

In May 2011, a tornado swept through Joplin, Missouri, USA, devastating a community and destroying several of its schools.

Find out how this Sylvia Chorp 2012 Honorable Mention award-winning district used the crisis as an opportunity to implement the personalized learning program of its dreams.

By Traci House

AFTER THE

STARTING OVER WITH ONE TO ONE

The costliest tornado in U.S. history descended without warning on the small community of Joplin, Missouri, USA, on May 22, 2011. People across the country watched the devastation on TV and YouTube. But the thousands of students and staff of Joplin School District lived through it.

Although I lived outside the path of destruction, thousands of others were not so fortunate. Joplin Schools lost seven students and one staff member to the tornado. It also destroyed five schools and left several others heavily damaged (see surveillance footage captured at East Middle School during the tornado at www.youtube.com/watch?v=64covicCcIY). Three thousand students lived in the path of the storm, and 4,200 ended up without a school to attend.

STORM

Recognizing the need to restore normalcy throughout the community, Superintendent C.J. Huff steadfastly committed to opening Joplin's schools by the originally scheduled 2011–12 school year start date of August 17. It was a difficult feat by any means. But what makes this story truly remarkable is that, even with such an incredibly short turnaround and long list of challenges, Joplin Schools did not simply rebuild in the image of its former self. Instead, we seized the opportunity to become even better by implementing a one-to-one initiative, complete with a new all-digital curriculum.

Visioning Before and After

Joplin Schools was already known as a state leader among tech-savvy districts, with a focus on gains in student engagement and academic achievement. Before the tornado, we had a 2:1

Joplin Schools did not simply rebuild in the image of its former self. Instead, we seized the opportunity to become even better by implementing a one-to-one initiative, complete with a new all-digital curriculum.

student-to-computer ratio districtwide and had created a 21st Century Vision team that included school staff, board members, university representatives, students, parents, and members of the business community. This team had visited many districts around the United States to gather information about forward-thinking philosophies and digital age practices, taking detailed notes about the measure of successes and disappointments these schools had experienced.

One of the places we visited before the tornado was a one-to-one school, where our high school leaders, administrators, and school board members saw in action

the way things can change in this type of learning environment.

Three weeks after the tornado, we recognized the need to fast-forward our plan. We held another visioning meeting that included students, staff, parents, and community members. We also met with representatives from Mid-Continent Research for Education and Learning (McRel), International Center for Leadership in Education (ICLE), Leadership & Learning, and we video conferenced with such industry leaders as Apple, HP, Dell, and Intel while working out of temporary housing facilities with limited power and internet capability.

Everyone helped us put together a powerful plan. We made more site visits to schools across the nation that were implementing innovative programs. We visited schools that closely followed third-party curricula,

such as the New Tech Network model (www.newtechnetwork.org), as well as schools that used other approaches, such as career academies and design thinking.

Even though time was short, we felt the insight we gained on these visits was invaluable. We cherry-picked the components that we felt would align best with the picture we were trying to develop for Joplin.

In addition to going one to one, we decided to adopt career pathways in the design and construction of our new high school and technology career center. Students can earn a certification or associate's degree while attending high school and continuing to pursue extracurricular passions, such as music, art, and athletics.

We decided to begin the one-to-one initiative in the high school by the start of the 2011–12 school year—a mere 55 days away. Stage 2, which we anticipate beginning in 2013, will expand the initiative to grades 6–8. We then plan to take the program districtwide within two years after finishing the middle school implementation.

Infrastructure, Tools, and Curriculum

Before we could do anything else, we had to get the district's network infrastructure back in working order. The tornado had crushed fiber optics throughout the city of Joplin, so we had to rebuild. Our fiber provider worked diligently day and night to restore districtwide internet functionality.

Our window was small to select the device that would best fit our one-to-one initiative. We studied iPads and other tablets as well as various laptop models. Though all the devices had positive features, we ultimately decided on MacBooks. Joplin teachers have used these machines for a number of

We no longer use textbooks—even digital ones—but instead rely on online resources, such as Khan Academy and other flipped-classroom sites, WebQuests, Google Docs, Common Core crosswalks, and content-specific digital sources.

years, and, because we wanted this learning initiative to be about the pedagogy and not the device, we recognized that device familiarity would be important.

Because the tornado destroyed all textbooks for grades 9–12, and because all the high school students would have access to 24/7 learning tools as part of our one-to-one initiative, we decided it was also time to implement personalized learning with an open source digital curriculum.

We developed a curriculum that revolved around unique and personalized learning for each student. We have increased collaboration, project-based learning, and constructivist pedagogy practices exponentially. We no longer use textbooks—even digital ones—but instead rely on online resources, such as Khan Academy and other flipped-classroom sites, WebQuests, Google Docs, Common Core crosswalks, and content-specific digital sources.

Just as our curriculum is personalized, so are the tools. There was no single resource that became the champion for all teachers. Rather, each teacher chose from a large array of tools that they had found in their own research or that their 21st century learning coaches suggested, including Blackboard, Edmodo, Skype, Weebly, Socrative, Khan Academy, blogs, and wikis. Of course, these digital tools alone don't equate to successful technology integration. We focused instead on how teachers used them with students to encourage critical thinking, creativity, and communication.

Professional Development

Fortunately, in 2004 we implemented the Technology Leadership Academy (TLA), a program that requires every

teacher to complete 60 hours of professional development to get a laptop, interactive whiteboard, and projector in the classroom. We have used dedicated professional development (PD) funding for TLA over the years since then and are currently using local funds designated for teacher work beyond contract time.

The district has also implemented eMints, a PD model for embedding high-impact technology in the classroom. eMints trainings are rigorous and focus on high-quality teaching in a constructivist environment that integrates technology and digital age skills. With these two programs, our teachers complete 100–200 hours of professional development over a two-year period. As part of the Instructional Technology Educating Kids (iTEK) program we initiated in 2006, all teachers also had at least 30 hours of PD in technology integration.

Because of the commitment the district has made to moving toward next practices, teachers have been involved in additional PD in the use of technology through personal learning communities (PLCs), department- and building-level meetings, the eMINTS program, summer technology workshops, and Eagles Thinking, Educating, Communicating (eTEC), another PD program that provides teachers with hardware and more than 100 hours of training to support a constructivist teaching practice. Thanks to these programs, all teachers could already effectively use their own district-issued laptops and interactive whiteboards in their classrooms prior to the decision to implement the one-to-one program at the high school, so they were able to focus their PD on moving to our new open source digital curriculum.

We realized that we would need even more high-impact professional development for teachers if we were to be successful with our new personalized learning innovation by the start of school. Department leaders reached out to multiple resources for guidance and assistance, and everyone we contacted showed great compassion, as they were well aware of the limited timeline we were working with. Countless conference calls, video conferences, and onsite visits involved experts not only from the K–12 pedagogy environment but from the global market community as well. We also included parents, students, teachers, administrators, board members, and business owners in all visioning meetings. The feedback from the students had the most impact, as their perspectives really opened the minds of those at the table and in the meetings. Once everyone involved had assimilated the best-practices information from research, we were able to apply those to our bigger dreams by focusing on next practices.

Coaches and Assessment

Our teachers also receive support from technology coaches who make classroom visits to contribute constructive feedback and model lessons. (For more information about technology coaches, see the NETS for Coaches at iste.org/standards/nets-for-coaches.)

The district had previously employed nine technology specialists and nine teaching and learning coaches. The Joplin School Board, sensitive to the broad scope of change and challenge that we were trying to implement after the tornado, approved hiring five 21st century learning coaches as well to help guide our teachers as we moved toward making our next-practices vision a reality.

All teachers are involved in regular, meaningful, and ongoing support and PD with their coaches. The coaches:

- Hold monthly trainings with cohorts of 25 teachers to teach new tools and uses of these tools
- Visit each teacher individually every month in the classroom
- Assist with PLC trainings
- Provide monthly quick tech tips during planning periods
- Collaborate with teachers during monthly work time that the principals have provided to develop the new curriculum with new resources

The technology coaches and specialists also work closely with administrators and teachers to assess the effective use of technology in the educational process. The district's curriculum director, technology director, and technology integration coordinator work together to ensure educators are knowledgeable about their content standards and have ready access to valuable curriculum resources when

implementing next practices in the classroom.

We also continually assess the appropriate use of technology and how we integrate it into the classroom environment using Instructional Practices Inventory (IPI), a quick walk-through method that focuses on the engagement level of and among the students and provides a quick snapshot of a student's school day. It provides data that facilitates deep conversations among staff about instructional practices and high engagement opportunities for students.

We also use Performance Based Teacher Education (PBTE), which gives teachers a rubric that they work through with their mentors to reach transformational levels of instructional technology. They observe other master teachers and are observed themselves by their mentors before they reflect on the success of a lesson.

Joplin High School Today

Joplin High School has now completed its first year of school with its new personalized learning implementation. This experience forced us to let go of doing things the same way just because it's how things have always been done. We think differently about reaching all students (e.g., not assuming that everyone has to go on to a four-year college to be successful in society. This meant we had to stop trying to take new ideas and fit them into our traditional box, but rather had to reshape our box to fit the new ideas and personalize them for each student. This could mean that not all students are inside the school building from 8 a.m. to 3 p.m. It could also mean that some students never have to sit through Algebra I but instead show their proficiency in some other way. Learning is tailored to fit the interests and passions of each student, so they can schedule their days in

Welcome New

ISTE Corporate Members

JP-Inspiring Knowledge

JP-Inspiring Knowledge (JP-IK) is a Portuguese company dedicated to designing, developing, and distributing technological solutions using Intel Classmate-based platforms. JP-IK operates in more than 70 countries. Among their products aimed at students is Pupil 104—a notebook, tablet, and e-reader all-in-one.
mymagalhaes.com

Toon Boom Animation Inc.

Toon Boom Animation Inc. is the worldwide leader in digital content and animation creation software. Toon Boom is dedicated to education and goes far beyond developing technology and curriculums that will enhance the classroom experience.
Toonboom.com

iste.org/correlations



such a way that they are all engaged in applying their learning to their chosen career path.

Just as we wanted input from our teachers when developing the PD for the digital curriculum, the teachers felt that they needed input from their students. Requesting flexibility and a curriculum design that continues to grow and evolve made sense. This feeling of empowerment and ownership, among students and teachers, has contributed greatly to our success.

In that spirit, Joplin High School history teacher Dustin Dixon has found great success in the flipped classroom environment this year. He began with evening pretest tutoring sessions via Skype. More than 30 students now log in for tutoring, compared to the one or two students who would show up in person at early-morning sessions. He has now increased his evening Skype sessions to include lectures and make-up work.

“They were willing to ask questions I don’t think they were so willing to ask in front of their peers. They might be embarrassed because they didn’t know the answer to something,” Dixon explains. “I am also able to work with them on make-up work, and there is a whole bunch of flexibility through that line of communication that wouldn’t exist through the setting of a normal classroom.”

As with any major transformation in educational philosophies, we were cognizant of the fact that academic achievement would take a dip before the district recognized any gains. State testing results indicate that we did experience a drop in academic test scores, but data for discipline and attendance shows improvements compared to the previous school year. Discipline has decreased 13%, which points toward increased student engagement, and attendance has improved by just under 1%. This is especially relevant when considering that disaster experts warned us of an increase in discipline and behavior issues as a result of the tornado devastation.

Additional assessments continue. Every quarter (every nine weeks), department personnel conduct common formative assessments, which they present to the school’s PLCs. We scrutinize the data to determine weaknesses and strengths in the educational process, resulting in decisions concerning re-teaching particular focus areas or necessary shifts. For example, teachers are using recorded video and Skype to assist students in areas where they need help or are falling behind. We also use these PLC collaborative assessment meetings to implement necessary revisions of the common formative assessments as they are relevant to curriculum changes.

There is probably no better way to sum up this past school year at Joplin High School than to end with this quote from graduating senior Taylor Camden:

I admit that after May 22, 2011, I thought my senior year had been ruined. When I first heard that I would be spending my long-awaited senior year at the mall, I was disappointed. I thought of all the things I would be missing out on and all the things I wouldn’t be able to experience. No more senior bench. No more senior meetings in the auditorium. No more senior section at pep rallies. No chance to take a senior class photo in the rose garden. No more Joplin High School. I thought of all the hardships I’d have to face while learning how to adapt to such a new learning environment.

But for me, it was better. Instead, I was given a laptop and brand-new school supplies on the first day of school. I got to learn in an environment where the information was at my fingertips.

We could’ve crumbled as a school district the way the walls of Joplin High School did on May 22. But instead, we spread our wings like true eagles and soared above all the rubble that weighed heavy on our spirits. We’ve grown and shaped into a district that’s even better than the one we had before. It has truly been a senior year that I will never forget. I couldn’t be more proud to be a Joplin High School Class of 2012 graduate.

Acknowledgments

The author would like to thank Angie Besendorfer, assistant superintendent; Terri Hart, director of curriculum, assessment, and instruction; and Klista Lawyer-Reynolds, technology integration coordinator, for their contributions to this article.



Traci House is director of technology for Joplin Schools in Missouri, USA. She has worked for the district for 18 years in various roles, including technology specialist and director of data analysis. She has also served as a K-16 education specialist for IBM.

College of Education

SCHOOL TECHNOLOGY LEADERSHIP

Join the only academic center in the U.S. dedicated to the technology needs of school administrators!

Obtain a Masters or PhD in school tech leadership, all online, with in-state tuition regardless of location.



<http://schooltechleadership.org>