District: Quaboag School District  
Name: West Brookfield Elementary Innovation School  
Grades Served: PK–6  
Enrollment: 310

INNOVATION SCHOOLS CASE STUDY: High District Support/High Level of Implementation

Overview

The West Brookfield Elementary Innovation School

Upon entering the West Brookfield Elementary Innovation School (WBEIS), one is struck by the friendliness of the staff and the smiling faces on children and parents. Corridors are freshly painted with silhouettes of children engaged in various activities, and student work is prominently displayed. Each morning the entire student body views a live podcast delivered from the computer lab to learn about the day’s weather forecast and celebrate students’ birthdays. The weather forecast connects directly to the STEM theme that permeates the curriculum. The technology director guides two students through a live broadcast of the weather around the country. The school principal then appears with the birthday celebrants and presents each with a book and a hug. She explained starting the day this way not only links the STEM focus through the topic of weather, but also builds community and grounds the children in doing the same activity. They start the day off with something to celebrate, and together they recite the Pledge of Allegiance.

The WBEIS is led by a strong principal with high ideals and expectations who believes leadership means empowering teachers to come up with their own ideas and to challenge the status quo. Principal Colleen Mucha and her staff realized the need to prepare young students to be successful with the STEM focus at the middle/high school and to be ready for a college or career pathway. Thus began the Innovation Leadership Team consisting of the principal and seven teachers/staff members who met frequently during the first and second years for creating and revising the Innovation Plan. The principal noted now that the school is “really living it” they meet three or four times a year. She added there was some resistance at the start from those who worried that MCAS results might slide as new strategies were implemented, but ultimately open communication and transparency led to strong teacher and community buy-in.

“In addition to linking the STEM focus through the topic of weather, the purpose here is to help create community. Everyone is doing the same thing together each morning and that grounds them as a community.”

— WBEIS Principal

District Vision/Motivation for Innovation Schools

The Quaboag Regional School District has the distinction of being the first pre-Kindergarten through 12th grade Innovation School District in the Commonwealth of Massachusetts. In 2011, a newly-formed administrative team decided the challenges faced by the district’s small middle/high school (MS/HS) required a complex change initiative. Located in a low-industry, low economic rural area, with no technology or vocational courses, enrollment was decreasing due to inter-district school choice; and college hopefuls lacked financial support or assistance at home to navigate the college application process. The District’s desire to address these needs and determination to increase cross-curriculum units served as impetus for applying for an Innovation Schools Grant and choosing a district-wide STEM focus. In 2012, after a year of implementation and promising results at the MS/HS, the two elementary schools were integrated into the Innovation Plan.
“One of the most important things to me is the training for teachers, because they become the experts. We can use our own staff, and that wasn’t happening five years ago. Teacher confidence is through the roof ... and the conversations they have with the kids are awesome.”
— WBEIS Principal

Autonomies

The three autonomies granted the West Brookfield Elementary Innovation School were:

- Curriculum, Instruction, and Assessment
- Professional Development
- District Policies

Following are detailed descriptions of the components of these three autonomies:

Curriculum, Instruction and Assessment

The engineering design process permeates the school curriculum and facilitates cross-curriculum goals. WBEIS uses model curriculum units developed by the Massachusetts Department of Elementary and Secondary Education, as well as Lesson Protocol Forms that include a daily warm up, launch, hands on activity, wrap up and share out by students. Teachers are trained in Engineering is Elementary®, a curriculum developed by the Museum of Science that encompasses robotics, aeronautics, and forensics. Teachers are always evaluating what they're doing through constant communication and transparency. They regularly assess student progress and collect evidence to show success. They use a student feedback survey that readily informs what is working well and what needs adjusting.

Professional Development

High quality professional development for staff is a top priority of the WBEIS school principal. She emphasized the need to prioritize to make sure teachers don’t get overwhelmed, and to supply the professional development all year long so that teacher confidence continuously improves. Learning Rounds is a professional development strategy wherein teachers observe each other using the rubric Characteristics of Standards-Based Teaching and Learning: Continuum of Practice. Staff select a focus for the year, such as differentiated instruction, observe each other’s lessons and collect evidence through this lens. Then they discuss findings, share ideas for improvement and celebrate successes. The entire staff learns about these results at faculty meetings.

The WBEIS principal shared other goals of professional development, such as helping teachers speak up and be heard, get more comfortable teaching math, and feel safe and free to try new things. One teacher noted that the professional development has become more structured and purposeful since the innovation plan was implemented, and the principal shared that the extent to which teachers engage in Professional Development for the benefit of students is extraordinary. Teachers feel free to try new things and make mistakes, because the level of support is so high.

Partnerships

Partnerships facilitated by the district are integral to the success of their innovation model, especially in light of the STEM focus. The Boston Museum of Science (MoS) provides teachers professional development and follow-up support in implementing the Engineering is Elementary® (EIE) curriculum as well as support in out-of-school time activities. Worcester Polytechnic Institute provides a year-long professional development program for administrators in implementing STEM district-wide, while teachers receive professional development on the “Engineering Lens”, learning methods to integrate the engineering design processes across curriculum with children’s literature as a vehicle. Teachers learned problem solving and discovery/creation strategies from Worcester Ecotarium Museum staff while engaging in a “Maker’s-Faire”, an example of project-based learning and the engineering design process.

“Every summer we sit down as an administrative team and map out our goals and plans for the future. This initiative caused us to look more closely at our goals and priorities. But we were ripe for change; we had the appetite for it. Once we started to experience success, well, success breeds success.”
— Superintendent

Other partnerships, both new and ongoing, continue to support the Innovation School model, and include Looney Consulting which provides training for teachers in Exploratory Math. This training has transformed math/science teaching and the level of teacher confidence, according to West Brookfield’s principal. Most recently, the District explored the Cambridge Innovation Center to network with young entrepreneurs, build contacts for resources and programs, and to learn what skills organizations are looking for in high school graduates to be successful in today’s work force. Quinsigamond Community College is also an important partner, and initially the district was involved with
the Math/Science Initiative which provided early professional development early on in these efforts.

District Support for Innovation Schools

Leadership and Empowerment

Guided by a superintendent who champions integration of the arts with the STEM focus, and who was instrumental in convincing the community to fund the 21st century technology upgrade, school staff have time to pilot new strategies and to review and revise as necessary. The district provides substitutes when teachers need time to look at and work with data or attend trainings. The superintendent publicly voices to parents and the community why these changes are taking place and why teachers are out of the classroom for training or meetings.

“[The grant writer] works with the all schools and is always connecting the pieces. She looks at what we are all doing holistically ... and helps us brainstorm how to work together.”

— Teacher

The superintendent joins the principal at WBEIS for classroom walk-throughs every Wednesday to observe what is happening in the classroom. Teachers see this as evidence of support. Along with facilitating the important partnerships that provide professional development for teachers and innovative opportunities for students, the district also employs a grant writer who was described by principals and teachers as critical to their success.

“[The district administration] keeps it at the forefront of everything — school committee meetings, math talks with the school committee on TV, parent academies, math nights teaching families the language of the new math, K–12 vertical teaming. They are constantly in communication about what each [school] is doing.”

— WBEIS Principal

Benefits, Challenges, and Lessons Learned

Benefits for Students

Students are very comfortable here with staff going in and out of classrooms as they conduct continuous assessment. Students like and respect their teachers and appreciate their flexibility. Students proudly reported increases in MCAS scores in mathematics, and improved computer skills as a result of more accessible technology. They enjoy challenging hands-on math activities; classes that are combined such as art and geometry; the focus on science and engineering; and stimulating group work which is evident everywhere as one tours classrooms. Fifth and sixth graders feel good about mentoring younger students.

Sixth grade students participated in WPI’s engineering workshop and NASA Robotics week. The “Improving Science and Math Achievement through Hands-on Engineering and Design for Elementary School Students’ Mini-Maker’s Faire” is a collaborative project between the Worcester Ecotarium Museum and the Quaboag District’s WBEIS and the Warren Community Elementary Innovation School. College students from the Massachusetts Academy of Sciences tutor sixth graders in science one day a week. Through this partnership, students gain support for entering independent science and technology research experiences such as the Massachusetts State Science and Engineering Fair. Students also develop 21st century workforce skills including critical thinking, problem solving, the ability to work in teams, and effective written and oral communication skills. Kids Consortium is a STEM service learning partner focused on at-risk kids and provided by the Massachusetts Department of Elementary and Secondary Education. Students mentioned very few challenges of the innovation school initiative.

“The principal has made this place acceptable, comfortable. She always makes time, she’s very visible, always in classrooms ... and that puts teachers and students at ease. She sits down with [students], helps out. And you can see the response from the kids as they embrace her.”

— Teacher

Benefits for Teachers

Teachers appreciate a much more rigorous mathematics curriculum, and hands-on group work that challenges students. They also believe more collaboration in problem solving and more group and partner work has helped students get better at working together. Teachers view the new instructional strategies as beneficial for themselves as well, as one explained there is less chance of instruction becoming stale or routine. Teachers happily report that creativity is flourishing and greater student independence is noticeable. They have found that curriculum and instructional strategies, such as hands-on activities, often minimize discipline incidents and give less successful students a sense of pride and accomplishment. Students are more engaged in the discussions generated by hands-on lessons and greater use of technology as well.
Teachers on the WBEIS Innovation Leadership Team noted the positive culture/environment at WBIES wasn’t always this way. They credit the Principal, Colleen Mucha, with being highly accessible to both teachers and students, a constant visitor in the classrooms, helpful to students wherever needed, welcoming to parents, and a strong champion of teachers’ knowledge and expertise.

Challenges

It is not surprising that teachers stated finding time to meet with each other to create cross-curriculum lessons is challenging. Time or the lack of it is always a challenge in schools. What is surprising is that lack of time was just about the only challenge mentioned. District administration strongly believes in piloting new strategies which resolves to some degree the lack of time dilemma. Following a pilot, results are assessed, and the new strategy is adjusted or eliminated ... things that don’t work are not continued. Another solution for lack of time (and resources) is dealt with through creative staffing strategies. For example, the WBEIS principal will tap the technology director to run the robotics lab when it opens; and the math coach — in addition to coaching — became a part-time math teacher to fill a staffing void.

Lessons Learned

If one were to ask the WBEIS principal and the Quaboag Administration Team what advice they might give another district desiring to become a successful innovation school, they would readily emphasize consistency and hard work towards a common purpose and vision. Further advice might include gaining teacher buy-in and allowing forward movement to be driven by staff. WBEIS surveyed teachers and used data to show why change was needed. Then they promised and delivered support through training and coaching in math, reading, robotics, science and engineering to get teachers to a level of comfort to teach these content areas. The District showed its commitment by providing funds for teacher professional development and substitutes. *Having the right staff in place and the freedom to assign different roles also enhanced this district’s success.*

“The district and schools need a common purpose and vision; ours was the focus on STEM and the engineering theme across the curriculum. One of our goals at WBEIS is to give students the best possible preparation to follow that pathway to be successful at middle/high school ... to be better prepared and leave with a set of skills they never left with before.”

— WBEIS Principal

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* It was noted that the District allocated an additional $5,000 in 2012–2013 to support professional development for teachers.