

January 21, 2013

RE: Transformational Technology Proposal

Dr. Richardson:

For the last 12 months, the Northfield Public Schools has engaged a variety of stakeholders in discussions envisioning a future that includes tablet computers for students; transitioning from a resource set that relies on paper-based tools such as handouts and textbooks, to a modernized, more flexible resource set that relies heavily on digital tools provided to students and delivered via a tablet computer.

This discussion has included:

- A tablet computer working group that included 35 District staff members, primarily teachers, from across the District. This group met four times during January and February 2012 and made a recommendation to aggressively pursue a tablet computer initiative for the District.
- A total of 12 presentations to the School Board regarding the transformational technology initiative, beginning at the February 27, 2012 Board meeting where the 2013-15 technology plan was presented.
- A total of five public meetings, three in the Spring of 2012 and two so far in January 2013. Four of these meetings included a thorough presentation, followed by small group interactions designed to elicit a great degree of conversation. So far, one meeting was designed as a more traditional question and answer public meeting format. Two additional meetings in the latter format are scheduled to review this proposal and are scheduled for February 2 and February 4.
- A total of 12 presentations, one at each school in the Spring of 2012 and one at each school in January 2013 to provide in-person updates to staff.
- A total of 25 posts on the topic since March 26, 2012 through the project blog. A total of 1,620 “page views” of this blog have been recorded as of January 21, 2013.
- At least 37 articles or stories have been published that include a reference to our transformational technology discussion in local news outlets (KYMN, Northfield News, Northfield Patch) since March 14, 2012.
- Four task forces that included at least 25 staff or Board members that researched and made initial recommendations on App and Content Selection, Policy and Procedures, Professional Development, and Communication.
- Student focus groups at Northfield Middle School and Northfield High School.

Our proposal has been formed based on input from key stakeholders, including the aforementioned task forces, a faculty survey, discussion with our District Technology Steering Committee, and discussion with the Superintendent's Cabinet.

Why is tablet technology transformational?

We believe that tablet technology has the ability to help our students' learning in a number of ways:

- The power to inform learners with continuous access to the World Wide Web. This provides the ability to connect with information from around the globe, engaging student curiosity and inquiry.
- The power to differentiate content for learners through the use of applications that can provide an appropriate level of content for each learner. For example, students in a Grade 3 classroom could be working at several different levels in developing automaticity of math facts, challenging each student at a level commensurate with his or her ability.
- The power to engage learners through rich multimedia content. A textbook can come alive by students tapping photos that launch video content or interactive modules, allowing students to see "what happens when..."
- The power to allow students to capture notes in multiple methods – through keyboarded text, handwritten in digital ink, or audio recording. Students can insert diagrams, photos, or web clips into their notes. The notes become searchable using the application's database features.
- The ability to empower students to use apps that can promote higher order thinking skills. Digital video, podcasting, and simulation apps can encourage critical and creative thinking – two skills required to be successful in the 21st century knowledge economy.
- The ability to reduce the weight of students' backpacks. While this sounds simple, we have heard this as a major concern of a number of parents.

Proposal by the Numbers

This proposal requests the Board of Education consider authorizing the lease of 2,700 student devices for a three-year period beginning with the 2013-14 school year. The lease would include:

- A 1:1 initiative using the iPad 2 at Northfield Middle School, Northfield High School, and the Northfield Area Learning Center. Each student would be assigned an iPad 2 for school use. The District would encourage students to take the devices home with them. A plan to include three percent more devices than students will allow for a "rapid response" strategy to ensure students have access to a working device if their iPad becomes inoperable. The District would initiate an annual \$25 per student insurance fee (\$20 for those eligible for reduced lunch, \$15 for those eligible for free lunch) with a family cap of \$100 per year.
- A "pod based" approach of approximately 140-162 iPad Mini devices each at Bridgewater, Greenvale Park, and Sibley Elementary schools. This approach would provide four-to-six devices per classroom based on one device per 3.5 students. No student insurance fee would exist at the elementary schools since devices will not be brought home.
- Budget for \$12 of apps per device at the District level. These apps would be focused on content creation and not be subject-specific. Subject-specific apps may be purchased by classroom teachers through their own classroom budgets, by application through the District curriculum budget, or by application through their building level budget.

- Funding for an average of three digital textbooks for secondary students at \$14.99 per book per year. Digital textbooks will not immediately replace traditional, paper-based textbooks. This allocation will allow us to address the move to digital resources in an orderly and planned fashion.
- Funding for a mobile device management system (\$4 per student per year) that will allow the District to monitor and manage the iPads from a central location. It will also allow the District to manage the privileges students have to use the device. This could be used to allow certain groups (such as High School students) to have a greater amount of flexibility to manage their own device and install their own apps. A student who misuses the device could be restricted to school-based apps for a period of time. It would also allow the District to apply our web content filtering standards anywhere the student has the device, not just within the school walls.
- Funding for a learning management system (\$8 per student) that will allow teachers to post digital content, facilitate online discussions, assess their students using a variety of tools, as well as collect homework and other documents using an online submission folder.
- Funding for a \$60 case per device. The District has not selected a targeted case yet as new options are routinely coming forward. We believe that \$60 will allow for the purchase of a sturdy case that will protect the devices.
- Our total anticipated annual cost, combining the lease and other costs, is projected to be no more than \$550,000 per year for the next three years, inclusive of an approximate 8% contingency. The case and the iPad are included as part of the lease. Other costs, such as the cost of apps, textbooks, the mobile device management system, and the content management system are not part of the lease but will be budgeted for on an annual basis as part of the \$550,000 budgeted amount.

Insurance

The District is proposing a self-insurance plan that would charge an annual fee for students who take the device home with them. The proposed fee would be \$25 (\$20 for students eligible for reduced lunch, \$15 for students eligible for free lunch.) We propose a cap of \$100 per family. By current numbers in Grades 5-11 (next year's 6th-12th graders), this fee would generate \$49,785. This could completely replace 199 devices each year @ \$249 each, or roughly 9% of the annual inventory.

At the elementary level, we propose to budget for repairs in a similar manner. However, there will not be a student fee since the iPads would remain in the classroom. The projected repair budget at the elementary level will be \$11,525 per year. This would allow for the replacement of 52 devices, or roughly 11% of the inventory.

In setting up an agreement with Apple, broken devices would be returned via mail and a replacement device shipped to the District.

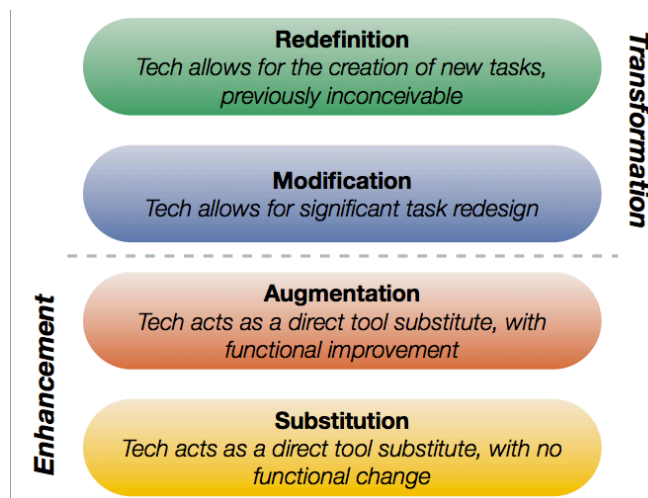
Infrastructure

The District performed major infrastructure upgrades to its wireless network during the summer and fall of 2012. These upgrades included the installation of a Xirrus wireless network system at Northfield High School and Northfield Middle School. This is designed not only for coverage of the buildings, but also for the high density of students accessing the wireless networks. The elementary schools have widespread coverage using a series of Cisco wireless hubs. Some minor adjustments will be made to bolster those networks in the summer of 2013.

Professional Development

The District has offered more than 50 professional development sessions so far this year. Continued professional development will be a critical component of the implementation. Professional development plans will include:

- Continued before and after school training sessions at the building level throughout the remainder of the 2012-13 school year.
- A modification of the Tech Boot Camp approach we have used for the past several years. Instead of a week-long midsummer inservice, the District will move to having technology training available every Tuesday during the summer. This will allow staff to attend the same session multiple times, if necessary, as well as not be overwhelmed after several days of training in a row.
- Utilizing what we have learned from our cognitive coaching training to help teachers think differently about their teaching methodology and how to successfully integrate the iPad into their classrooms.
- Using the SAMR Model, developed by Dr. Ruben Puentedura, as a ladder for integrating the devices into our teaching. Transformation cannot take place in a single year. Focusing our professional development on each of the stages of technology transformation over a four year period seems to be a reasonable expectation and a logical method of planning. The SAMR model includes:



Credit: <http://ceomichele.blogspot.com/2012/09/samrtpck-and-first-200000-years.html>

- The District would plan a four-year implementation of the SAMR model. While professional development would be provided for each of the levels above each year, the majority would be focused on the substitution in 2013-14, augmentation in 2014-15, modification in 2015-16, and redefinition in 2016-17. Teaching staff would be expected to demonstrate proficiency in those levels by the end of each target year. You can learn more about the SAMR model through two videos:

- <http://youtu.be/JaS6FMBbGrk>
- <https://www.youtube.com/watch?v=aFmQDakVplE>

Envisioning the “rollout”

If the proposal is approved, District staff will immediately begin preparing for implementation. Our vision for students at the secondary level receiving their devices includes:

- Hosting several sessions in August where parents/guardians and students would be required to attend in order to pick up their device. Fees would be collected, iPads distributed, and training provided for both the student and their parent/guardian. Review of District policies governing the use of the device will also be presented.
- Parents/guardians who cannot attend one of the sessions will be accommodated to the best of the District’s ability on a case-by-case basis.

Reviewing the success of the initiative

The District cannot promise an increase in student achievement as measured through standardized tests with any single initiative. While we believe there can be an impact on student scores, especially at the elementary levels when partnering technology with other strategies such as Response to Intervention, there is not a definitive amount of research that leads us to guarantee this. At the same time, we believe a carefully crafted set of surveys, designed to gauge various components of the initiative, can be informative. The surveys would address things like student engagement and motivation, learning opportunities focused on developing higher order thinking skills, and expanding learning beyond the school day. The surveys will be administered to students, staff, and parents/guardians four times per year and can provide a significant amount of data to inform all stakeholders of our progress towards transforming learning. In addition, a series of case study reports that highlight actual examples of student and teacher experience will be shared. We believe this strategy can characterize successes and share the matter-of-fact hurdles in the process.

Concerns

With any project of this significance, there are concerns that have been shared by the public. Concerns about this kind of project are normal and we have many concerns as well. Listed below are a number of items expressed by people who have attended our public meetings as well as emails we have received or other concerns shared with the District that have not been addressed as part of the proposal above:

- *Overwhelming: so many options available.* The District recognizes this concern and it drove our four-year implementation model using the SAMR approach. This will allow us to have a realistic phased implementation that supports all teaching staff.
- *Access to wireless networks and the Internet off campus.* We believe a large majority of students will have the ability to access the Internet off campus. However, we are realistic that there are many students who may not have this access. Alerting families to reduced cost Internet options from local service providers as well as helping students understand their community resources, such as the public library, will be of great importance.
- *The world is moving so fast. Do we need to slow it down for students?* While the world is certainly moving fast for all of us, students will be entering a world where they need to know how to adapt to the pace of life. An example provided during one of our community meetings included that “When I drive, I get to my destination quickly, but I notice very few details. If I bicycle, I arrive slower than I did in the car, but I see more details. If I walk, I arrive even more slowly, but I can take in numerous details.” This was followed by the observation that technology could make that walk

even more effective – one community member stated that an iPad equipped with a field guide would allow for even greater understanding of detail, providing the opportunity to research plants or other items along the way that the person isn't familiar with at the time. This was an interesting description of the intersection between technology and the pace at which we live.

- *Distractions.* It is a concern that electronic devices can potentially further distract students, especially those who have attention disorders. There are simple classroom strategies, such as having students flip their devices over with the screen facing down in order to remove distractions when the technology isn't being used. Students will also be living and working in a world filled with these distractions. Electronic distractions will exist with or without a school issued iPad. Intentionally teaching how to self-monitor will be an important life skill.
- *Responsibility.* A fair question is “will students show responsibility with these devices.” Individuals express rightful concern about responsibility in a number of ways. Will students use the device responsibly? Will students take care of the device and protect it from damage? We believe that students will take care of the devices. Our belief is that students take good care of their own personal electronic devices such as iPods, cell phones, etc. Students will misuse the devices from time to time, just like they push boundaries in other areas during adolescence. We believe that many misuses of electronic devices have a non-electronic counterpart. The District's Student Citizenship Handbook has equipped teachers and administrators with the tools necessary to help students learn from their behavior and assign appropriate consequences. As adults, we often think that eliminating privileges to using a device is a logical consequence. In most cases, this is true. However; if the device is intended to serve as a student's textbook, notebook, and other academically necessary items; it becomes more difficult to completely remove that privilege. Restricting access to certain apps or privileges will be more appropriate in allowing students to continue to use the device for their academics while still holding those who misused the device accountable. Appropriate consequence for students, such as detention, restitution, or other consequences commensurate with the guidelines of the Student Citizenship Handbook will also be used to work with those who choose to misuse their device.
- *Change.* Several questions have arisen that are part of the age-old issue associated with change. While there will be changes in the way that students participate in their school experience, we believe it will be transitional for the next few years (see SAMR model plan above.) There will be things that are not done as they were before. Enacting change is a core component of this proposal. It is intended to challenge the way that we have engaged students in the past and try to prepare them for the 21st century economy.

Summary

The District has worked over the last year to discuss the best ways that modern technology can support teaching and learning in ways that could not be done without it. Our belief is that this planful approach, using a fair market value lease strategy, that does not lock the District into one vendor for the long-term is a responsible strategy. A comprehensive plan for professional development for teachers and a reasonable set of instructional expectations will significantly move Northfield Public Schools toward modernizing our educational system and preparing our students for their future in the 21st century economy.

Respectfully submitted,

Matt Hillmann, Director of Administrative Services