Pathways

A weekly collection of information, thoughts, reflections, and accolades for the ***Reading Public School Community***

February 5, 2017 **Volume 8, Number 22**

Upcoming Dates

- February 5 - (2:00 p.m.) RMHS Drama presents "Twelve Dancing Princesses in the Endslow PAC
- February 6 – (7:00 p.m.) School Committee Meeting in the Superintendent's Conference Room
- February 8 – (afterschool) Secondary Building Meetings – Collaborative Proposal Meetings
- February 9 – (afterschool) RISE/Elementary Building Meetings – grade Level; (7:00 p.m.) RMHS Junior Parent Guidance Night in the Endslow PAC
- February 15 – Grade 6 – 12 Early Release (1:15 p.m.) RISE/Elementary District PLC Meetings; (1:30 p.m.) Secondary District PLC Meetings; (7:00 p.m.) SEPAC Meeting in the Superintendent's Conference Room
- February 20 – President's Day – No school/Offices Closed
- February 21 – 24 – Winter Break – No School for Students/Offices Open

FY18 Budget Update

School Committee, Finance Committee, and Board of Selectmen Meet This Week

This week, the Reading School Committee, Board of Selectmen, and Finance Committee will be holding regular meetings to discuss different aspects of the FY18 Budget. On Monday evening, February 6th, beginning at 7:00 p.m. in the Reading Public Schools Administration Offices, the Reading School Committee will be discussing the FY18 budget and options to pursue additional funding which could include an override. On Tuesday, February 7th, the Board of Selectmen are scheduled to have a discussion about FY18 budget and Financial Status at approximately 8:30 p.m. at Town Hall. On Wednesday, February 8th at 7:30 p.m., the Finance Committee will be meeting at Town Hall to discuss using additional free cash for FY18 budget. All of these meetings are public meetings.

Together for Tewksbury Planning Meeting

Birch Meadow teacher, Jolene Tewksbury, passed away unexpectedly in July. To celebrate the life and work of Mrs. Tewksbury, we have planned a Together for Tewksbury walk and community event on Saturday, April 29th with proceeds going to the Jolene Tewksbury Scholarship. The Jump Rope challenge in the late winter will raise funds for this scholarship as well.

On Thursday, February 16th, there is a meeting to plan Together for Tewksbury and get community input. This meeting will be at 6:30 p.m in the school library. This is a rescheduled meeting from January 19th; that meeting was rescheduled due to a conflict with a School Committee meeting.

We will need many hands to plan and orchestrate this event. Please come on February 16th if you are able to donate your time and gifts in honor of Mrs. Tewksbury.

How Is Primary Care in Medicine Like Classroom Teaching?

In this *New Yorker* article, physician/writer Atul Gawande says he decided to go into surgery because he believed that as a surgeon, he would heroically make more of a difference to people's lives than as a general practitioner. But he's now seen convincing evidence that primary care "has the greatest overall impact, including lower mortality and better health, not to mention lower medical costs."

How is this possible? To find out, Gawande visited a medical clinic in the

FY18 Budget Links

- Superintendent's Recommended Budget
- January 9th Presentation
- January 12th Presentation
- January 19th Presentation
- Full FY18 Budget Presentation (January 9-25)
- Q and A Document for FY18 budget

Boston neighborhood of Jamaica Plain and observed the staff (doctors, physician assistants, a nurse, a pharmacist, a nutritionist, and three social workers) as they ministered to the aches and pains and concerns of a steady stream of patients. Gawande realized that the secret to the impact of seemingly mundane primary care was a combination of expertise, thoughtful diagnosis and observation, incremental improvement, and above all long-term relationships in which the clinic staff came to know the details of each person's medical history and patients came to know and trust the staff and show up if something was bothering them.

"Observing the care," says Gawande, "I began to grasp how the commitment to seeing people over time leads primary-care clinicians to take an approach to problem-solving that is very different from that of doctors, like me, who provide mainly episodic care." The clinic staff are "incrementalists," he says. "They focus on the course of a person's health over time – even through a life. All understanding is provisional and subject to continual adjustment… Success, therefore, is not about the episodic, momentary victories, though they do play a role. It is about the longer view of incremental steps that produce sustained progress. That, such clinicians argue, is what making a difference really looks like. In fact, it is what making a difference looks like in a range of endeavors."

Gawande goes on to describe another situation involving incremental versus heroic intervention. In December 1967, a critical link in the chain-suspension system of the Silver Bridge over the Ohio River snapped with a loud bang. In less than a minute, most of the 2,235-foot span supporting 75 vehicles fell into the river 80 feet below, killing 46 people and injuring dozens more. An investigation by the National Transportation Safety Board revealed that corrosion on the 1928 bridge, combined with the fact that it was designed to handle Model T traffic, was responsible for the collapse. Up to that point, occasional disasters like this had been regarded as random and unavoidable. Now people realized they could be prevented by periodic inspections and repairs – and that applied to all 600,000 bridges around the country.

But despite what was learned from the Silver Bridge disaster, not nearly enough resources were put into inspection and repair in the years that followed. As a result, there are still almost 150,000 problem bridges in the U.S., and several collapse every year, sometimes causing loss of life. "Based on the lack of public response, structural engineers have judged this to be 'in the tolerable range,'" says Gawande. More funds go to rescue operations and to building new bridges, and "It's obvious why," he says. "Construction produces immediate and visible success; maintenance doesn't. Does anyone reward politicians for a bridge that doesn't crumble?" The same situation exists with dams, levees, roads, sewers, and water systems – and not just in the U.S.: "Governments everywhere tend to drastically undervalue incrementalism and overvalue heroism."

Incrementalists "want us to take a longer view," says Gawande. "They want us to believe that they can recognize problems before they happen, and that, with steady, iterative effort over years, they can reduce, delay, or eliminate them. Yet incrementalists also want us to accept that they will never be able to fully anticipate

Kudos and Accolades

- Congratulations to the gymnastics, girls & boys basketball, boys track, swimming, mock trial, boys and girls hockey for recent victory.
- Kudos to the RMHS Drama Club on an outstanding production of Twelve Dancing Princesses

or prevent all problems. This makes for a hard sell. The incrementalists' contribution is more cryptic than the rescuers', and yet also more ambitious. They are claiming, in essence, to be able to predict and shape the future. They want us to put our money on it."

Around the time of the Silver Bridge collapse, the medical profession had little to offer patients in the way of prevention. Illness was seen as a random catastrophe and doctors focused mainly on rescue and insurance for unanticipated, episodic needs. Money was poured into heroics and incrementalists were scanted. But by the late 1960s, scientists were discovering the long-term significance of high blood pressure, diabetes, and other conditions and figuring out treatments that could save lives. "Seemingly random events were becoming open to prediction and alteration," says Gawande. "There is a lot about the future that remains unpredictable. Nonetheless, the patterns are becoming more susceptible to empiricism – to a science of surveillance, analysis, and iterative correction. The incrementalists are overtaking the rescuers. But the transformation has itself been incremental. So we're only just starting to notice." The big salaries still go to surgeons and the like, while primary-care physicians and others in less-glamorous areas of medicine make half as much.

Gawande says four kinds of information are important to a person's health and well-being over time: [Think about parallels in schools.]

- Your internal systems – from imaging and lab tests;
- Your living conditions – housing, community, economic, and environmental data;
- The state of the care you receive – what practitioners have done and how well they did it, what medications and other treatments they have provided;
- Your behaviors – patterns of sleep, exercise, stress, eating, sexual activity, and adherence to treatments.

The potential of this information is enormous, especially now that we can monitor some of it through wearable devices and smartphones. But the potential will be unlocked only if we commit the resources to primary care. "As an American surgeon," says Gawande, "I have a battalion of people and millions of dollars of equipment on hand when I arrive in my operating room. Incrementalists are lucky if they can hire a nurse."

One of the biggest causes of early death is hypertension, which can result in a stroke, heart attack, dementia, and other serious problems. Thirty percent of Americans have high blood pressure and only half are adequately treated. "Good treatment for hypertension is like bridge repair," says Gawande: "It requires active monitoring and incremental fixes and adjustments over time but averts costly disasters. All the same, we routinely skimp on follow-through… More than a quarter of Americans and Europeans who die before the age of seventy-five would not have died so soon if they'd received appropriate medical care for their conditions, most of which were chronic."

Superintendent's Office Hours this Week
All are welcome

2/7 (6:00-7:00 p.m.)- Reading Public Schools Administrative Offices

2/9 (7:45 – 8:45 a.m.)- Joshua Eaton Elementary School

2/11 (9:00-10:00 a.m.)- Reading Public Schools Administration Offices

"In this era of advancing information," Gawande concludes, "it will become evident that, for everyone, life is a preexisting condition waiting to happen… But this is also an opportunity. We have the chance to transform the course of our lives. Doing so will mean discovering the heroism of the incremental."

"Tell Me Where It Hurts" by Atul Gawande in *The New Yorker*, January 23, 2017, http://bit.ly/2jXaWRy. Reprinted from Marshall Memo 671.

Crafting a Vision for Empowered Learning and Teaching: Beyond the $1,000 Pencil

By Alan November for November Learning

High-speed networks, digital devices, and creative applications are revolutionizing education. Students can be empowered to take their learning to deeper and deeper levels while developing essential skills that will prepare them for success in the 21st century.

For example, our once-isolated classrooms now can connect students to authentic audiences around the world, leading to a deeper understanding of global issues. Powerful yet easy-to-use software tools can empower educators and students alike to create top-quality digital tutorials to contribute and build much more support for all learners. Our students now have access to primary source materials that would have been beyond the imagination (and limited education budgets) without high-speed networks. We can now support our special education students and have them collaborate where they were once isolated. Virtual reality tools allow us to explore objects where a human being could never physically visit, such as the sun or the center of a nucleus. We have technologies that can make abstract concepts accessible and exciting.

Without question, there is a "wow factor" across all disciplines and grade levels. Every day brings the potential for new opportunity to expand and deepen the boundaries of learning. However, adding technology to our campuses does not automatically contribute to improved learning. There is the problem of what we could label, "the $1,000 pencil – applying new tools to do old work." Research shows that unless we redefine the work we will not be tapping the full power of our emerging technologies. While we must support our educators to learn new tools, the truly creative challenge is to redesign the work and the roles of the learner and educator to tap the potential of our new technologies.

We need leaders who understand how to manage the opportunities of this historic transition. While it is not uncommon to find amazing pioneering educators on any one campus, it is more difficult to find whole campuses that have scaled the innovative practice across their entire faculty. Leadership will make the difference to the rate and distribution of these powerful innovations.

As exciting as these changes are, it is only normal that transformative change will bring some level of resistance from both faculty and students who are used to a traditional design of teaching and learning. One of the most important leadership skills moving forward is to help colleagues manage this shift.

Transforming our education system is not so much an intellectual/intelligence problem as it is an emotional one. For example, many of these emerging technologies represent a shift of control from the educator to the learner. It is not unusual for very gifted educators to feel a sense of professional loss when a new tool, such as the knowledge engine WolframAlpha,

Quote of the Week . . .

When you focus on problems, you'll have more problems. When you focus on possibilities, you'll have more opportunities.

-Unknown

allows students to correct their own homework in math, physics, and chemistry and even explore the design of more difficult problems than assigned.

From a management perspective, it is much easier simply to add technology to do exactly what has been done before—the same curriculum, same assessments, same schedule, same assignments—than to fundamentally redesign the work and the culture of learning. While there are benefits to automating certain aspects of teaching and learning, we will need leaders who can create professional cultures of innovation where faculty members feel supported in fundamentally redesigning the work to make it more rigorous, creative, and motivating.

We are in a period of constant innovation that will take decades to absorb. What we need to do is correctly define the opportunity, craft a powerful vision, and develop implementation strategies that scale the improvement in increased quality.

Defining the Opportunity

In defining the problem that technology brings to learning, there are two broad decision trees for leaders:

- What are we currently doing within our curriculum that we could be doing better by using technology?
- What have we never done before that technology uniquely enables to enhance teaching and learning?

The first decision tree does not require changes to what is learned, but it might change *how* you approach learning. An example would be the difference between how my two children learned in college. My son, Dan, was able to receive much more support because he could watch lecture videos over and over again, and because he had a social network of fellow students to lean on—and these supports allowed him to learn the same material much more effectively. My daughter didn't receive the same support, only graduating a few years earlier.

The second decision tree involves redesigning learning to take advantage of design concepts our world of paper could not provide. For example, in Bergen, Norway middle schools, students have a much deeper sense of global empathy. The Norwegian teacher is a pioneer in connecting students to journalists, police, prisoners, and native people around the world. Teacher and students fully appreciate that there is no way that a textbook or teacher designed videos could ever come close to providing the level of depth of critical thinking enabled by global communication. As is too often the norm, this classroom also happens to be the only one in the school where students can gain a sense of developing the critical skill of developing a line of reasoning based on authentic conversations. Scaling this successful innovation is the job of the leader.

Both decision trees can lead to improved learning. Since adding technology to existing work is fairly straightforward, this article will focus on the definition of transformation. The questions that leaders should ask themselves include:

1. Are we adding unique value to what we are doing as a school or district when using technology?
2. How can we ensure these changes are scaled throughout the organization?

Crafting A New Vision: 'Transformational Six'

To support leaders to craft a new vision of teaching and learning, I have put together a framework of six key questions that education leaders can use to assess whether technology

Disney Tweet of the Week

I'll be there someday. I can go the distance. I will find my way if I can be strong.

–Hercules

has brought transformative value to instruction. If you can answer "yes" to any of these six questions, then you're on the right track:

- Did the assignment build capacity for critical thinking on the web?
- Did the assignment develop new lines of inquiry?
- Are there opportunities for students to make their thinking visible?
- Are there opportunities to broaden the perspective of the conversation with authentic audiences from around the world?
- Is there an opportunity for students to create a contribution (purposeful work)?
- Do students own their learning?

Did the assignment build capacity for critical thinking on the web?

Before the Internet, our students accessed sources for learning that had been preselected by a teacher or a librarian. Clearly, the Internet has removed any pretense of control of information. Now that students are choosing sources that have often never been professionally reviewed, it is absolutely vital that we prepare students to make thoughtful decisions about how to select high-quality sources.

We must recognize that with fundamental change there can be unintended consequences. Perhaps our weakest response to the web replacing our libraries as the "go to" source of information for our students, is their lack of preparation to understand how to verify the value of their search results. For example, if you have ever watched a student do research online, you probably noticed that they entered the exact title of their homework assignment as their search query—and then they only looked at the first page of results. Critical thinking and careful evaluation of the reliability of sources can be sorely lacking. Too many of our students believe they know how to use Google effectively. When was the last time any student asked a teacher for help in designing a search? Perhaps more importantly, when was the last time a teacher offered to help? If our students fail at step one—selecting the right information—then they will automatically fail at critical analysis.

We cannot abrogate our responsibility to prepare our students to be critical thinkers in the Internet Age. We need to teach our students how search engines work and how to design a powerful (and effective) query.

Here's an example: Suppose the assignment is to write an analysis of the Iranian Hostage Crisis. Here are two very different search designs in Google:

"Iranian Hostage Crisis"

site:ac.ir "conquest of the American spy den"

It would be normal for students to type the name of the assignment "Iranian hostage crisis" into Google. This will yield only search results with Western sources if the search is done anywhere in North America. If you ask students to review their results and ask them what is missing, many will not know how to answer this question. They cannot imagine that what is missing from the first page of search results are Iranian sources.

If you challenge students to refine their search strategy to find Iranian sources, most will simply add "Iranian sources" on the back end of their original search. This still will not yield any Iranian sources. But it's possible to use the advanced search page to select Iran as the source of your content. Or, you can use the Google operator "site" to switch your search to Iranian sources with the two-letter Iranian country code "ir" (site:ir). If you further want to

Important Websites

RPS District Website
www.reading.k12.ma.us

Interface Health Services
https://interface.williamjames.edu/community/reading

improve the quality of your Iranian sources you could type: site:ac.ir + "conquest of the American spy den" into the search bar. Now you will find sources that are limited to Iranian universities that deal with what the Iranians called that historic event. This last search query will have no overlap with the original search yielding only Western sources. You will be learning about the Iranian point of view. This can lead to a fascinating set of comparison questions.

It should be the responsibility of all teachers to teach the research skills that lead to high-quality comparative searches. In this case, the teacher could have required two sources from Iran. There should have been a review of country codes and the use of the advanced search techniques to generate results from Iran. Finally, the teacher should have spent some time in class challenging the students to think about their search terms—such as by asking: "What did the Iranians call the takeover of the American embassy?" We need leaders who recognize that it is no longer sufficient to teach students how to read books and articles. We must prepare students to be web literate across the curriculum.

Did the assignment develop new lines of inquiry?

With access to massive amounts of information, including primary sources and different points of view from around the world, comes an opportunity to teach students to ask questions we could never ask in the limited world of paper.

Continuing with the example about Iran, if students discovered Iranian points of view about the hostage crisis, they could develop whole new lines of inquiry that would broaden their perspective of these events. For instance: Why did the Iranians refer to the takeover as the "Conquest of the American Spy Den?" Did the goals of the student-initiated revolution against the Shah align with the goals of the religious leaders who became the leaders of the new government?

In an interview I had with Stephan Wolfram, a chief designer of the computational knowledge engine WolframAlpha, he explains that most of the answers to traditional assignments are available online if you know how to find them. What isn't on the web are the *questions*. One of the most important skills we can teach our students is how to ask creative, innovative, and even impossible questions. "The new answers are the creative questions," Wolfram says.

Are there opportunities to provide our educators with new insights into how their students are thinking?

We now have powerful new tools that can help reveal what students are thinking in ways we couldn't do before without technology. For instance, tools such as Prism and Verso, can give teachers insight into what students were thinking as they read or watched an assignment.

These tools also help with self-assessment, which research shows to be one of the most important skills that can improve student achievement. And when students know what their peers were thinking about an assignment, they are more comfortable sharing their ideas in class—which can lead to richer discussions.

Are there opportunities to broaden the perspective of the conversation with authentic audiences from around the world?

As mentioned in the Norwegian example, not only are students gaining valuable perspectives that have served to deepen their learning and help them develop new lines of inquiry, but students can also learn critical global communication skills that will prepare them for future success in anything they do—and they are typically fully engaged in their learning. As one student commented, "I will remember these conversations for the rest of my life."

Is there an opportunity for students to create a contribution (purposeful work)?

This might be the most difficult quality to build into assignments, but it's no less important. Many teachers I talk to worry about the decline of student focus, but we can immediately address this decline by adding a meaningful purpose to student work. As author Dan Pink notes in his book *Drive*, research shows that purpose is a key motivating factor.

A colleague in Istanbul has her geometry students designing the geometry curriculum for blind students by visiting a local center for the blind and working with the students to understand how to build tactile activities to understand the subject. When her students finished their project, they published it to the web for global access. They know they are potentially making a difference in the lives of 1,000's of blind children worldwide.

When I interviewed these students in their classroom in Istanbul, many shared with me that they chose to extend their required 40 hours of design work to more than 200 hours. Some students even continue their work the year after their course ended. Their commitment to their work does not depend on an external reward such as grades, but an intrinsic drive based on making a contribution. It will become increasingly essential to give our students access to a global publishing platform to help build more capacity for student driven purpose.

Are students being challenged to take more responsibility to own their learning?

Harvard physics professor Eric Mazur knows how difficult this is from his own experience. He also knows just how incredibly rewarding it can be for students.

Dr. Mazur has figured out there are seven problems that require the knowledge he used to lecture about in his Introduction to Physics course. But instead of giving those lectures, he now gives his students these seven problems to solve in teams. He gives them the necessary background information, along with other resources, and then he inspires them to solve these seven problems on their own. They now do much better on the course's final exam, because they understand at a very deep level *how* to apply what they have learned. He had to let go of what he once absolutely loved about teaching – giving a brilliant lecture.

Next Steps

Harnessing the power of high-speed networks and other technologies to transform teaching and learning will require that leaders recognize the opportunities of both automating existing practices and creating new opportunities for learning that we could never do before. As knowledge becomes more available online, we are moving to a new reality where the added value of an educator will be measured less by their ability to transfer their knowledge and more by their ability to inspire students to continuously expand their own boundaries of learning.

As we teach students the lifelong skills of validating content, connecting globally, and applying their knowledge to add value to the world, educators will become more important than ever. The essential leadership skill will be to help manage this transition to redefine the work of both educator and student. It is an amazing time to be in education!

Join Us...

On Tuesday, February 7th to help raise money for RMHS Interact Club!

20% of tracked dine-in and carry out sales will be donated.

Tell your server you are dining to support ***RMHS Interact Club!***

ANTHONY'S COAL FIRED PIZZA
PIZZA WELL DONE

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48 Walkers Brook Dr. | (781) 944-8454
WWW.ACFP.COM

Reading Public Schools Happenings

RMHS Hockey Coach Mark Doherty Celebrates 100th Win

Congratulations to RMHS Hockey Coach Mark Doherty on his 100th win as the coach of the RMHS Boys Hockey Team. Mark coached his 100th win vs. Wilmington, which Reading won 1-0.

Contact Us

The Pathways newsletter is published weekly for the Reading Public School Community. If you have anything that you would like to share, please email your info to John Doherty at: *john.doherty@reading.k12.ma.us*

Stepping Stones…

- We welcome the following new staff to the Reading Public Schools:
  - ✓ Robert Parkin, JV Boys Lacrosse Coach, RMHS
- **We have posted** a new position. If interested, please visit https://reading.tedk12.com/hire/index.aspx to view the job detail

Before School Teacher, Barrows Elementary School
https://reading.tedk12.com/hire/ViewJob.aspx?JobID=229

Long Term Substitute Biology/Anatomy Teacher, Reading Memorial High School
https://reading.tedk12.com/hire/ViewJob.aspx?JobID=230

Blazing Trails…

"The Roots of Learning." Forget technology-if you want to see examples of anytime learning or classrooms without walls, look toward our youngest learners. Immersed in play and observations of their environment, young children embody the notion of learning that is always on, with the world as its resource. This ASCD Express issue looks to early learners as our best teachers and asks questions like: How can learning through play nurture budding philosophers? What sets great early learning environments apart from the rest? How can I invite students to explore and experiment in everyday learning? Read More

"To Encourage Creativity in Kids, Ask Them: 'What if'?" New York Times Matt Richtel shares some thoughts about one of our oft-discussed goals for our students -- fostering creativity. The post offers some interesting ideas and encourages us to 'open up' and provide more opportunities for students to develop the traits through the prompt of 'What if...' - the implications are interesting and pertinent for all of our disciplines. Where does creativity come from? Are there tricks they can use to be more creative, or, for that matter, that parents and educators can instill? Scholars who study creativity say that stoking it involves helping children strike a balance between two dichotomous tools: the whimsy and freedom of a wandering mind, with the rigidity of a prepared one. Read More

"This New Year, Resolve to Develop a Growth Mindset and Build an Instructional Identity." In this NASSP post by Massachusetts Middle School Principal of the Year Justin Cameron he looks at what goes into resolutions. Most of us make them. Personal resolutions and professional resolutions are too often prey to self-fulfilling prophecy resulting from a mindset that the resolution will be broken. Carol Dweck and Angela Duckworth, architects of growth mindset and grit, can help shift that thinking. Their extensive work is worth exploring. Read More

"ASCD: Finland Exemplifies Whole-Child Education." Finland, with its focus on equity and emphasis on health, well-being and social-emotional education, is a leading example of whole-child education, asserts Sean Slade, senior director of global outreach for ASCD. Slade -- and others -- consider takeaways from what's working in Finnish schools. Read More

Have a Great Week!