



Saving Time with Technology

Infusing technology thoughtfully into instruction can free up time for meaningful learning.

Kristine Gullen and Holly Zimmerman

A teenager recently got us wondering about how teachers might use technology to free up more classroom hours for learning activities that deepen thinking.

Kristine was driving her nephew Alex home from school and noticed him sulking, arms folded across his chest. “Look at this social studies worksheet the teacher just gave us—30 questions, due tomorrow,” he lamented.

“Do you have your cell phone?” Kristine asked. “Why don’t you see how many answers you can find in our 10-minute ride home?” Her nephew took out his phone and put his thumbs to work; like most high schoolers, he’s an expert at surfing the Internet. By looking up dates, places, people, and events, he found the answers to all but three of the questions before he reached home.

The remaining questions required students to do three things: synthesize multiple perspectives or events and connect them to students’ own experiences; read, reflect on, and critique narratives with differing viewpoints; and analyze data connected to a survey the class had designed and

launched. When Kristine asked her nephew what differences he saw between the questions he could find answers to online and those he couldn’t, his reply was revealing:

Most of the questions [deal with facts] I just need to remember. These three questions are thinkers . . . ones I can discuss and argue about. If these three are the important questions, why do we spend 90 percent of our time with facts that I can easily get online, when my teacher could have us do more questions like these?

Good question.

One Good Question Deserves Another

At every teaching-related workshop we’ve been to lately, teachers and school leaders ask us another good question: “Given the time available and the curriculum we must teach, how do we

achieve the level of rigorous learning the Common Core standards expect?”

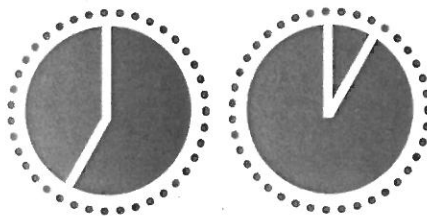
Implementing the standards will mean clear shifts in instructional practice, away from rote activities that involve seeking, writing, and memorizing factual content and toward those that require higher levels of cognitive demand. Kristine’s nephew questioned the ratio of time his teacher spent teaching facts compared with the time she spent teaching how to synthesize and create something using those facts. Let’s ask ourselves: Are we so rushed that we use the majority of class time and assignments to simply cover material?

Students need to acquire facts, of course. If we want them to think deeply, summarize, and analyze information, they’ll need content knowledge to think about. Yet we’ll never meet the demands of the new standards without dedicating a good portion of our instructional practice to activities that lead to deeper knowledge. Using technology is one way to leverage time, restructure learning activities, and provide opportunities for rigorous instruction.

Although technology-infused lessons can be used to explore complex information, one of the most compelling reasons for integrating technology is that it helps students acquire factual content in less time.

As we’ve found out in daily life, digital tools are amazing, fun, and engaging. Most of us have used a tablet computer or cell phone to quickly find directions, to communicate, or to collaborate. We can integrate technology into classrooms for these same purposes. But we’ve seen educators respond to technology tools with a range of attitudes. Some are eager and experienced, others are curious but reluctant, and a few are resistant. Even though many educators we’ve spoken with use apps to make to-do lists, coordinate family

Teachers infuse technology into the classroom most successfully when they find new ways to enhance current practices.



calendars, or play games, some believe that technology is an invasion in their classrooms.

Perhaps some teachers have trouble envisioning digital products in action in classrooms. Let’s look at three examples of how teachers we know enhance learning time by employing technology efficiently.

Probing What They Know

A social studies teacher we’ll call Judy begins each class period with a three-question formative assessment using the website Socrative.com. Students electronically, and sometimes anonymously, send Judy their answers through cell phones, laptops, or tablets—whatever they have available. Judy can access responses immediately in a spreadsheet that gives her quick access to whole-group and individual progress. She uses this information to shape her instruction.

For instance, students might answer three factual-response questions that relate to crucial points in the text to show their knowledge from the pre-

vious night’s reading assignment. If the spreadsheet reveals that students consistently make errors in a particular question, Judy can clarify those misconceptions early in the period. If she sees individual students need more support, she can differentiate instruction.

Each class, Judy can reteach, respond, and provide feedback to individual students depending on what she sees during this warm-up. As an exit ticket, students electronically send Judy a reflection, a request for assistance with some skill, or a report on their mastery of a concept. Before students even leave the room, Judy has feedback that reveals how her instruction is working.

Flipping Class

A colleague of ours “flipped” his geometry class. Every day, Chad videotapes his lessons for the following day using an interactive whiteboard and microphone. Then he posts the videos to YouTube for students to view as homework or during part of class the next day. Although this means spending 45–60 minutes taping lessons after school, it saves Chad from teaching the same lesson four times, and the video becomes a resource for years to come.

Because students have viewed the video at home, Chad can engage with them more during class, giving them individual feedback and coaching then as they work with concepts they’ve just learned. Recently in a typical class after watching a lesson and taking notes at home, students came to class with several practice problems completed. Chad had them read the corresponding section in their textbook—capitalizing on the knowledge they had gained by watching the video. Students spent the bulk of the period working with a partner on more complex problems while Chad visited with each pair to check students’ progress. In the last 10

FIGURE 1. Tech Tools Recommended by Teachers

If you have students do these activities:	Consider using the following tech tools:
Memorize facts	To help you or students create and share online Q&A sets or flashcards, use www.quizlet.com , www.studyboost.com , or www.studyblue.com
Discuss texts or concepts you're working with in class	Let students share comments, feedback, and links in a protected space at www.wallwisher.com , www.todaysmeet.com , or www.voicethread.com
Respond to a selected-response or open-ended question as a formative assessment, often as a warm-up or exit ticket	Have students answer a poll online and anonymously at www.polleverywhere.com or www.socrative.com
Summarize using a word wall or word cloud	Create "word clouds" with any block of text at www.wordle.net or www.tagul.com
Construct concept maps or outlines	Find templates for graphic organizers at www.mind42.com or use Smart Art in Microsoft Word
Design a poster	Have students make online media posters with text, photos, videos, sound files, and more at www.edu.glogster.com
Collaborate while writing or write in a shared journal	Let multiple users enter text in one document simultaneously at http://primarypad.com or http://docs.google.com
Create a video lesson	Have students create and share screencasts and videotaped lessons using www.showme.com or www.educrations.com
Create an online class newsletter	Learn to create and host a class website at www.weebly.com
Read and annotate online texts and share annotations with others	Share online texts—and comments in the margins—with others at www.diigo.com

minutes of class, students completed a quiz, analyzed their own results, and determined their areas of mastery and areas requiring more practice.

Chad says he's less exhausted from taking the extra time videotaping than he was from repeating his lesson four times a day. There's more consistency to his instruction, and he has a stronger awareness of individual student progress. Students can review the lesson multiple times if needed, and absent students can access content they missed before they return to school.

Giving Faster Writing Feedback

Holly has experimented with using technology to free up class time. In her 10th grade English classroom, she uses Google Docs to teach students how to write thesis statements. She used to have students review and correct teacher-scripted statements containing deliberate errors—or improve several actual students' statements written on the board, if a few students were brave enough to volunteer. This practice monopolized classroom time, encouraged passive learning, and limited the amount of individual feedback a student could receive without risk.



Holly now has students copy and paste their thesis statements anonymously into a Google Docs form. She can quickly scan all responses and group them to highlight strengths and learning opportunities. During class, she thinks aloud as she reads, sorts, and edits a few statements electronically right in this form, which is projected on an interactive whiteboard and students' individual laptops. Holly changes some statements around to show students what might happen if they changed the

sequence of ideas or verb tense in their statement.

She then assigns each student an anonymous statement to edit, directing that student to use particular editing skills—creating parallelism, previewing arguments, or supporting claims. Each statement and the students' edits are projected on the interactive whiteboard at the front of the room. In the past, only proficient writers would volunteer their work, which often left struggling students working with examples beyond their skill level.


Instruction becomes focused on students and the examples that students create. Almost every learner receives both individual feedback and practice that hones his or her fundamental thesis-writing skills. Using this strategy, Holly accomplishes more in one class

period than she did in several days using her former methods. Each collection of statements becomes part of a digital lesson archive, which students can refer to each time they need to write another thesis statement.

New Tools for Time-Tested Strategies

Teachers infuse technology into the classroom most successfully when they find new ways to enhance current practices, leveraging technology's ability to help them connect, collaborate, and enrich. Like using an electric screwdriver instead of a manual one, choosing the right tool enhances the most reliable methods. Recently, we asked colleagues to share their favorite tech tools and websites for classroom use. More than 250 responded. Figure 1

on p. 65 shows some of these resources, each matched with a classroom strategy.

Tried-and-true instructional practices might not free up the hours teachers need to get students to meet higher learning goals. We can't find the answer to the question, How do we achieve the level of rigorous learning the Common Core standards expect? by surfing the web on a cell phone. The answer to this "thinker" rests with our willingness to infuse technology into our professional practice. 

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