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Technology in Our Schools

It's a given that 21st century schools need to embrace technology to stay relevant. But what does that look like? What are the benefits, drawbacks, and challenges? What about financial and facility considerations? Should social media play a part in education?

In this paper I will explore some answers to these questions for schools in general and specifically for the Peshtigo School District. I will discuss my interest in the topic, the Wisconsin Department of Instruction technology plan, and technology use by administration as well as teachers and students. I will explore options for providing students with devices, and how technology is shaping the look of our facilities.

This subject interests me for a number of reasons. First, as a parent, I want my children's education to be culturally relevant. They need to be skilled in technology so that upon graduation they are ready for college and/or the workforce. Second, I am an online student and therefore use technology a great deal in my education now and plan to in my career. I am familiar with some of the benefits and disadvantages and can use my experience in preparing my children for the future as well as in my role as a school board member.

As a member of the local school board, I help cast vision for our local schools, address challenges, and oversee financial resources. In building relationships with community businesses and determining the needs in the local work force, our board toured several

Peshtigo companies. I was surprised by the consistent presence of technology—laborers today, whether at the paper mill or making machine parts, need computer skills in today's market. In addition, I've attended several conferences and read education publications addressing technology in our schools and volunteered to be a member of the District Technology Committee.

Much of the vision for technology in schools comes from the top. The Wisconsin Department of Instruction (DPI) has developed Digital Learning in Wisconsin, a plan for technology in Wisconsin schools (available at a Google Site rather than on the DPI server, demonstrating the organization's use of current technology). The vision set forth in this document utilizes technology in all aspects of education, from the office to the classroom (*Vision*).

Information management, data assessment, and preparing state and federally mandated reports are all responsibilities of school administration. The Wisconsin Department of Instruction is purchasing software that makes compliance with its multiple report demands much easier. It is estimated that Wisconsin school districts combined spend over \$30 million annually to provide data to DPI, so any attempt to make this easier will relieve our financially-challenged districts ("Statewide").

Another project underway is a Student Information System, whereby all student records will be electronic ("Statewide"). Therefore, if Junior's family moves from Peshtigo to Menomonie, we can email his student file and his new school/teacher will have it immediately.

In Peshtigo, student information is managed through the software program Skyward. With this program, parents and students have access to data through the school website. I

can check my children's grades and email teachers. The transition to 100% teacher participation in Skyward has not been without bumps. Some teachers were hesitant, not trusting the software—they entered the data in the program, but also kept a paper record “just in case.” Another roadblock—resistant teachers, whose grading systems were perhaps a bit more subjective than the inflexible calculations of this grading program. Now that the system has been in place for several years, teachers are comfortable and parents—particularly self-proclaimed helicopter parents—appreciate the ability to stay current with their children's progress. More teachers are also using email to communicate with parents. This is much more efficient than my foraging for flyers stuffed into backpacks.

As for technology in the classroom, the benefits are exciting. Technology engages students and stimulates their minds. It provides the drill and practice students need to master concepts while at the same time motivating students to continue learning. It makes abstract concepts visible and can break through language barriers. The internet provides unlimited and instant information—students can do research, participate in studies and wikis, and learn by themselves. Technology enables individualization; students can go at their own pace and pursue in-depth topics that interest them. It allows students to share their work and ideas. Technology can also create a more positive social climate (“Educational”). Who wouldn't want this?

There are other considerations, however. Analysts point out that some countries with students who score better on tests than the United States do not use technology in the classroom and yet have great outcomes (“Technology”). Also, a project involving technology may be exciting but offer little in content learning. Keeping up with technology is also expensive—buying and replace regular and special needs, equipment, hiring tech

staff, training. Finding material to integrate into lessons can be time-consuming and frustrating to teachers. Technology decreases personal interaction between students and teacher and student to student. Finally, it can be distracting (“Educational”).

I believe the pros outweigh the cons and that most of the negatives can be overcome—but it will take vision, administrative support, and teacher training.

One of the challenges we face in the Peshtigo School District is the lack of technology leadership. There is no vision, no long-range technology plan—the Technology Committee meets once a year and merely allocates dollars to the teachers who ask. Therefore, there is a hodgepodge of technology uses, even at the same grade level.

Another downfall of the lack of leadership is that resources are not used wisely. Sure, laptops for every student sounds great—but with no plan for incorporating them into the curriculum, bandwidth limitations, not staying current with updates, and unreliability they are a waste of money and teacher time.

A successful technology plan needs administrative support. Teachers need training to use technology effectively, and this can be difficult to achieve. Budgets are often too tight to hire trainers and teacher time without students is limited. Administration must also be willing to hire technology staff to be a teacher resource for lesson and curriculum ideas as well as give educators the comfort they need in knowing that someone will be available to help them.

The ultimate success of technology in the classroom depends on the teacher. Without trained teachers, we are more likely to face the downside of technology in our classrooms: frustration, pointless projects, and waste of time and resources. Without trained teachers

we will also not benefit from the pros: student engagement, individualization, collaboration.

We cannot put technology in the classroom as a novelty or merely an add-on to the curriculum. For example, at a regional school board function we were presented with videos that elementary students in a low-income school district created. These films outlined safety rules for their school. Granted, use of technology ramped up student excitement for a relatively dull topic. However, I was appalled by the many spelling and grammar errors on display. Yes, the process engaged the students, but that should not be the ultimate goal. Curriculum, especially now with Common Core Standards, needs to remain the focus.

Tara LaChapell, a fifth-grade science teacher in the Peshtigo School District who has a degree in computer science, offered her insights regarding the novelty of SMART Boards that are becoming popular in District classrooms. “I want to use technology for something that I couldn’t do another way,” she says. In her opinion, SMART Boards are relatively small, limiting, and filled with frustrating glitches. “I was fine without it—the kids were engaged by the learning games we played with just a projector and a dry erase board.”

One of the most exciting technologies in Tara’s class is the SMART Response interactive response system (my own fifth-grade twins told me about this, never even mentioning the Smart Board). Students respond to multiple-choice questions on the screen and enter their answers with a remote, called a clicker. Not only is this fun for students, especially the competitive ones, it’s a powerful assessment tool for educators. Through short clicker quizzes, Tara can immediately evaluate student comprehension and determine

whether to reteach the subject to the entire class or work with an individual. “It’s so much more effective than asking the students, ‘Does everyone understand this?’”

Tara is a leader of technology in the Peshtigo School District and works with other fifth-grade teachers, all of whom are willing to embrace it and be innovative. “Using technology and being excited about it is a great way to get buy-in from the staff,” she says. “They see what you’re doing, they see value in it, and they want to get on board. They know technology is not going away.” Indeed, it’s more effective to empower teachers than coerce reluctant ones.

The role of teachers is changing, as well. The Wisconsin Digital Learning plan encourages teachers to become “facilitators and guides for learning.” In the “flipped” classroom, student homework can be viewing teacher-produced presentations, such as in PowerPoint. Students then use classroom time to work on “what used to be homework.”

This flipped classroom model changes the role of teachers from “sage on the stage” to “guide on the side.” Instead of lecturing at students, teachers are guiding their students’ education and are available to answer questions that students encounter as they work through problems and projects...Teachers can give instant feedback to students, and students are less likely to get frustrated with school work if a teacher is there to help them understand difficult concepts (Anderson 6).

It remains to be seen if this movement toward teachers as facilitators is just a phase in the cycle of education philosophy or if it is indeed the way of the future. We already see this model at the college level, especially with distant learners. Most of my professors have guided my study through readings and projects rather than through lectures. And UW-

Stout also provides the means to do so, at least in part. They provide the laptop, but I still need to supply internet access. What about students in our schools who do not have access at home?

Which leads to this discussion: Should schools provide technology for all students? Should they be able to take their devices home? What does access for all look like in our classrooms? Some schools are implementing BYOD (Bring Your Own Device), whereby students use their own devices—laptops, iPads, iPods, smart phones—under teacher direction. This saves the districts money and allows students to take their technology home with them. However, there is the issue of the haves and have-nots. What about those students in families who can't afford devices for each child (like me, as a single mother with five children)? Or can't view lectures or do assignments because they don't have internet access at home? With smart phones, there is also lack of teacher control and filtering capability. "It's scary," says Tara. "There will always be one or two kids who push the limits, but should that mean everyone should be restricted? We have to evaluate risk vs. reward."

A risk-versus-reward evaluation should influence a school district's investment in technology. How should a district decide what to purchase? Should it anticipate trends and be a pioneer, or watch and wait to see what others are doing? How do the decision-makers know if the latest and greatest is the best choice in the long run?

I asked Tara her opinion. She has followed the evolution of technology and looks for trends that affect learning and assessment. For example, first there were textbooks online, which really only presented the same material in a different way and therefore did not seriously affect learning and assessment. Now, however, with iPads and iBooks textbooks

can be interactive. She sees great potential in this for both students and educators. (And I see great potential in this as a career path!)

If each student had a device, what would our facilities look like? An advisory committee is exploring our options in Peshtigo, where we have inadequate facilities, and will recommend expansion or a new Middle/High School. Catherine Cruickshank, Senior Project Designer at Hoffman and member of the builder project team, has to anticipate the future in designing education facilities:

The teachers at Peshtigo were clamoring for more computer labs, but I think that, by the time the school project is completed (thinking positively), there is a high probability that students will have their own devices. This is something we need to discuss further so, if we do incorporate several computer labs, they can easily be converted to some other use. I would assume every classroom would have an interactive whiteboard and, of course, there would be WiFi throughout the building.

At the recent WASDA [Wisconsin Association of School District Administrators] Conference, I attended several sessions on technology. After one session, I asked the Principal what modifications they had to make at his school when each student got a laptop. He said they use the same desks and the only change they made is that the teacher is now at the back of the room where he/she can see the students' screens. Since the students are looking at their screens, they don't need to see the teacher's face – just have to hear the voice. On the other hand, Valley New School, located in the Avenue Mall in downtown Appleton, is set up exactly like a modern office. Each pair of

students shares a T-shaped workstation which gives each a writing surface on the short arms of the “T” and a shared workspace. They also share a desktop computer...These are changing times and there are lots of different approaches.

We haven't even begun the discussion of social media and its place in schools! Or the use of Google Docs in the classroom, the cloud, funding, special education. I could go on. As a parent, student, and school board member, I am excited about the possibilities technology brings to our schools and the opportunity to help cast a vision for the Peshtigo School District.

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