010 (75% state requirement)



Northwestern Middle School STEM: Project Lead the Way – Gateway to Technology

In 2008, NMS visited exemplar middle schools that were implementing Project Lead the Way – Gateway to Technology (PLT-GTT) and decided to incorporate the program into NMS's existing industrial technology course that same year. The offering included three nine week courses: Flight and Space, The Science of Technology, and Automation and Robotics; and one, two-semester course: Design and Modeling

Since 2008, the PLT-GTT course enrollment has steadily increased from 247 students in 2008 to 318 in 2010-11. As a result, more students are applying science, technology, engineering and mathematic principles in all classes.

NMS: Algebra I for High School Credit

In 2007-2008, NMS increased the number of students taking Algebra I for high school credit in the eighth grade to better prepare students for rigorous STEM and Calculus courses in high school.

The transition to increase the math rigor began with data analysis and the development of curriculum and assessment maps in grades six through eight. Staff attended professional development on developing formative and summative assessments to guide teacher instruction and student interventions.

Enrollment in Algebra I for high school credit increased from 14 percent in 2008 to 52 percent in 2010-2011. For 2011-2012, NMS projects 80 percent based on Pre-Algebra enrollment.

District STEM (continued from page 1)

partners, such as Northeast Ohio BioScience Consortium, BiOhio, hospitals, and Northeast Ohio University College of Medicine (NEOUCOM). These partnerships strengthen internship opportunities for seniors.

Layton said, "STEM/PLTW concept of application of learning has been institutionalized in all classes. Although science teachers are using more hands-on applications, student engagement has increased and now cuts across all subject areas"

District Provides Improved Technology

The district has made great strides in increasing technology. In 2010-2011, all teachers will be provided with a laptop less than a year old. Every classroom in the district has a projector, and all elementary classrooms have a Mimio. All teachers utilize Progress Book, an electronic grading software program with a parent/student communication feature.

NLS has also introduced and are expanding the access and availability of Quizdom student response systems, Mimios and document cameras in every building. Additional software and hardware have been purchased, such as Inspiration, Study Island and AimesWeb.

With the introduction of a fiber network, the district now provides the best information network and the highest quality video streamlining access through Info Ohio and Discovery Learning. Layton said, "We are providing the best tools for teachers and students to reach their highest potential."



HSTW Ohio Network, a nonprofit organization that supports HSTW and MMGW school improvement initiatives in Ohio, sponsored this publication.

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Northwestern Local Schools (NLS) is a rural school district in an economically depressed area of northeast Ohio. The district schools include an elementary, middle and high school. In 2009, the district received a state rating of "Excellent with Distinction".

Current enrollment at NLS is approximately 1,468 students in grades K-12. The student population is 97 percent White, two percent Black and one percent Other. Approximately 49 percent of students are on free or reduced lunches, 14 percent are students with disabilities and six percent are gifted.

Since 2006, the NLS has received annual grants from the Ohio Department of Education to support the implementation of HSTW and MMGW. In 2008, NHS administered the HSTW Assessment, and in 2010 NMS administered the Middle Grades Assessment. NHS is among the highest performing schools in the national HSTW network. The high school met or exceeded the HSTW 85 percent goal of in the percentage of NHS students meeting the readiness goals in reading, mathematics and science on the 2008 HSTW Assessment.



Jeffrey Layton, Superintendent
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