More Efficient High Schools in Maine:
Emerging Student-Centered Learning Communities

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Acknowledgements

The Nellie Mae Education Foundation is the largest charitable organization in New England that focuses exclusively on education. The Foundation supports the promotion and integration of student-centered approaches to learning at the middle and high school levels across New England. To elevate student-centered approaches, the Foundation utilizes a three-part strategy that focuses on: developing and enhancing models of practice; reshaping education policies; and increasing public understanding and demand for high quality educational experiences. The Foundation's initiative areas are: District Level Systems Change; State Level Systems Change; Research and Development; and Public Understanding. Since 1998, the Foundation has distributed over $123 million in grants. For more information, visit www.nmefoundation.org.

Executive Summary

American K-12 public education all across the nation is at a difficult and critical crossroads. We are at a time when keen global competition underscores the need for exceptional performance in our primary and secondary schools. Yet, state and federal governments face unprecedented budget deficits and limited resources for the foreseeable future.

Additionally, our schools are being called upon to do an even better job of preparing students for the 21st century. There is growing evidence that success in the 21st Century requires more than what has traditionally been the content of schooling. It requires more and different types of knowledge, skills, and learning.

To help students acquire this knowledge base and skills, many educators and leaders are calling for transformative changes in our schools and changes in how we help students learn. This transformative change is called by many names: performance-based learning, standards-based learning, and student-centered learning. The Nellie Mae Education Foundation (NMEF) describes this transformation to more student-centered learning as the need for:

> *...growing a greater variety of higher quality educational opportunities that enable all learners—especially and essentially underserved learners—to obtain the skills, knowledge and supports necessary to become civically engaged, economically self-sufficient lifelong learners.* (2011)

Can our schools be transformed to meet these challenges? More importantly, can they be high performing, efficient, **and** student-centered at the same time? To explore these questions, the Center for Education Policy, Applied Research, and Evaluation at the University of Southern Maine conducted a study in 2010-2011 of a sample of Maine high schools. Funded in part by the Nellie Mae Education Foundation, the study examined the degree to which these More Efficient high schools were also student-centered.

More Efficient schools were defined as schools that exhibited higher student academic performance *and* a higher return on spending, as well as achieving both of these standards regardless of the economic and social conditions found in the local community. We consider these schools More Efficient because they are helping all students achieve more, and they are using their resources wisely to accomplish this goal.

Seven of Maine's high schools were selected for concentrated study. Five of these schools were selected because they were designated as "More Efficient," and two schools were classified as "Typical Schools." Typical Schools were schools with mixed student performance results in their profiles.

The initial analysis of the case study evidence confirmed many findings reported in other national and international studies of higher performing schools: More Efficient high schools were more consistent in their high expectations and high standards for all members of the school

community and implemented more rigorous curricula with engaging instruction. In addition, More Efficient high schools had good leadership, supportive school cultures, and many of the other characteristics found in our literature review.

A deeper analysis of the evidence also revealed that in the More Efficient high schools these features came together to form a distinctive culture: a culture that is more than the sum of the individual parts and consists of features that cut across and encompassed the categories of characteristics found in earlier studies. What we found to be unique among the More Efficient high schools was *a singular, sustained focus that places students and their intellectual development at the center of all work.*

Three Key Features of the Pervasive Culture within More Efficient Schools

More Efficient Schools are student-focused learning communities in which there is systemic evidence of:

A) Intellectual Work:
   i. **Students engage in intellectual work that involves academic knowledge and skills as well as social and behavioral learning.**
   ii. **Adults engage in intellectual work to create instructional practices, curricula, professional learning programs, and leadership roles that improve student performance and are informed by assessment and experience.**

B) Equity:
   i. **Teachers and leaders believe they have a moral obligation to focus on the intellectual development of students as a means towards a better world.**

   ii. **High standards and high expectations are held for <u>all</u> members of the school community.**

C) Efficient Use of Resources:

   i. **Human and financial resources are used efficiently to maximize learning opportunities for students and staff.**

The five More Efficient high schools also exhibited many aspects of the 2010 Nellie Mae Education Foundation (NMEF) key characteristics of student-centered schools. As may be seen in the chart below, we found many connections between the NMEF principles and the distinguishing characteristics of the More Efficient high schools we studied.

Nellie Mae Education Foundation: Student-Centered Principles	More Efficient Schools: Student-Centered Characteristics
Equal Access – Systems provide all students equal access to necessary 21st century skills.	Equity – High standards and high expectations for all students and adults in the school community.
College & Career Readiness – Systems provide access to skills & knowledge needed for college and career readiness.	Multiple Pathways – Strong vocational, academic and Advanced Placement course options.
Research – Systems align with current research on learning process and motivation.	Professional Learning – Significant professional development surrounding instruction and data analysis.
Mastery – Systems focus on mastery of skills and knowledge.	Intellectual Work – Students and adults engage consistently in elements of intellectual work: understand, transform and share.
Positive Culture – Systems build students' identities through positive culture, strong relationships and high expectations.	Moral Obligation – Educators and leaders demonstrate the moral obligation to learners' intellectual (academic & behavioral) development.
Community – Systems include school community and community at large in students' educational journey.	Collaboration – Schools effectively coordinate communication and collaboration between school-families and school-community.

It is clear that the More Efficient high schools we studied are having considerable success in helping students master core academic subject knowledge and helping students to develop intellectually: to be able to understand, transform, and share their learning. All students have access to a variety of learning opportunities, and a wide variety of learning experiences were available to students throughout the school day, including remediation and enrichment. There is ample evidence of high expectations and high standards and the use of multiple assessments in assessing progress in learning. In addition, teachers and leaders are actively engaged in creating a school culture that helps students acquire more and more responsibility for their own learning. They strive to provide all

students equal access to learning, create multiple opportunities for acquiring knowledge and skills, and provide a culture supportive of all learners and their intellectual development. Thus, based on the body of evidence that was collected and analyzed for this study, we concluded that these five high schools are good examples of what can be called *emerging student-centered schools.*

Why do we only call these high schools "emerging" student-centered schools? Because, while there is ample evidence that the schools exhibit the 2010 NMEF key characteristics of student-centered schools, they fall short of exhibiting two key attributes of these types of schools: maximum flexibility in the use of time and learning opportunities and progression based on mastery of knowledge and skills. True, the focus is on learning, students have wider ranges of learning experiences than in the past, and many of these experiences are more "authentic." Some students had opportunities for more field-based activities, peer learning and internships. As well, student progress in these high schools is more often judged in terms of competencies and standards than in other high schools.

But learning in these high schools is also most often confined to the traditional school day and year, and progress is still very much governed by traditional course structures and grade-level configurations. Standards are used very often to guide curriculum, instruction, and to measure student progress, but only within existing grade level structures and courses. Students are still advancing through the grades at the same pace as students in other schools and consequently are advancing grade to grade with varying levels of proficiency. Learning, in large measure, still takes place within the confines of the school walls, on traditional pacing patterns, and by school-based educators and professionals. Thus, becoming more student-centered will require additional reforms. Becoming more student-centered will also require structural and institutional changes.

The More Efficient schools we studied are staffed by teachers, leaders, and others who fundamentally believe they have a moral obligation to help all children develop intellectually and be prepared for the 21st Century. Becoming more transformative and student-centered would seem to be a natural next step in the evolution of these schools, but as Robert Halpern correctly states, fundamental shifts in learning environments are needed, as well as fundamental changes in mindsets.

We have found that the five More Efficient case study high schools from our study have created a pervasive culture within the school community that produces important results: students and professionals steeped deeply in intellectual work and development. And we have found that these schools are good examples of emerging student-centered schools. They are worthy of being emulated. There are concrete practices, habits of mind, and strategies to be found in these More Efficient schools that other schools can begin to implement and evaluate immediately. It is hard work, and it will be steady work. Thinking deeply and innovatively requires time, practice and support. Intellectual work requires us to challenge some fundamental aspects of our beliefs and practices. It requires us to transform our schools and to expand our definition of a learning community. This also holds true even for the More Efficient schools. Their work is not done. They need greater transformation before they are truly student-centered schools preparing all students for the 21st Century.

More Efficient High Schools in Maine:

Emerging Student-Centered Learning Communities

David L. Silvernail   Erika K. Stump

Overview

American PK-12 public education is at a difficult and critical crossroads. Keen global competition, including increased competition from "the rise of the rest" countries such as Brazil, Russia, India, and China (Zakaria, 2011), underscores the need for exceptional performance in our primary and secondary schools. At the same time, state and federal governments face unprecedented budget deficits and limited resources for the foreseeable future. Patrick and Sturgis (2011) describe what states and the nation are facing in this way:

> *The increased global competition and economic pressures are of particular importance at the national and state level. Resource constraints are demanding that we find more cost-effective methods to educate our children. With the economic crises causing state budgets to tighten, the United States must find a way to do more with fewer resources, especially in K–12 education. (p .8)*

But even in these toughest of economic times, the role of society in ensuring that every child receives a first-rate education is not diminished. Rather, despite these particularly tough times, public education is challenged to do even more with less: to raise student performance, to raise it for **all** students, and to do so in More Efficient ways.

Additionally, our schools are being called upon to do an even better job of preparing students for the 21st century. There is growing evidence that success in the 21st Century requires more than what has traditionally been the content of schooling. It requires more and different types of knowledge, skills, and learning. A Partnership for 21st Century Skills report states:

> *Advanced economies, innovative industries and firms, and high-growth jobs require more educated workers with the ability to respond flexibly to complex problems, communicate effectively, manage information, work in teams and produce new knowledge.*

"The economic downturn has dramatically changed the fiscal climate for schools and districts, and our education system is about to enter a time of profound fiscal austerity. Schools will be pressed to stretch their education dollars further for years, perhaps decades."

-- Boser(2011)

To help students acquire this knowledge base and skills, many educators and leaders are calling for transformative changes in our schools, and changes in how we help students learn. Wagner (2008) explains:

> *…teaching all students to think and to be curious is much more than a technical problem for which educators, alone, are accountable. And more professional development for teachers and better textbooks and tests, though necessary, are insufficient as solutions. The problem goes much deeper— to the very way we conceive of the purpose and experience of schooling and what we expect our high school graduates to know and be able to do. (p. xxv)*

This transformative change is called by many names: performance-based learning, standards-based learning, and student-centered learning. Long advocated by educators, philosophers, and psychologists alike (e.g., Dewey, 1956; Rogers, 1983; Simon, 1999; Donnelly & Fitzmaurice, 2005), student-centered learning is viewed as the development of more independent learners, problem-solvers, and creative and critical thinkers—types of learners that many people believe are becoming even more important as we navigate the 21st century (e.g., Burkhardt, et al, 2003; Pink, 2005; Partnership for 21st Century Skills, 2008; Friedman & Mandelbaum, 2011).

The Nellie Mae Education Foundation (NMEF) describes this transformation to more student-centered learning as the need for:

> *….growing a greater variety of higher quality educational opportunities that enable all learners—especially and essentially underserved learners—to obtain the skills, knowledge and supports necessary to become civically engaged, economically self-sufficient lifelong learners. (2011)*

Can our schools be transformed to meet these challenges? **More importantly, can they be high performing, efficient, and student-centered at the same time?** To explore these questions, in 2010-11 the Center for Education Policy, Applied Research, and Evaluation at the University of Southern Maine conducted a study of a sample of More Efficient Maine high schools. Funded in part by the Nellie Mae Education Foundation, the study examined the degree to which these More Efficient high schools were also student-centered.

In 2010, NMEF identified some of the key principles and attributes of student-centered learning. The principles are that:

1. Student-centered education systems provide all students equal access to the skills and knowledge needed for college and career readiness in today's world.

2. Student-centered education systems align with current research on the learning process and motivation.

3. Student-centered education systems focus on mastery of skills and knowledge.

4. Student-centered education systems build student's identities through a positive culture with a foundation of strong relationships and high expectations.

5. Student-centered education systems empower and support parents, teachers, administrators, and other community members to encourage and guide learners through their educational journey.

The key attributes are that:

1. Curriculum, instruction and assessment embrace the skills and knowledge needed for success.

2. Community assets are harnessed to support and deepen learning experiences.

3. Time is used flexibly and includes learning opportunities outside the traditional school day and year.

4. Mastery-based strategies are employed to allow for pacing based on proficiency in skills and knowledge.

The goal of the study reported here was to determine to what extent these principles and attributes may be found in the high schools. To that end, once a sample of More Efficient high schools was identified, the beliefs, strategies, and practices found in these schools were examined in light of the 2010 NMEF key principles and attributes.

More Efficient High Schools

Before turning to an analysis of a sample of More Efficient high schools, it is important to define what it means to be More Efficient. In this study, More Efficient high schools were defined by two distinguishing characteristics. A More Efficient high school is one that exhibits **both** higher student performance **and** a higher return on spending, regardless of the economic and social conditions found in the local community. These schools are helping **all** students achieve more, and they are using their resources wisely to accomplish this goal.

For a school to be classified as being a More Efficient high school, it had to first meet a threshold of strong academic performance by:

- achieving higher than average student performance on statewide achievement tests at selected grade levels,

- maintaining higher than expected performance based on student demographics and prior academic performance,

- demonstrating academic proficiency for a majority of students, or making significant progress toward achieving this goal, and

- attaining a graduation rate above the state average.

Secondly, a high school with strong academic performance also had to be efficient by:

- achieving a higher return on their spending than found statewide, and

- achieving a higher return on spending than found in others communities with similar demographics.

Study Methodology

Both quantitative and qualitative techniques were used in conducting this study. First, we examined statewide assessment data and per pupil expenditures for all Maine high schools. Using aggregate data for two years (2007-2009), we examined all public high schools that had complete and useable data for both student performance and spending (n=107). We found that approximately 13% of the Maine high schools evaluated could be classified as higher performing (n=14), and approximately two-thirds of these high schools were also found to be More Efficient (n=9). Of the nine More Efficient high schools, five were selected for further study. In selecting the five schools, consideration was given to school size, geographic distribution across the state, and poverty levels.

Case studies were conducted on each of the five high schools. Teams of two or three researchers conducted site visits of 2-2 ½ days in duration. Each team included a teacher and an administrator, both of whom had significant experience in public schools as well as extensive knowledge and experience working with schools in Maine.

Prior to each site visit, researchers collected and analyzed documents relevant to the school (e.g. curriculum maps, course schedules, school handbooks, district policies, assessments, student work, school and district websites, related community publications, etc.). An interview with the building principal was then conducted to gather preliminary school information and develop a working schedule for the school site visit. During the site visits, multiple individual and focus group interviews were conducted with teachers, education technicians, support staff (cafeteria, custodial and office staff), administrators, parents and students. Over 100 interviews were conducted and recorded over the course of the study during high school site visits.

Each site visit also included multiple three- to five-minute observations of classes in progress, teacher planning or common time, staff meetings, front office exchanges, transportation drop-off and pick-up procedures, as well as hallway behavior and lunchroom habits. A total of 455 observations were made in the five More Efficient high school case study sites.

The case studies of the five More Efficient high schools were part of a larger study of More Efficient Maine schools at all grade levels, and a copy of this more comprehensive report, *More Efficient Schools in Maine: Learning Communities Building the Foundation of Intellectual Work* (2012), is available at www.usm.maine.edu/cepare. A more complete description of the mixed-method methodology used in this study appears in the comprehensive report. This includes the technical criteria used in identifying the study schools, as well as a more detailed description on the case study methodology. This report focusing on high schools has been generated to describe one aspect of the larger multi-phased study. The focus of this report has been to document to what extent the five More Efficient high schools in the larger study exemplify student-centered learning characteristics. Readers are encouraged to read the larger overall study report first, before turning to this more focused report.

Case Study Findings

As expected, the initial analysis of the case study evidence revealed many findings similar to those reported in other national and international studies of higher performing schools. More Efficient schools were more consistent in their high expectations and high standards for all members of the school community and implemented more rigorous curricula with engaging instruction. In addition, More Efficient Schools had good leadership, supportive school cultures, and many of the other characteristics found in our literature review. But a deeper analysis of the evidence also revealed that in the More Efficient Schools these features come together to form a distinctive culture: a culture that is more than the sum of the individual parts and consists of features that cut across and encompassed the categories of characteristics found in earlier studies.

What we found to be unique among the More Efficient Schools was **a singular, sustained focus that places students and their intellectual development at the center of all of the work.** These schools had created a strong foundation from which they continued their work to improve the education of all students.

Figure 1. **Distinctive Features of More Efficient Schools**
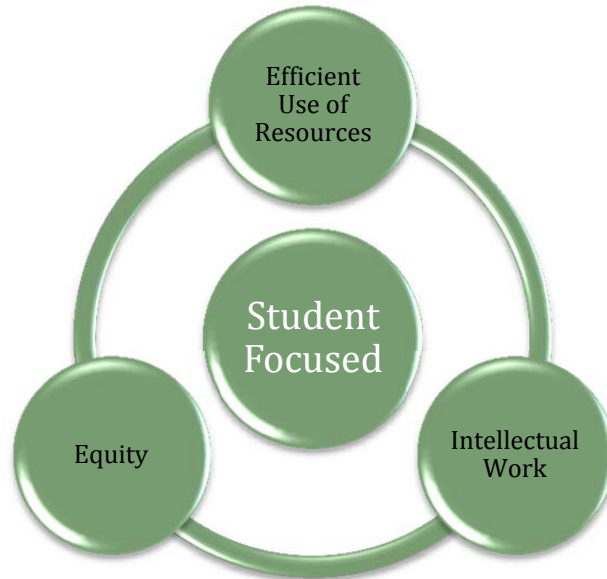
More Efficient Schools are student-focused learning communities in which there is systemic evidence of:

A) **Intellectual Work:**

    a. Students engage in intellectual work that involves academic knowledge and skills as well as social and behavioral learning.

    b. Adults engage in intellectual work to create instructional practices, curricula, professional learning programs, and leadership roles that improve student performance and are informed by assessment and experience.

B) **Equity:**

    c. Teachers and leaders believe they have a moral obligation to focus on the intellectual development of students as a means towards a better world.

    d. High standards and high expectations are held for <u>all</u> members of the school community.

C) **Efficient Use of Resources:**

    e. Human and financial resources are used efficiently to maximize learning opportunities for students and staff.

The key to the success of this model is the collective accountability and interaction of the whole sphere. While many Typical Schools (i.e., schools with mixed levels of performance) demonstrated progress towards this model and even strong practices in one or two isolated areas, the distinguish characteristic of More Efficient Schools was the **sustained, pervasive nature of all of these features working simultaneously.**

This culture of learning permeated throughout the school community in More Efficient Schools, including parents, support staff and community volunteers in addition to teachers, administrators and students. Similarly to what Hoy et al. found, "In such schools…students, teachers, and principals all respect academic achievement and work for success…academic press is a collective characteristic of the school; it refers to the normative and behavioral environment of the school" (Hoy, Sweetland and Smith, 2002). In addition, the work to maintain and improve upon this foundation was constant and thorough. As one teacher from a More Efficient School said, "Okay, we've done this well. How can we do it better next time?"

These features distinguishing More Efficient Schools are interwoven, and many of the practices and qualities observed in More Efficient Schools touch upon more than one category. A common thread of **intellectual work** can be seen in each. The concept of intellectual work is multi-dimensional and, like the overall culture of More Efficient Schools, more than the sum of its parts. Newmann and his colleagues have constructed a description of "**authentic intellectual work**" that comes closest to defining the characteristics we observed. This is work that entails the "…construction of knowledge, through the use of disciplined inquiry, to produce discourse, products, or performances that have value beyond school" (p. 14). In the words of Newmann et al. (1996),

> *[Authentic intellectual work] involves original application of knowledge and skills, rather than just routine use of facts and procedures. It also entails disciplined inquiry into the details of a particular problem and results in a product or presentation that has meaning or value beyond school.* (p. 14)

The Nellie Mae Education Foundation has described this type of intellectual work as "deep learning":

> *[D]eep learning…[goes] beyond acquiring information through memorization, and presents opportunities to analyze and think critically, write and speak effectively, and solve complex problems…It gives students opportunities to engage in complex,*
>
> *meaningful projects that require sustained engagement, time for reflection, research and collaboration, and to develop performances or products.* (2011)

In these More Efficient Schools, the school community engages in a pervasive, consistent practice of focused study that is "**fun *because* it is hard rather than *in spite* of being hard**." (Papert, 2002). Benjamin Bloom's levels of intellectual behavior (1956), known well as Bloom's Taxonomy, and the cognitive dimensions of Robert Marzano's and John Kendall's New Taxonomy of Educational Objectives (2000), also exemplify the continuum of intellectual work. While "intellectual" pursuits are too often seen as vague

ideas, as we are defining this type of work, it is actually a concrete process that can be observed, evaluated and aligned with distinct benchmarks or standards using Bloom's or Marzano's frameworks.

The intellectual work construct builds on theory related to knowledge transfer, which describes the underlying cognitive processes learners use in acquiring knowledge (National Research Council, 2000; Schwab, 1961; Perkins, 1992). Learners must deeply **understand** content materials, which include facts, concepts and skills as well as the broader theoretical and practical relationships and structures within a content area. This allows learners to **transform** their understanding into active illustrations or representations that can travel to a new context and provide unique, stimulating ideas. It is also crucial for the learner to have the skills to clearly and eloquently **share** those ideas with other learners in a manner that augments further study across disciplines and learning venues.

Figure 2. **Elements of Intellectual Work**
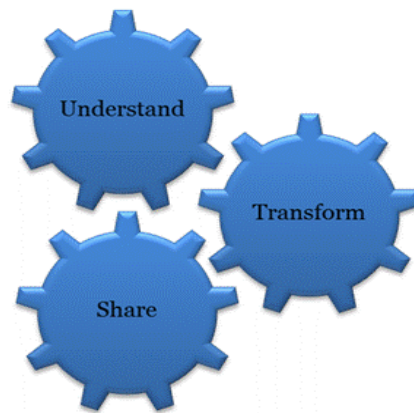
In More Efficient Schools, members of the school community demonstrated intellectual work through their ability to:

⇒ ***Understand***: focused, sustained and thorough academic (content knowledge and fundamental skills) and social/behavioral (interpersonal relationships, social trends, cultural norms, etc.) learning.

⇒ ***Transform***: constant inquiry using various reasoning processes and all levels of cognitive thinking to work with information and concepts in order to create innovative solutions.

⇒ ***Share***: clear communication of invigorating conclusions that enhance existing ideas.

This type of intellectual work was exhibited in many ways in More Efficient Schools, by a vast majority of the members of the school community. Students and teachers in More Efficient Schools were observed to be more deeply and more frequently engaged in working at more complex levels on the taxonomy than their counterparts in typical schools. This was demonstrated in:

- Student engagement level (defined simplistically as on-task behavior) and level of thinking (rated using Bloom's taxonomy) that were identified by researchers during classroom observations;
- Higher-order thinking skills demonstrated in student work products and student interviews;
- Staff and leadership decision-making processes regarding policies and strategies understood through teacher and administrator interviews;
- Academic and social standards as well as curriculum goals, outlined in guiding documents, that require students and teachers to engage with learning materials and each other in ways that demonstrate all cognitive levels.

Typical Schools, for the most part, were instead focused on creating polite, organized environments. Sara Lawrence Lightfoot describes schools in this developing phase: "*The institution has begun to emerge as stable and secure, but attention to the intellectual development and growth of students will require a different kind of focus, new pedagogical skills…*" (1983, p. 37). **More Efficient Schools appeared to be beyond this "stable and secure" phase and were indeed maintaining an academic focus that developed the intellectual skills of students and teachers.** This focus provided a foundation upon which other specific school reforms, improvement measures and other transformational work (such as standards-based progression and reporting, student-centered learning experiences, and/or professional teaming) could build upward and be more successful.

In summary, these five features come together to create a gestalt in the More Efficient Schools, a learning community that is student-focused and systemically engaged in intellectual inquiry. We have found that, in these schools, the students and their intellectual development are at the core of the work. All students are demonstrating progress in their intellectual development and academic achievement. These schools are also promoting and supporting this intellectual development in cost efficient ways. They are providing their community, parents, and students a higher return on spending. They are getting "a bigger bang for their buck."

The comprehensive report provides additional evidence and many examples of each of these features and practices in all grade levels. What follows in this report is an analysis of the five More Efficient high schools using a different lens. As C.P. Snow (1958), the British scientist and writer, once described, as the researcher turns the glass prism used in analyzing data, the data will appear in a different light. To that end, the distinguishing characteristics of the five More Efficient high schools were examined by turning the prism and closely

analyzing these five schools using the 2010 Nellie Mae Education Foundation's key characteristics of student-centered learning. The goal of the analysis was to determine to what extent these More Efficient high schools are also student-centered.

Student-Centered Characteristics of More Efficient Maine High Schools: Findings from the Case Studies

More Efficient Case Study School Descriptions

Before turning to the analyses, an overview of the five schools may be helpful. Each school is a public high school, ranging in size from approximately 530 students to 1100 students. These schools represent different geographic regions of the state and have varying levels of poverty. The five schools are:

Hampden Academy is part of Maine School Administrative District (MSAD) #22 and serves approximately 740 students in grades 9-12 from the towns of Winterport, Hampden, and Newburgh, which are rural and suburban riverside communities in central Maine. At the time of this study, approximately 21.5% of the student population was eligible for free and/or price-reduced lunch, 17% was identified as special education, and one student had been identified as Limited English Proficiency.

Marshwood High School is part of MSAD #35 and serves approximately 720 students in grades 9-12 from the towns of Eliot and South Berwick along the New Hampshire border in southern Maine. At the time of this study, approximately 9% of the student population was eligible for free and/or price-reduced lunch, approximately 9% were identified as special education, and less than 1% of students were designated as having limited English proficiency.

Presque Isle High School is part of MSAD #1 and serves approximately 530 students in grades 9-12 from the towns of Castle Hill, Chapman, Mapleton, Presque Isle, and Westfield, which are all communities in north central Aroostook County, Maine. At the time of this study, approximately 50% of the student population was eligible for free and/or price-reduced lunch, approximately 16% were identified as special education, and less than 1% of students were designated as having limited English proficiency.

Gorham High School is part of Gorham School District and serves approximately 860 students in grades 9-12 from the town of Gorham, which is a suburban community in southern Maine. At the time of this study, approximately 20% of the student population was eligible for free and/or price-reduced lunch, 14% was identified as special education, and eight students had been identified as Limited English Proficiency.

Scarborough High School is part of the Scarborough School District and serves approximately 1,065 students in grades 9-12 from the town of Scarborough, which is a

suburban community in the southern coast of Maine. At the time of this study, approximately 17% of the student population was eligible for free and/or price-reduced lunch, 11% was identified as special education, and 13 students had been identified as Limited English Proficiency.

Principles of More Student-Centered Schools

The case studies of these five More Efficient high schools uncovered many characteristics that exemplify the principles of more student-centered schools, as defined by the Nellie Mae Education Foundation.

Principle #1: Student-centered education systems provide all students equal access to the skills and knowledge needed for college and career readiness in the 21st century.

Through our observations, discussions, and exploration of policies and practices at the five case study high schools, we identified considerable evidence of this principle. For example:

➢ *School leadership and educators appeared to focus on the goal of high standards and improvement for all members of their school community.*

"Is there value added when students come to [this high school]?" asked one principal. A teacher's comment summarized a common feeling from staff and parents, "Administration is certainly committed to us being successful and students being successful, looking at ways to improve student performance...looking at how teachers teach, what do students need, how are we going to provide for this group of students that is already high performing, what are we going to do for these students who are struggling, looking at how we can meet those needs."

Even with new administration, this focus was a key to a successful leadership transition. As one school worked with a new principal, three school goals centered around organization, instruction and climate/culture were developed by school leaders to guide their work in future years. From observation and discussion with students and staff, it appeared that these goals were productively informing the actions and priorities of the building administrative team, the instructional leadership team, and individual school leaders.

At another school, this focus manifested itself as a constant awareness of student progress. Students reported consistently that teachers wanted them to do well and did not allow students to slip through the cracks: "They [teachers] don't want us to fail. They want us to succeed and go on to better things." Another student commented, "Teachers here want you to really <u>know</u> the material. They don't try to breeze through and teach you a lot of stuff that you can forget as soon as the test is over. They keep reviewing and reviewing until they are sure that you know it." As reported by students, teachers seemed to know how each

student was doing and what type of individual help or encouragement was needed at any given time. According to students, teachers did not allow students to do the bare minimum to complete a requirement; rather they would recommend the student to move to a higher level of the class (for example, from college preparatory to honors level) to get more of a challenge. On the other hand, teachers would also recommend a student to move down a level if he/she was struggling significantly. Students reported that teachers would work hard to help them through any type of academic struggle. Parents reported that teachers were continually raising the bar for students when challenges were met.

This goal of improvement also guided professional expectations held for school staff. Teachers reported in one school, "The attitude is that yes, there are obstacles, but we'll work it out, we'll get it done." Teachers also noted that, "We're held to high expectations...and collectively we have high expectations of each other" and "it quickly becomes known to the new teacher in the building that it is expected that you do a good job." In the past five years in this school, twenty teachers were hired using a team process with significant teacher involvement. School and district staff members often contributed hiring questions related to their school goals and needs. After being hired, the decisions to move from year one to year two probationary and then to continuing contract were taken very seriously with a number of new teachers not being recommended for continuing contracts.

➢ *With regards to student achievement, More Efficient high schools often focused their work on improving student performance, curriculum and instruction surrounding literacy skills (reading, writing and numeracy).*

Students in More Efficient high schools reported that they read and write across various content areas on a regular basis. Students described writing out explanations in math, receiving guidance in science and social studies about effective note-taking strategies, and writing finished essays weekly in English. Students from all grade levels in one school, including students attending classes at a career and technology center connected to the high school, reported being required to read daily in class and discussing or being quizzed on their

reading. In this high school, teachers reported, and researchers observed at a staff meeting, that practitioners have received ongoing support and professional development enabling them to better support student growth in literacy.

In another school, a teacher indicated, "No matter where you do your writing, you should be re-reading before you turn it in." Classroom observations revealed substantial writing in English classes: research writing (I-Search) in all ninth grade English classes (including the Alternative Education Program), as well as personal essays, five-paragraph essays, prompt-based essays, cover letters and resumes in other courses. In other cases, students were observed incorporating assessed writing tasks across the content areas: writing Latin translations, Science lab reports, History position papers, and Math solution descriptions. Students, parents, and teachers also indicated that the use of textbooks at multiple reading levels within a single course, PLATO Learning (online courses), and ALEKS (online math program) provided important support for students learning equitable content at different literacy levels.

➢ *High standards for all members of the school community existed surrounding college and career readiness, while incorporating equal access to the multiple pathways, skills and knowledge needed for future success.*

Teachers and guidance staff at one high school worked together to create action plans for each student. Each plan was monitored, and interventions were initiated whenever a student began to fail or fall behind. Teachers were encouraged to take the lead on interventions, but guidance counselors actively participated to offer additional help as well. Students were not academically tracked in the traditional sense, but were encouraged to enroll in courses with varied academic challenge levels based on their abilities and interests. Teachers reported that many teachers used their twice-weekly advisory group periods as a way to monitor and check on their advisees' progress on their action plans.

Within the regular course offerings, students in many More Efficient high schools enjoyed choice, including Senior Electives, Family & Consumer Science, Woodworking, vocational program courses and numerous Advanced Placement (AP) courses. Students could supplement this curriculum with courses from Virtual High School, college level courses, as well as some summer courses offered by the high school to redeem credits in some cases or accelerate in preparation for AP courses. In one school, students and parents spoke highly of the United Technologies Center opportunities for vocational education, and students also participated in a "Work Ready" program that provides (at no cost to the school) internships and career education opportunities.

➢ *These More Efficient high schools had systems in place to monitor students' academic performance and achievement.*

In More Efficient schools, each of the variety of programs offered to students with varying needs appeared to be accepted and did not seem to carry a negative social stigma. Special needs students were a visible, integrated, and positive part of the daily school activities. For example, during our visit to one high school, the local access television

channel was filming a small group of students with special needs raising the flag outside the school building. These students and others with more extensive physical needs were observed having positive interactions with a variety of students throughout the school day.

Many More Efficient high schools had learning support classes or centers. One high school staffed a Learning Center throughout the day, often with four or more teachers, where students received extra help in needed subjects. Guidance counselors actively monitored students who were at risk of failure and assigned students to the Learning Center or to "Help Central," a before-school and after-school room staffed by an educational technician that contained a variety of computer work stations with a varied menu of tutorial programs in different content areas. In another school, two full-time, certified teachers (Math and English) staffed a full-day Study Center and offered academic assistance to many students in all academic course levels. In focus groups in this school, students indicated that there was no negative stigma surrounding the Study Center, in fact, students in Advanced Placement courses and students just wanting a private study space used it in addition to students with significant academic struggles.

Faculty and staff at a few More Efficient high schools noted that more ninth graders were struggling each year, and the course failure rate for incoming students was increasing. To help freshmen make a smoother transition into high school, the faculty at one school engaged in a period of self-examination and decided to implement Freshmen Academies and a Freshmen BRIDGES (Building Relationships, Increasing Determination, Good Experience in School) alternative education program for high-risk students. It is notable that in the implementation of the Freshmen Academies, the focus was not on students identifying with this new structure, such as belonging to a house, but rather to increase teacher collaboration to ensure clear communication of academic and behavioral norms and

to facilitate ongoing teacher conversation about whether students are meeting expectations and to take quick action when students struggled.

➢ *More Efficient high schools were working diligently to develop a greater consistency in the students' experience through professional collaboration and maximizing the efficient use of instructional time.*

Students at one case study high school had a great deal of instructional time built into a typical school day. Passing time between classes was four minutes. Students who maintained passing grades in all classes were given an "SAC pass," which allowed them more freedom to move to the library or cafeteria for study hall but notably did not provide early release or open campus privileges. Additionally, students were academically engaged during a majority of the scheduled school day through extensive use of the Learning Center, Help Central, and other venues for informal study such as the library and technology. In addition, teachers' emphasis on instructional strategies to keep students engaged in lessons throughout the designated class period added more "instructional efficiency." Lastly, researchers noted a common agreement by teachers in this school to set aside one hour per week of after-school time for tutoring or "office hours."

A reorganization of special education services at one case study school and district level reportedly led to more focused instruction and More Efficient use of staffing resources. The special education staff was reorganized to shift one of the resource positions to an instructional strategist to provide much of the testing and program coordination, freeing up the other resource teachers to provide targeted skill instruction. The resource teachers then reorganized to "specialize" in reading, math or writing and organized their caseloads roughly around these areas of focus. At the same time, the district shifted identification practices to stress ongoing support for students not meeting standards focused in part through response to intervention (RTI).

Teaching staff in these high schools clearly valued collaboration, especially within their subject-area departments, as well as autonomy in pursuit of providing challenging, engaging courses. Teachers in one school said that they believed "the spirit of the curriculum is common," but also indicated that they appreciated working in a framework of autonomy and accountability. This English department created a common writing rubric for argument essays used within the department and shared with other departments.

At another case study high school, some similar systems were in place to provide opportunities for teachers to informally collaborate and discuss student performance. For example, English, Social Studies and Science teachers who shared some 9th grade class rosters and a common planning period used this time to collaborate on curriculum, assessments and discuss student learning. As a department, English teachers developed a common core curriculum tied to national or state standards that included four common, required texts per grade level, a common research paper in 10th grade, and common midterm and final exams. Science teachers indicated that specific courses had about a 75% common curriculum and collaborative work was a goal of their department in terms of curriculum and

professional development. Some interdisciplinary curriculum was in place as well in Science and Spanish and English and History. Most departments in this school were working towards or already had common exams.

➢ *These More Efficient case study high schools clearly understood the importance of technology in the 21ˢᵗ century and integrated it effectively into their curricula and instructional practices.*

Although some schools could not extend one-to-one learning technology beyond Maine's Learning Technology Initiative that provided laptops for all students in grades 6-8, More Efficient high schools developed structures to make good use of the technology they did have. One school maintained several "COWs" (Computers on Wheels—classroom sets of laptops) that were widely used by students and teachers for appropriate lessons.

In another school, four carts containing classroom sets of laptops were available for teachers to use. A large computer lab with desktop computers was well used by students from study halls and on occasion by entire classes of students. Perhaps most impressive was the number of Smart Boards in the school and extent to which they were used. All of the math classrooms contained SmartBoards mounted on the wall, and the SmartBoards were being utilized by the teacher to go over homework problems with students. The school's technology integrator also met with each department once a month and provided mini-professional development opportunities to the whole group and worked on an individual basis with teachers who needed assistance.

In another school, many resources were utilized by some teaching staff to incorporate technology in a manner that could enhance students' education: all students had individual laptops since 2009, class-based wikis, online textbooks (especially used in Math classes), GoogleDocs (classroom editing and for Special Education student behavior reports), online courses, FirstClass communication system, video editing, etc. A teacher indicated that the "options are here." The school was also exploring on-line textbooks as eventual cost savers and back savers that will also allow students at various literacy levels more readily access content. In managing this valuable resource, the district technology staff also found that teachers who valued and regularly used the laptops with their students demonstrated a significantly reduced rate of repairs and inappropriate use from students.

The illustrations described above demonstrate a school focus on improvement and literacy, high standards upheld within multiple pathways, interventions for struggling and excelling students, consistency in programming, as well as a valuable use of technology in the More Efficient case study high schools. These schools demonstrated considerable evidence of providing **student-centered education systems that offer equal access to the skills and knowledge needed for college and career readiness in the 21st century.**

Principle #2: Student-centered education systems align with current research on the learning process and motivation.

Through our observations, discussions, and exploration of policies and practices at the five case study high schools, we identified considerable evidence of this principle. For example:

➢ *More Efficient schools focused their professional development time on research and data analysis that directly improved student learning.*

One More Efficient high school transformed its daily schedule, both structurally and in terms of individual teacher practice, after significant research altered their understanding of how to be most efficient in providing learning experiences to teenage students. Their school day started at 8:30 AM, later than is traditionally scheduled at high schools. According to national research, this allows students more time to wake up in the morning and prepare their brains for instruction. We observed students throughout classrooms alert and attentive in their first class of the day.

Also with regard to time, teachers in More Efficient high schools were observed teaching from "bell to bell" with little wasted time transitioning to the lesson when students entered the room and no time given at the end of class to socialize or work on homework. If teachers finished their lesson early, they moved into the very beginnings of the next lesson (where appropriate) or they conducted review until the bell rang.

Many of these More Efficient high schools also provided regular common time (without students) within the contractual day for teachers to collaboratively and independently research instructional strategies and analyze their student data. Our observations confirmed that a majority of these schools used their faculty meetings and common planning time engaging in focused work directly related to improving students' academic performance. Teachers indicated that this was important professional time, "In our department meetings we have meaningful conversations about instruction: what is good instruction, what is not."

In two high schools the teaching staff met annually to read, score and discuss a common writing sample taken by all 11th grade students. In another school, a Data Review Team met quarterly to identify students who did not meet proficiency standards on the 8th grade statewide assessment (New England Common Assessment Program), 10th grade PSAT

and 11th grade statewide assessment (SAT). In another school, educators worked collaboratively with their learning experiences surrounding <u>Pyramid Response to Intervention</u> (Buffum, Mattos, Weber, 2009), then school-wide RTI teams met frequently to determine interventions for students not meeting standards and continued to monitor student progress through common course assessments, quarter grades, and teacher/parent input.

Staff from More Efficient high schools also gathered and analyzed their own data at times by using surveys. One school had a trained Walkthrough Team of teaching staff that was provided release time to conduct observations and analyze findings. We observed one staff that spent an extended amount of time at a faculty meeting discussing the results of a district-wide Culture and Leadership Survey completed by staff members, analyzed by Team Leaders and used to guide school goals and planning. Many teachers encouraged their students to complete end-of-course feedback surveys, and in one school this process was officially organized and sponsored by the Student Council.

➤ *Teaching staff in More Efficient high schools frequently shared their professional learning from research to transform and improve their own practice and student learning experiences.*

The Walkthrough Team mentioned above presented their conclusions to the entire faculty during a regular faculty meeting, at which time staff members collaborated to create goals for changes in instruction to increase the frequency of higher order thinking tasks and activities for students. Also in the previously mentioned example of student surveys, the Student Council provided the results to the teachers in a joint Student-Teacher Councils meeting. Teachers cited this as a valuable adjunct tool for evaluating and changing content as well as instructional choices.

Common time was often used in More Efficient high schools to allow internal experts—individuals and small groups of staff members—to share the results of their research and analysis. Often professional development opportunities for technology learning were offered by a Technology Integrator or Technology Director during "ten-minute technology tips" at a faculty meeting, individual or small group coaching or mini-lessons in department meetings, skill assessments for teaching staff during subject area common periods and release day sessions relevant to specific curriculum. Early release days and in-service staff days were also dedicated to "Unit Work" in one More Efficient high school. This was a concept developed by Team Leaders to provide time for teachers to collaboratively create, develop or enhance a unit of study that incorporates technology and focuses on literacy or numeracy skills.

Using the tools from external sources and guidance of colleagues, staff members in More Efficient high schools demonstrated a process of learning and accountability that was shared between teachers and administrators. A few teachers commented that they do not hesitate to politely, but directly, call a colleague to account if they felt that professional expectations were not being met. Administrators noted that some departments take the initiative to offer peer support in improving instructional practice. For their part, teachers seemed quite accepting of the focus on standards and accountability.

Students noted that the result of this work was a more inspired classroom. Students in several More Efficient high schools said that a number of teachers had deep knowledge inside and outside of the classroom regarding their subjects, which they contended motivated students to be more engaged with the content. Comments like, "teachers' curiosity rubs off on us" and "teachers have a genuine interest in what they are teaching" were heard in our focus groups with students. Teachers referenced the work ethic of a number of their colleagues whose search for innovative practices, intellectual curiosity and high standards was an "inspiration."

The illustrations described above demonstrate an effective use of the intellectual work process of understanding, transforming and sharing in some of the More Efficient case study high schools. Using this process, these schools demonstrated some evidence of providing **student-centered education systems that aligned with current research on the learning process and motivation.**

Principle #3: Student-centered education systems focus on mastery of skills and knowledge.

Through our observations, discussions, and exploration of policies and practices at the five case study high schools, we identified considerable evidence of this principle. For example:

➢ *As also mentioned above with regards to Principle #1, More Efficient high schools had an evident focus in curriculum and learning on literacy (reading, writing and numeracy).*

A science teacher noted, "We have made a concerted effort to develop literacy across the curriculum. There are certain practices we now do that we didn't do before: frontload vocabulary, create vocabulary walls, text previewing before we ask kids to read, then talk about what they see in the text." Students also reported that reading and writing happens across content areas with reading daily in class, frequent note taking, and essays often weekly. Addressing this focus, students in upper-level English classes recently began a student-staffed Writing Center. Special Education teachers also indicated that they saw all departments using literacy language across the school and found this especially helpful for students with special needs. Various literacy intervention courses had been added in the past few years and are required for certain students based on demonstrated levels of proficiency: Reading and Math Seminar, Reading and Math Targeted Intervention, and Senior Critical Reading Elective. Frequent sharing opportunities, such as those mentioned in the previous section, about best practices were available and embraced during the faculty meeting.

Twice per year, a district-wide writing prompt (using released SAT prompts and rubrics at the high school) was administered to students at one More Efficient high school and assessed by their English teachers. Students in the Reading and Writing Workshop took a Northwest Evaluation Association's computer-based assessment (NWEA) three times per year and the Cognitive Abilities Test (CogAT) once per year. The NWEA was administered annually, with an identified benchmark score, after which students would no longer need to take the assessment. This was reported to result in higher scores as students had a "stake in the game" and more effectively identified students truly in need of support and intervention.

➢ *Educators and leaders used student proficiency of key skills and knowledge as demonstrated on common assessments to inform course selection and academic program pathways.*
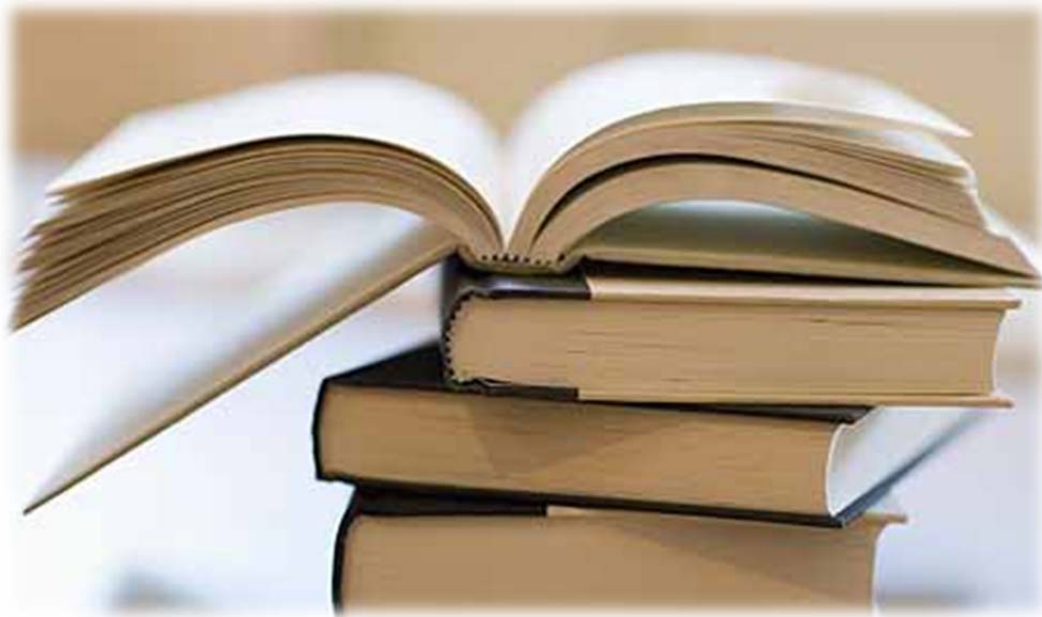
In several More Efficient high schools, students took the NWEA in fall and spring, with selected students who were struggling taking it in the winter as well. At one school, students in 9th grade took the Maze assessment as part of the AIMSweb progress and monitoring system three times per year. Students in certain programs also took the Accuplacer and Armed Services Vocational Aptitude Battery (ASVAB). TeenScreen (a mental health survey) and the XAP Choices Planner survey (a career preference survey) were also administered to students by guidance counselors. In this school, time was then provided for teachers to review assessment results, and the Data Team (consisting of teachers, guidance, and administrators) met regularly to analyze data from these assessments in order to better guide students on their enrollment and course of studies.

In another school, the Guidance, Math, and English departments used the 8th grade statewide NECAP assessment data and the 10th grade PSAT data to identify students who needed extra interventions to improve basic language arts and mathematics skills. Students identified as being "on the bubble" to move from one proficiency classification to another (e.g., "Does Not Meet" to "Partially Meets," and "Partially Meets" to "Meets") were assigned to work with software tutorial programs maintained in Help Central study center and in the computer lab near the English department. Teachers and guidance counselors monitored the students' progress through the Student Action Plan. These students were also likely to be assigned to the Learning Center to receive extra tutorial assistance to maintain and improve skill levels in their regular course assignments. In several schools, course selection was based on student performance in various areas, including statewide assessments, classroom assessments, course grades, standardized assessments as well as teacher recommendations.

Most of the More Efficient case study high schools were increasing their collaborative work to develop common assessments or interdisciplinary curricula. Some teachers in More Efficient high schools also worked together to create cross curriculum units. For example, one Science teacher and a Spanish teacher developed an interdisciplinary studies unit surrounding South American butterfly migration that incorporated a high-level literary text.

One More Efficient high school had recently developed a dual reporting system for report cards utilizing traditional grades and standards. While still a system that teachers and students reported was very much in progress, the process of getting to this point was credited with adding consistency in the curriculum, and spurring development of common course assessments for all courses. Teachers in a number of focus groups cited the importance of the conversations about standards, which led to, among other things, the adoption of common textbook series for Algebra I, II and Geometry in order to facilitate the work of consistency across sections. More important perhaps, as indicated in the words of a number of teachers, this process pushed the school to wrestle with the balance of highly valued teacher autonomy in designing engaging instruction and accountability for ensuring consistency of high academic standards in areas considered essential for all students.

These illustrations demonstrate the focus on fundamental literacy skills as well as the professional work necessary to adapt curriculum and student pathways based on students' mastery of skills and knowledge in some of the More Efficient case study high schools. Using this process, these schools demonstrated some evidence of providing **student-centered education systems that focus on mastery of skills and knowledge.**

Principle #4: Student-centered education systems build student's identities through positive culture with a foundation of strong relationships and high expectations.

Through our observations, discussions, and exploration of policies and practices at the five case study high schools, we identified considerable evidence of this principle. For example:

➢ *Explicit and consistent high expectations for all members of the school community created a culture in More Efficient schools that formally and informally created and maintained high standards in intellectual work, study habits and social interactions.*

Many of the case study More Efficient high schools had recently completed the New England Association of Schools and Colleges (NEASC) accreditation process, during which they had created a mission and clearly identified academic, social and civic expectations that were created collaboratively with faculty and community. Several schools communicated standards and expectations in writing in key documents, including the faculty handbook that laid out global and specific curricular, instructional and behavioral expectations for teachers. Beyond what was written, schools took advantage of multiple opportunities to communicate standards and expectations and to make them real for teachers so that they would communicate them consistently for students. School-wide rubrics were clear for the five academic expectations in one high school, with a detailed chart in the faculty handbook detailing primary and secondary responsibility. New teachers were mentored by the department heads and other teachers to set high and consistent expectations. "We're not afraid to work hard," said one teacher. In another school, all freshmen teachers also taught at least one upper level class to help them to raise the bar with freshmen.

The standards for behavior for students also provide a framework that resulted in evident respect for each other that far exceeded the rules set forth by administration. Students at one More Efficient high school suggested that they "learn about respectful behavior starting in elementary school and it just carries through for us from there." They appeared to take an ownership and responsibility for their conduct without it having to be reinforced all the time. Not only did they appear to respect their peers at school, but also they communicated an incredible awareness of how they are perceived outside their school building. Students suggested that they do not want to be seen by students from other schools as acting poorly or being disrespectful because they know how much their conduct reflects on the school. More tangibly, students and teachers reported that there was very little bullying at the school but if it was detected it was dealt with immediately and appropriately.

Students were also able to clearly articulate expectations for infractions such as not adhering to the dress code, texting in class, being tardy for school, and misbehaving in class (though little of this was reported or observed). All of the expectations for student conduct and behavior were set forth in the student handbook, mentioned numerous times by students and teachers. Students suggested that they actually read the handbook and that, "A lot of the teachers have them and refer to them a lot." Despite what to some may seem like a restrictive environment, students at this high school seemed to appreciate the rules. One student commented that, "I think with all the rules set in place it makes it a better place." Another student commented that, "It doesn't even feel that strict, it's pretty relaxed."

Many schools had a full-time substance abuse counselor; some schools were involved with the Center for Preventing Hate's Unity Project, and building administrators demonstrated the conscious effort to address these issues. One principal said that there was an "environment of respect and safety" in his school because the Gay Straight Alliance, Civil Rights Team, and Key Club were active groups sending constant messages of respect and awareness. In virtually every area of that building, including most classroom and office doors, "Safe Space" stickers and posters were displayed (indicating a safe environment for lesbian, gay, bisexual and straight people). Various clubs in More Efficient schools had posters around the school encouraging students to use respectful language, engage in community service, and raise awareness of social injustice.

As one teacher noted, "We always talk about having rigorous courses and high expectations." School staff noted that many students had "very watchful systems" surrounding them to encourage and maintain high aspirations. Students and teachers also noted PowerSchool as a tool to hold students to high expectations. With assignments posted in the course grade book and e-mails from the "parent portal" sent to parents weekly, missing assignments and low grades get noticed quickly and students report feeling pressure from parents and teachers about staying current with their responsibilities.

➢ *In More Efficient schools, students were seen as the focus of the education system, and practices had been put in place that allowed a great number of adults from the school staff and community to connect with children in a manner that mutually supported their intellectual development.*

An overall culture of student-focused support was apparent in social interactions between students and staff, the care and investment in the physical plant, and student actions in the classroom in many More Efficient schools. In one school, a member of the school staff indicated, "students know that teachers care" and "are very aware of kids' struggles." A student said that a strength of the school was that "teachers know us well…and understand how we work."

Some restructuring and staffing decisions improved efficiency of administrative of one school, allowing these staff members to have more time and energy to engage in focused, personal interactions with students throughout the day. The guidance office in this school began a three-year re-structuring in the organization of their department, maintaining

the same staff levels but reducing student caseload for a director so he/she could take on more planning and administrative work. The current director indicated that this allowed more focus and clarity in their own schedules as well as their availability to students. The front office administrative assistants both indicated being very comfortable with technology and had prior experience in the business sector, which appeared to allow them to use data management programs in an effective manner and apparently streamline some methods of record-keeping. This meant they were more available to be a caring, knowledgeable front desk resource for students and community, while also promptly completing their administrative tasks.

In focus groups conducted by researchers in numerous schools, it was very clear that everyone in the school truly cared about one another. The locus of caring was apparent between all groups: teacher-teacher, administration-teacher, teacher-student, and student-student. One teacher reported that, "First and foremost, we care about kids." Another teacher also suggested, "Everyone genuinely wants to see everyone here succeed." A student echoed this sentiment, "[Adults in this school] go out of their way because they want us to succeed." Students in most More Efficient high schools visited also reported that they believed there was one adult in the building with whom they felt comfortable talking if they were having any type of problem. Students indicated that most students involved in an extra-curricular activity had a good or great relationship with the adult leader/coach. Several school schedules included an Advisory period, which included a consistent group for four years so that every student had a small group interaction with a staff member. Students said, and observations confirmed, that this time was used mostly for social interactions that allowed students to have a different relationship with teachers and get to know their group members on a more social level.

➢ *The student-focused systems in place in the high schools included purposeful methods for maintaining a strong awareness of each individual student.*

A strong aspect of preventing students from falling through any gaps was a school's response team, which was made up of various school staff members and sometimes eighth-grade guidance counselors. The team usually met weekly for at least one hour to discuss

students demonstrating risk factors. One school began an Academic Advisory program with grade-level goals, which served as another place for students to make a connection with faculty outside of academics. Staff in all the More Efficient case study schools appeared to be working diligently to make sure all students felt a connection and were known well by at least one adult in the building.

Frequent recognition of student achievement occurred in various forms in More Efficient high schools. Student accolades were celebrated in newsletters, announcements, newspaper articles, and public displays throughout the school building. While athletic achievements were numerous, other groups such as Drama, Music, Math Team, and Art were recognized enthusiastically as well. Students indicated that there was a great deal of school spirit, which culminated in pep rallies that were held for various achievements, not just athletics, about three times per year. This spirit was built upon a strong sense of pride and high expectation in academics for all areas. As one student noted, "At [this high school], you're going to go towards academics because with that comes the school spirit."

Staff members in these high schools understood the value of standardized assessments, especially in terms of determining interventions, but also believed in the importance of engaging, relevant educational practices that appealed to individual students. In some of the More Efficient high schools, teachers were provided professional development time at least once per year to analyze SAT scores. In one school, the Math department used PSAT and SAT scores to develop grade-level targets and identify "bubble" students while the English department incorporated a school-wide SAT writing prompt taken by all students twice per year and received release time for common scoring as well as identifying trends and needs for instruction. Additionally, classroom walkthrough observations conducted by colleagues in one school provided additional important feedback about student engagement and higher order thinking that was not evident from standardized test scores.

The illustrations described above demonstrate a school focus on students' intellectual development, high expectations and supporting individual students' needs. These schools demonstrated considerable evidence of providing **student-centered education systems that build student's identities through positive culture with a foundation of strong relationships and high expectations.**

Principle #5: Student-centered education systems empower and support parents, teachers, administrators, and other community members to encourage and guide learners through their educational journey.

Through our observations, discussions, and exploration of policies and practices at the five case study high schools, we identified considerable evidence of this principle. For example:

➢ *More Efficient high schools developed inclusive systems within their building to support and challenge students.*

As discussed in previous sections, administrators and guidance counselors in most of the More Efficient high schools visited had developed information-sharing systems and support structures to proactively intervene with at-risk students. In an effort to assure at-risk students were promptly noticed, supported and guided throughout their four years at one school, all incoming 9th grade students identified as at-risk in one high school were the first students scheduled to meet with their guidance counselor during the first week of high school. Administrators and teachers in many of these schools reported that the guidance staff played a strong coordinating role in keeping the relevant staff members informed about the present status of these students. Students who spoke with us and had been identified as being in danger of academic failure stated that they believed most teachers would make extra efforts to help students succeed. The special education staff in one school noted that the school worked to reduce the number of special education students working with an I.E.P., preferring to gently push them into more mainstream classes with support from the general teaching population whenever possible.

Students in More Efficient Schools consistently reported that they knew that adults cared about students' well being. A student who self-identified as a non-academic student only marginally connected to school said, "Teachers are often willing to work harder than they have to in order to help students out." The age mix of the faculty - veteran, mid-career and younger teachers - contributed to the variety of ways of relating to students, yet all seemed able to maintain a balance between a business-like formality and a friendly, warm atmosphere in class. As part of the organization of student support and guidance services, another school maintained a "placement" office to coordinate the college process for all students. In addition to setting up a supportive system to guide students through the collage application process and hosting a large number of college recruiting visits over the course of the year, the school worked with the local chamber of commerce on a "Career Fair" and hosted a "Colleges in Maine" fair on one of the days of our visit that was attended by a large majority of sophomores and juniors. Guidance counselors reported that students currently in college would contact them for advice about whether or not to transfer to a new school.

Administrators, staff, and students set high standards for civility and appropriate conduct for the school community. One school monitored its students' academic and social behavior closely through the closed campus, supervised study halls, and the opportunity to earn the privilege through the "SAC Pass" to use time to explore extra learning opportunities in the library, technology center or the arts programs rather than just "hanging out." In interviews with adults from several More Efficient high schools serving in various professional positions—administrators, guidance counselors, teachers, custodial staff, kitchen staff, support staff, etc.— reflected that members of the school community placed an equally high regard for maintaining a strong sense of courteous, respectful behavior and an atmosphere of civility throughout the school, at all times of day and in all parts of the

school. One school encouraged acceptance of ethnically diverse populations by displaying the national flag for each of the school's foreign exchange students in the front lobby. From the time students entered another school, researchers observed students interacting with each other and with adults courteously and appropriately, frequently making eye contact and offering a smile or a hello to visitors, their friends and school employees.

This general sense of high standards extended to adult-adult interaction as well. Teachers said that they held themselves and each other accountable for high behavioral standards both in classrooms and out. One of the two assistant principals in one high school noted that adults in the building had, "Spent a lot of time defining what a positive interaction between kids and adults should look like, and then we set about modeling it and setting these behaviors as expectations for our interactions with both kids and adults." Teachers noted that there was strong, open communication among staff and veteran teachers provided valuable support and resources to newly hired teachers. High professional expectations were prevalent among staff, "You see people around you doing a really good job, and you don't have an excuse not to do the same."

This work to support and challenge the intellectual development of students was also seen in curriculum development and instructional strategies. Teachers in More Efficient high schools sought out and integrated community resources into courses to enrich experiences for students. One music department incorporated guest conductors to work with student groups to enrich their experience. Additionally, History and English classes in this school brought in guest speakers to add relevance and connection to the material studied. For example, a holocaust survivor to spoke to classes when studying the World War II era. A biology teacher worked with a professor at USM to design a new way of sedating fruit flies enabling experiments on genetics tracking traits of fruit flies over multiple generations.

> *A majority of these More Efficient high schools worked deliberately to build strong communication between the school and students' families, both on a school-wide and an individual student level.*

One school's website provided students, teachers, parents and the community with extensive information and tools to support student learning and to keep up to date with events and projects taking place at the school. Their other printed materials, such as the Student Handbook and the Course Guide, were clearly written and focus first and foremost on expectations for student learning, both academic and social. Parents reported in one school that they can almost always connect with a live person when calling on the phone, and that if their child failed to show up at school they quickly were notified on all their email addresses. Attendance and academic progress was available to parents from most schools via PowerSchool or Infinite Campus, data management systems. In some of these high schools, automated phone calls and mass emails provided appropriate and timely updates for school information, and the principal's quarterly newsletters were considered informative. Parents also said that many teachers initiated contact on an individual basis as needed, and that teachers were always accessible to parents at their initiative. It appeared that teachers and school staff at More Efficient high schools also regularly contacted parents with positive news and understand the critical importance of developing trusting relationships between school and families.

Parents were often invited into these schools for meetings, open house and celebrations throughout the school year, including meetings or curriculum nights for parents of entering 9th graders prior to the start of the school year, parent/teacher conferences and an open house at the start of the school year, college financial aid night that included workshops for parents, and a night that invited 10th grade parents to meet with guidance counselors to discuss course selection for the junior and senior years.

> *Districts and schools pursued valuable opportunities to collaborate regionally in a way that allowed the school to enhance the intellectual work being done within their buildings.*

One district took many steps—such as joining regional collaborations for purchasing oil and Workmen's Compensation insurance, bidding out transportation services for price and predictability of expense, and cutting non-core areas—to save money while still protecting classroom instruction and programs believed to add high value to the school. The school also developed a partnership with a local hospital to share a substance abuse counselor and a social worker to staff the school's drop-in counseling center. Their multi-disciplinary student assistance team also actively pursued funding and partnerships with outside agencies to expand programmatic supports for individual students.

In a few of these high schools, the collaboration extended to national parks and local universities. The science department in one school had several teachers that were engaging in professional work in their field that appeared to be directly improving student experiences. For example,

➢ Students worked in the field at Acadia National Park collecting and analyzing data as part of a national mercury research project;

➢ A high school biology teacher and a University of Southern Maine professor collaborated to design a new way of sedating (instead of killing) fruit flies that enabled genetics tracking traits experiments to be conducted over multiple generations of flies;

➢ Students entered models to the University of Maine's Floating Wind Turbine Invention Competition.

These experiences allowed students the opportunity to master several types of skills and knowledge in authentic educational settings and provided teachers with information about how their students performed in these learning environments.

Students in numerous schools also engaged in community service, including a teacher apprentice program with neighboring elementary and middle schools, a school-wide effort to assist the local homeless shelter through fundraising and volunteering, community-based project as part of the senior year, required hours of community service by all student-athletes, and others. In one school, all seniors had to complete a twenty-hour community service requirement in order to march in the graduation ceremony, though many students far exceeded this minimum. Here, all varsity athletes were also required to be engaged in service, and the athletic director said he believed that this reciprocal demonstration of school and town collaboration paid dividends in community support for school programs in general.

➢ *Over time, More Efficient high schools built strong community support for the intellectual work being done at the school.*

Groups of teachers, students and parents indicated that the community historically showed great pride in their schools that was felt by teachers and students. As one parent noted, "There is a strong sense of community." We heard a great many statements of pride as parents, students and staff described this school. In fact, many parents said they had moved to a community in order to enroll their children in the district.

Residents of two towns in another school's district maintained a strong history of tangible and intangible support for all aspects of the school's programs. The two communities had a mixture of long time Maine residents representing several generations in the community and newcomer professionals moving in from greater Boston and New Hampshire. The former group was said to maintain a strong loyalty to the school and its traditions, and the latter group chose the district in large part because of the schools. Despite the challenge of a severely rising local tax burden, the economic downturn, and the consequent need to endure budget and program cuts, community groups and individuals were generous in offering their time and treasure to support all aspects of the school's curricular and extra-curricular programs. In interviews, teachers and administrators cited the fact that parents have always played a strong role in the formal, elected leadership of the district on the regional school board. The respondents believed that the level of parental

involvement resulted in a consistent advocacy for maintaining and supporting high quality education.

Fundraising by the local community also provided significant support to students at the school. Recently, one community voted to bond six million dollars beyond what the state would fund for a new school in order to build the school that they determined they needed for their community. The additional funding would allow for larger science classrooms that meet national standards for size, a nine hundred-seat auditorium and construction of a larger gym. In addition, a significant fundraiser was held in one school recent years and raised over $70,000 for an emergency fund for the school. A parent commented that the fund was, "Meant to take care of the needs that interfere with learning." Money in the emergency fund was used to buy everything from backpacks to gym clothes to fuel for a family's home and even to rent a tuxedo so a student could attend the prom. One school's Education Foundation existed to support the efforts of teachers and schools and this past year funded teacher time to collaboratively score and analyze school-wide SAT style writing prompts, allowing teachers to both better understand student needs and assess school curriculum.

For several schools, the building itself was a community center where people gathered for performances, sports games, and fundraising events. One parent called the local high school a "building that never sleeps." There was significant attendance of local citizens, both parents and community members without children attending the school, at any event involving students at the school. The school and the community services department for one town maintained close communication and coordination resulting in very high building and field usage. From discussions and observations, it also appeared that the community views the school and community services programs as one and the same and would raise concerns about programs with either the school or the town, leading to better monitoring and timelier problem resolution.

The illustrations described above demonstrate a school focus on developing supportive systems within the school, district and community to engage students and enhance their learning opportunities. These schools demonstrated some evidence of providing **student-centered education systems that empower and support parents, teachers, administrators, and other community members to encourage and guide learners through their educational journey.**

Conclusions

The five high schools described above have many distinguishing characteristics. They exhibit many of the characteristics found in earlier studies of higher performing schools. Equally important, these five high schools exhibit many aspects of the 2010 Nellie Mae Education Foundation's (NMEF) key characteristics of student-centered schools. As may be seen in the chart below, we found many connections between the NMEF principles and the distinguishing characteristics of the More Efficient high schools we studied.

Nellie Mae Education Foundation: Student-Centered Principles	More Efficient Schools: Student-Centered Characteristics
Equal Access – Systems provide all students equal access to necessary 21st century skills.	Equity – High standards and high expectations for all students and adults in the school community.
College & Career Readiness – Systems provide access to skills & knowledge needed for college and career readiness.	Multiple Pathways – Strong vocational, academic and Advanced Placement course options.
Research – Systems align with current research on learning process and motivation.	Professional Learning – Significant professional development surrounding instruction and data analysis.
Mastery – Systems focus on mastery of skills and knowledge.	Intellectual Work – Students and adults engage consistently in elements of intellectual work: understand, transform and share.
Positive Culture – Systems build students' identities through positive culture, strong relationships and high expectations.	Moral Obligation – Educators and leaders demonstrate the moral obligation to learners' intellectual (academic & behavioral) development.
Community – Systems include school community and community at large in students' educational journey.	Collaboration – Schools effectively coordinate communication and collaboration between school-families and school-community.

It is clear that the More Efficient high schools we studied are having considerable success in helping students master core academic subject knowledge, and helping students to develop intellectually; to be able to understand, transform, and share their learning. All students have access to a variety of learning opportunities, and a wide variety of learning

experiences were available to students throughout the school day, including remediation and enrichment. There is ample evidence of high expectations and high standards and the use of multiple assessments in assessing progress in learning. In addition, teachers and leaders are actively engaged in creating a school culture that helps students acquire more and more responsibility for their own learning. They strive to provide all students equal access to learning, create multiple opportunities for acquiring knowledge and skills, and provide a culture supportive of all learners and their intellectual development. Thus, based on the body of evidence that was collected and analyzed for this study, we have concluded that these five high schools are good examples of what might be called *emerging student-centered schools.*

Why do we only call these high schools "emerging" student-centered schools? Because while there is ample evidence that the schools exhibit the 2010 NMEF key characteristics of student-centered schools, they fall short of exhibiting two key attributes of these types of schools; maximum flexibility in the use of time and learning opportunities, and progression based on mastery of knowledge and skills. True, the focus is on learning, students have wider ranges of learning experiences than in the past, and many of these experiences are more "authentic." Some students had opportunities for more field-based activities, peer learning and internships. As well, student progress in these high schools is more often judged in terms of competencies and standards than in other high schools.

But learning in these high schools is also most often confined to the traditional school day and year, and progress is still very much governed by traditional course structures and grade-level configurations. Standards are used very often to guide curriculum, instruction, and to measure student progress, but only within existing grade level structures and courses. Students are still advancing through the grades at the same pace as students in other schools and consequently are advancing grade to grade with varying levels of proficiency. Learning, in large measure, still takes place within the confines of the school walls, on traditional pacing patterns, and by school-based educators and professionals.

Becoming more student-centered will require additional reforms. As Halpern (2102) writes in a recent report prepared for NMEF:

> *Clearly, we face an urgent need to open up the learning landscape in America. Specifically, we need to move away from a standardized vision of learning during the high school years and overcome the tendency to view academic and applied learning in "either-or" terms. To do so, we need to create a richer fabric of learning opportunities for a diverse population of youth. The "we" in this reform extends beyond traditional academic resources. A much broader segment of society needs to collaborate to find the domains and means to engage our young people in meaningful learning. Only then can we provide growth experiences that focus our young people's passion and energy.*
>
> *Today most learning settings and experiences are decentralized – and thereby are spread throughout the culture, across sectors and settings – making them hard to see and imagine as a coherent enterprise. They also remain largely invisible to public policy. Elevating these learning*

experiences so they become an explicit option for middle adolescence will require a concerted effort. Specifically, we need to place individual clusters of experience in a broader societal framework and make them cohesive, organized, accessible and integral to our societal life.

Becoming more student-centered will also require structural and institutional changes. According to Halpern:

> *Some of the reform needs to address the basic assumptions and structures of high school so that the avenues for infusing the attributes of good learning experiences into high school policies and practices are clear and concrete. Adult institutions need to be equally thoughtful and innovative. Across settings and over time, adult institutions need to be responsible for creating a kind of scaffolding for growth – making room for individually appropriate pathways, assuring a complementary, graduated, but intentionally connected mixture of learning, exploring, producing and assessment experiences.*

> *These tasks will require collaboration, mutual learning and mutual recognition across a broad spectrum of sectors that rarely work together in American society.*

> *Deliberate efforts will be needed to build trust, from institution to institution, sector to sector. Also, efforts will be needed to forge working partnerships around particular sets and types of leaning experiences.*

> *Stakeholders will have to develop mechanisms for formally recognizing and validating non-school learning experiences; they will have to expand and alter existing certification frameworks; and develop at least some overlapping metrics for considering proficiency and growth.*

The More Efficient schools we studied are staffed by teachers, leaders, and others who fundamentally believe they have a moral obligation to help all children develop intellectually and be prepared for the 21st Century. Becoming more transformative and student-centered would seem to be a natural next step in the evolution of these schools, but as Halpern correctly states, fundamental shifts in learning environments are needed, as well as fundamental changes in mindsets.

The educators, parents, and community members in the five high schools examined in this study, as well as similar groups in other communities, will need to be convinced that becoming more student-centered will improve their ability to ensure the further intellectual development of their students, resulting in more and deeper levels of learning. And once convinced, educators, parents and community members alike will need substantial support to further transform their schools.

Final Thoughts

We have found that these five More Efficient high schools have created a pervasive culture within the school community that produces important results: students and professionals steeped deeply in intellectual work and development. And we have found that these schools are good examples of emerging student-centered schools. They are worthy of being emulated. There are concrete practices, habits of mind, and strategies to be found in these More Efficient schools that other schools can begin to implement and evaluate immediately. It is hard work, and it will be steady work. Thinking deeply and innovatively requires time, practice and support. Intellectual work requires us to challenge some fundamental aspects of our beliefs and practices. It requires us to transform our schools and to expand our definition of a learning community. This also holds true even for the More Efficient schools. Their work is not done. They need greater transformation before they are truly student-centered schools preparing all students for the 21st Century.

References

Bloom, B. (1956).Taxonomy of educational objectives, the classification of educational goals: Handbook I: Cognitive Domain. New York: McKay.

Boser, U. (2011) Return on educational investment: A district-by-district evaluation of U. S. educational productivity. Washington, D.C.: Center for American Progress.

Buffum, A, Mattos, M. & Weber, C. (2009). *Pyramid response to intervention.* Bloomingtion, IN: Solution Tree.

Burkhardt, G., et al. (2003). *enGauge 21st century skills: Literacy in the digital age.* Los Angeles: North Central Regional Education Laboratory and the Metiri Group.

Dewey, J. (1933). *How we think. A restatement of the relation of reflective thinking to the educative process* (Revised edn.). Boston: D. C. Heath.

Donnelly, R. & Fitzmaurice, M. (2005). Designing modules for learning. In: *Emerging Issues in the Practice of University Learning and Teaching,* O'Neill, G et al. Dublin : AISHE.

Friedman, T. & Mandelbaum, M. (2011). *That used to be us: How America fell behind in the world it invented and how we can come back.* New York: Farrar, Straus and Giroux.

Halpern, R. (2012). It takes a whole society. Quincy, MA: Nellie Mae Education Foundation.

Hoy, W.K., Sweetland, S.R. & Smith, P.A. (2002). Toward an Organizational Model of Achievement in High Schools: The Significance of Collective Efficacy. *Educational Administration Quarterly, 38*(1), 77-93.

Lightfoot, S.L. (1983). *The good high school: Portraits of character and culture.* New York: Basic Books, Inc.

Marzano, R., & Kendall, J. (2000). The new taxonomy of educational objectives, Bloomington, IN: Marzano Research Laboratory.

National Research Council. (2000). How people learn. Washington, DC: The National Academies Press.

Nellie Mae Education Foundation. (2011, December). *Vision, Mission and History.* Retrieved from <http://www.nmefdn.org>.

Newmann, F.M. and Associates. (1996). *Authentic achievement: Restructuring schools for intellectual quality.* San Francisco: Jossey-Bass.

Papert, S. (2002). Hard fun. *Bangor Daily News.*

Partnership for 21st Century Skills. (2008). *21st century skills, education & competitiveness: A resource and policy guide.* Partnership for 21st Century Skills.

Patrick, S. & Sturgis, C. (2011). *Cracking the code: Synchronizing policy and practice for performance-based learning.* Vienna, VA: International Association for K-12 Online Learning, 8.

Perkins, D. (1992). Smart schools: From training memories to educating minds. New York: The Free Press.

Pink, D.H. (2005). *A whole new mind: Why right-brainers will rule the future.* New York: Riverhead Books of The Penguin Group.

Rogers, R.W. (1983). Cognitive and physiological processes in fear appeals and attitude change: A revised theory of protection motivation. In J. Cacioppo & R. Petty (Eds.), *Social Psychophysiology.* New York: Guilford Press.

Schwab, J. J. (1961). Education and the structure of the disciplines. In Westbury, I. & Wilkof, N. J. (Eds.). (1978). *Science, Curriculum and Liberal Education: Selected Essays of Joseph J. Schwab.* Chicago: University of Chicago Press, 229-272.

Silvernail, D. L. (2007). *The identification of higher and lower performing Maine schools: School profiles and characteristics.* Gorham, ME: University of Southern Maine, Center for Education Policy, Applied Research, and Evaluation

Silvernail, D; Stump, E; Barnes, R; Kunin, K. & Wintle, S. (2012). *More Efficient public schools in Maine: Learning communities building the foundation of intellectual work.* Gorham, ME: University of Southern Maine, Center for Education Policy, Applied Research, and Evaluation.

Simon, B. (1999). Why no pedagogy in England? In J. Leach and B. Moors (Eds.). *Learners and Pedagogy.* London: Sage Publications.

Snow, C. P. (1958). *The Search.* New York: Charles Scribner's Sons.

Wagner, T. (2008). *The global achievement gap: Why even our best schools don't teach the new survival skills our children need--and what we can do about it.* New York: Basic Books, Inc.

Zakaria, F. (2011). *The post-American world: release 2.0.* New York: W. W. Norton and Company, Inc., 13