Case Study: Greater New Bedford Voc-Tech shifts funds to train teachers on formative assessments and measures the impact

MASSACHUSETTS DEPARTMENT OF ELEMENTARY AND SECONDARY EDUCATION

Executive Summary

- Greater New Bedford Regional Vocational-Technical High School (GNBVT) wanted to improve teacher practice to support student growth in ELA and math as part of a commitment to strengthening academic offerings alongside their vocational programs.
- Leadership invested in training on the use of formative assessment data for academic teachers and added an ELA teacher for 9th and 10th grade to keep class sizes down.
- The team measured changes in teacher practice and student growth. After a year of training, the percent of teachers rated proficient on use of data went from 38% to 46%, and SGP results on MCAS improved for both ELA (2.0 points) and math (3.2 points).

FAST FACTS

Greater New Bedford Voc-Tech

SY 2016-17

Schools **1**

Teachers **194**

Students **2,154**

Econ. Disadv. **36.9%**

District Leadership

James O'Brien, Superintendent
Michael Watson, Academic Principal
Robert Watt, CVTE Principal
Helder Angelo, Dir. of Curriculum, Instruction, Assessment, and Accountability
Allen Duarte, Grant Writer

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Resource Reallocation to District Priorities Grant Program

A competitive two-year program supporting school districts to make substantial changes in resource allocation and direct more resources toward evidence-based improvement strategies. This grant program also encourages districts to use the new suite of Resource Allocation and District Action Reports (RADAR) tools to analyze how they use resources.

RADAR

Overview of Grant

This case study is one of nine in a series showcasing the work of recipients of a 2017 DESE two-year grant for reallocating resources to align with district priorities. The case study explains how the participants used state data tools such as RADAR and DART to identify an area of need, determined an evidence-based investment, shifted resources in their existing budget to make the investment, and then evaluated the cost and impact of the investment.

Planning: Greater New Bedford Voc-Tech works to improve teacher use of data and student academic performance

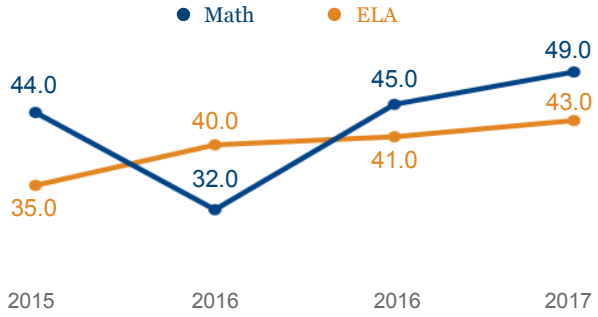
At the start of 2016-17, leaders at Greater New Bedford Vocactional-Technical (GNBVT) High School reviewed their students' performance on MCAS relative to students at other vocational high schools. While the number of students proficient or above on MCAS was in line with peers, GNBVT students had lower growth scores (SGP). Leadership reviewed formative and summative data to identify reasons for the low growth and worked to establish a long-term strategic improvement plan rooted in SMART goals. They deployed a number of changes in their school environment to work towards the improvement plan. This began with an overhaul of the school's master schedule to build in literacy, math concepts, and strategies classes for all students in grades 9 and 10 to develop skills in ELA, math, and science. Leaders worked to build in time for teacher collaboration through professional learning communities (PLCs) and thoughtfully scheduled students based on performance and needs. To promote more rigorous instruction, they provided more targeted professional development and encouraged the use of technology within the classroom. Finally, members of the leadership team, including the principal, refocused time and energy towards classroom instruction, conducting more observations and providing coaching and feedback to teachers.

To make further investments in strengthening academics, the GNBVT leadership applied for and won the Resource Reallocation to District Priorities grant.

The team used grant funds to invest in PD focused on the use of data to inform instruction, engaging Dr. Nancy Love at Research for Better Teaching. She helped establish High Impact Teacher Teams (HITTs), who implement a four phase process to drive instruction and improve student learning. These four phases are: establish success criteria, infuse formative assessments, analyze the data, and take action through reteaching and reengaging.

***Exhibit 1* | GNBVT Assessment Scores**

Student growth (SGP) over time

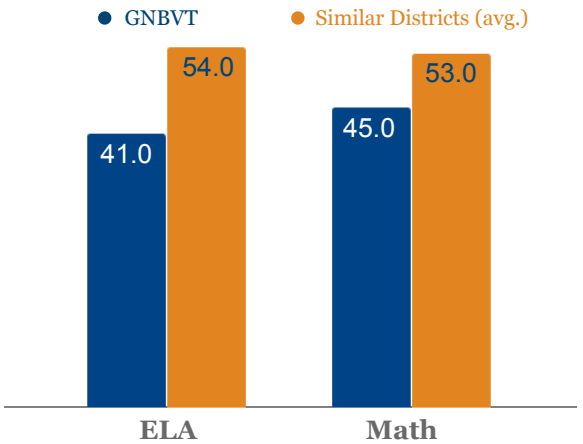


In the summer and fall of 2018, Dr. Love trained 40 staff members from all academic departments during three full-day professional development sessions. The 40 staff members then trained their professional learning communities (PLCs) in six PLC sessions during the fall through a "train-the-trainer" model. Additionally, Dr. Love conducted three onsite visits from December to March to observe PLC meetings and classrooms and provide hands-on coaching to staff.

The leadership team also sought to reduce ELA class sizes given the lower ELA student growth. In reviewing research on class size, the team cited a Massachusetts brief which states: "While all students can benefit from smaller classes, there is evidence that students of color and low income students particularly benefit from well-designed class size reductions." Approximately 40% of GNBVT's students come from low income families. The team determined that reallocating resources to hire an additional ELA teacher for grades and 10 stu-

***Exhibit 2* | RADAR Analysis – SGP**

ELA and math SGP (2016-17)



dents would reduce class sizes from 22 to 18 and could help improve student growth.

Measuring: GNBVT assessed the impact on staff and student outcomes

The GNBVT team worked with DMGroup and DESE to define success measures for their investments, thinking through the desired outcomes and specific metrics. The team developed the following definitions of success:

- Teachers will apply the knowledge and skills obtained from the Data and Formative Assessment Workshops as measured by a 20% increase in the number of teachers rated "providing" and/or "sustaining" on the GNBVT learning walk protocol formative assessment indicator from 2017-18 to 2018-19.
- Teachers will apply the knowledge and skills obtained from the Data and Formative Assessment Workshops to improve student performance as demonstrated through a student growth percentile at or above 50 on ELA & Math MCAS.
- Reduced class sizes in grades 9 and 10 ELA will improve student performance as demonstrated through a student growth percentile at or above 50 on ELA MCAS.

The funds from the DESE grant were used to support the initial implementation of the scope for this project. GNBVT wanted to ensure that the work would be financially sustainable. While grant funds were critical in paying for the initial PD, leaders deliberately used PLCs and the train-the-trainer model to embed the knowledge throughout the staff, so they would not be reliant on an outside trainer in future years. Grant funds also paid a portion of the initial salary of the grade 9-10 ELA teacher hired to reduce class sizes. The district had identified a vocational/technical vacancy at the end of 2017-18 that would not be filled freeing up the funds to cover the full teacher salary in subsequent years.

After the formative assessment training, the district conducted learning walks to determine how teachers were applying the skills they learned in their training. The GNBVT team focused on Indicator 2 related to use of data to inform instruction. District leaders conducted 64 learning walks in 2017-18 as a baseline and then 90 learning walks in 2018-19 after the professional development.

Key Terms for Measuring Success

Learning Walk Protocol

Adapted from DESE's Learning Walkthrough Implementation Guide, Indicator 2: Use of Data to Inform Instruction. *Providing* indicates a teacher has established routines, systems, and the use of assessment data to monitor what each student knows/is able to do. *Sustaining* signifies that students also take part in monitoring their own progress through formative assessments.

Student Growth Percentiles (SGP)

A measure of student progress developed by DESE, SGP compares changes in a student's MCAS scores to changes in MCAS scores of their "academic peers" (students with similar scores in prior years). SGP aims to illustrate district or school impact on a student's academic achievement.

GNBVT also collected and analyzed MCAS student growth percentiles broken down by content area (Math and ELA) over multiple years, before and after the formative assessment training and addition of the ELA teacher.

Using a process from DMGroup, the district leaders calculated the fully loaded costs of their investments. This included not only direct costs, such as trainer fees and the salary of the additional ELA teacher, but also indirect costs like administrator time supporting the training and time staff spent interviewing ELA teacher candidates.

After collecting all costs associated, GNBVT deter-

***Exhibit 3* | Fully Loaded Per Pupil Cost: Formative Assessments**

Personnel Costs	
Category	**Amount**
Staff Time	$194,000
Administrator Time	$1,000
Non-Personnel Costs	
Category	**Amount**
Consultants and Fees	$17,700
Materials	$4,000
Cost Per Student	
Students Impacted	**Amount**
2,139	$100

mined that the total cost of their formative assessment investment was approximately $216,700. All 2,139 students at the school were impacted by the training, equating to an estimated per-pupil cost of about $100. Additionally, all 9th and 10th graders were impacted by the additional ELA teacher (1,120 students) equating to an estimated per-pupil cost of this investment of $62. Of the total $286,000, $236,000 involved repurposed GNBVT time and expenditures; DESE grant funds covered the remainder.

Exhibit 4 | Fully Loaded Per Pupil Cost | Additional ELA Teacher

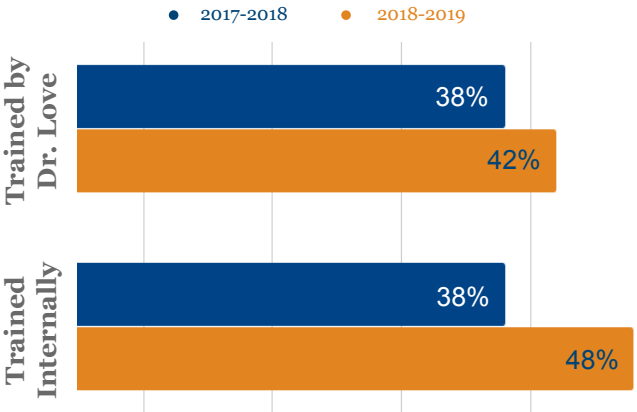
Personnel Costs	
Category	**Amount**
Staff Time	$68,400
Administrator Time	$800
Non-Personnel Costs	
Category	**Amount**
Consultants and Fees	$250
Cost Per Student	
Students Impacted	**Amount**
1,120	$62

Evaluating: GNBVT reviewed the results of their investments for staff and students

Learning walks protocols: During 2018-19, GNBVT saw an overall eight percentage point increase from 2017-18 in the number of teachers "providing" or "sustaining" on Indicator 2 (use of data to inform instruction). The team disaggregated data based on the form of training received by teachers: either trained by Dr. Love or trained by a teacher trainer. District leaders were pleased to see that teachers trainer internally also showed improvements.

Exhibit 5 | Learning Walks

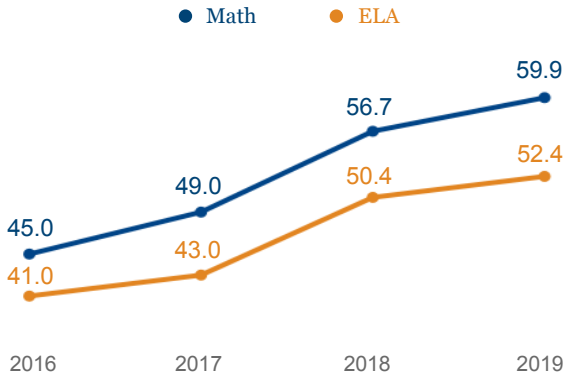
Percent change (from 2017-18 to 2018-19)



MCAS: GNBVT reviewed MCAS scores in ELA and math to see the impact on student performance of the formative assessment training and the addition of an ELA teacher. In ELA in 2018-19, the school-wide student growth percentile (SGP) was 52.4, a two point increase from the 2017-18 SGP of 50.4. In math, the schoolwide SGP was 59.9, a 3.2 point increase from the 2017-18 SGP of 56.7. In ELA, where smaller class sizes were targeted for higher-needs students, SGPs increased for DESE-designated high-needs and economically disadvantaged subgroups. Students in both subjects met their definitions of success.

Exhibit 6 | MCAS Scores: Changes in SGP

ELA and math SGP



Looking ahead: The GNBVT team continues to improve practice in 2019-20

From 2016-17 to 2018-19, the GNBVT team saw momentum building among the staff to improve student growth and performance. With all of the large-scale changes, including the schedule overhaul, professional development, and administrator supports that took place across these years, leaders cannot attribute their success to any single initiative but rather to the comprehensive and cohesive focus on improving student growth and supporting staff. Looking to 2019-20, the team continues to maintain and sustain their focus on instruction and student performance without implementing any new major initiatives. One administrator summarized the district's focus by repeating their motto for the year: "Stay the course, keep running."