

Digital Toolbox

NETS Standards

The International Society for Technology in Education (ISTE) has brought forth a set of standards for Students, teachers, Administrators and Coaches for evaluating the skills and knowledge needed to learn, teach, work and live in an increasingly global and digital world. You can find a comprehensive list of the standards on the ISTE website:

<http://www.iste.org/standards>

The core goal of the standards are to help build the digital skills kids (and their teachers) need for school and beyond, and through the “profiles”, ISTE has divided the skills into four age groups, defining what a technology literate student looks like at each of those grade levels. You can see the detailed profiles on their website:

<http://www.iste.org/docs/pdfs/nets-s-2007-student-profiles-en.pdf?sfvrsn=4>

Likewise, teachers have to be able to facilitate student learning and help drive digital age learning experiences and assessments as part of the teaching NETS.

<http://www.iste.org/docs/pdfs/nets-t-standards.pdf?sfvrsn=2>

As librarians, you are the resource people in the school, and are often tasked with helping students and teachers find the resources they need for learning projects at all levels. You will not only need to be familiar with the NETS standards, but know what tools and resources you can suggest to enable teachers to design projects that meet curriculum goals while also building the technology skills the students will need. Your first step will be building your own resources and knowing what digital tools exist, and then assist in their implementation, as appropriate. Remember, while a hammer or a screwdriver might both be capable of helping fasten two pieces of wood together, one may be much more effective for what's required than another.

Finding and Using Tools to Develop Higher Order Thinking Skills

There are tons of web based resources and tools out there, enabling even the youngest students to make impressive looking projects. But when you look at any tool, we need to look past the bells and whistles and think about:

- What's the end goal of the project or assignment? (Backwards Design)
- What's the best way for the student to demonstrate the learning or mastery of the subject matter?
- Is there a way we can use a digital tool to enhance the demonstration of outcomes? Does using a digital tool make the project easier to accomplish, more interesting, engaging, or allow multiple modes of expression?

- Does the tool help differentiate the learning for different learning styles that might be difficult in a pen & paper task?
- Can the tool enhance accountability for the student and teacher? (Nothing gets lost in the cloud.)
- Can we shift some learning of independent tasks from classroom time to at home time? (Flipping the classroom)

New! Shiny! But Useful?

Many of the web apps out there are free or low cost. Many of these companies are also trying to find an audience, and may not have a fully developed business model, so we can never be sure for how long their nifty tools and features will be available for use. This can be extremely frustrating, and can cause many teachers, who have been burned by spending a few hours learning to use one tool, to be a little resistant to trying the next new thing.

Let's walk through an example here:

A middle school english teacher has asked students to choose a book off a list for an independent reading project. There are four groups of students who have read the same book. The teacher wants them to do something more interesting than a typical written book report. What tool(s) would you recommend?

The first question here should really be- why was this project assigned? What is the teacher's end goal? Is this a garden variety book report to prove the kid has read the book and thought about it critically, or is the teacher focused on different types of genres, narratives, character development, vocabulary building, or something else? That will help guide your choice in tool as well.

Is there a tool that does something better or faster than it could be done (if at all) with standard paper & pencil or art projects?

Skype or Google Hangout can allow students to have a video chat with experts, authors, or other students anywhere in the world. Could they send an email and find a time to skype with the author, in or out of class and ask questions? You never know, but it's a possibility. And with Google Hangouts, you could record the chat as a YouTube video and share it with other classes as well. Or perhaps it's a non-fiction book, and talking to an expert in the field might bring some additional insight to the topic of the book.

Using GoodReads, maybe the kids want to leave responses or review of the book online, and respond to each other's questions about the book. Or kids could write a story or response to the book or specific prompts on a classroom blog or wiki. While these examples adhere closer to a standard book report model, they can also allow multiple students to contribute and interact to the same document.

All of these examples also give kids of different abilities choices and roles to play that allow them to meet the requirements of the assignment, while playing to their own strengths, increasing the

likelihood the lesson will meet differentiation goals while encouraging kids to add their own questions or write to the level of their ability.

Does the tool(s) help a student demonstrate something or express mastery in an interesting way?

We've seen plenty of kids do dioramas in lieu of a written book report. But does making a podcast, where kids interview each other, taking on the role of a character in the book, demonstrate a different mastery of the subject matter of the book, perhaps, than making a podcast where they simply read out loud their written work? I'd argue yes.

If you're looking for oral fluency, or trying to get kids to practice microphone skills, or to be reflective of the difference between oral and written speech, a podcast where they read their writing out loud might be fine, but the podcasting element is then just merely bolted on to a traditional project, and doesn't add anything of interest. It may merely add a level of complexity and difficulty, for no real reason, and I'd argue it's not the best use of the tools.

Maybe having each student play the role of a main character and have another student in the group interview them, either as a reporter or entertainment journalist- this would be a great podcast or video. This allows not only an end project that's sharable, but it lets the students demonstrate a deeper understanding of the characters and their motivations.

Or, a single student could even script a dialog this way, and put the script into something like Xtranormal, where the site will create animated characters that will act out the scenario. The animation and video is fun, but it's really just a demonstration of the work already done in written form. This is more of a "Oooh Shiny!" use of a tool, where the real work and thinking has gone into the script itself, which should be the focus of the assessment, more than the tool itself.

When helping teachers design projects to start teaching students about technology, think about choosing a tool that furthers the learning rather than done solely in service of using a digital tool.

Does the tool help develop any 21st Century learning goal- Creativity, Collaboration, Critical Thinking, or Communication?

There are plenty of cool web apps out there- let's take Wordle for example. It can take words, sentences and more and put them in a lovely shape or picture. It can show visually the frequency of words used in a particular passage or essay. But if you use Wordle, you need to think about whether you are using it as a tool to analyze text, an art project, a keyword finder, or something else. All are legitimate uses. However, using for analysis of text or article or even political speech might help build awareness and critical thinking skills, or a way to reflect on word usage, in a way other tools may not, and could lead to a deeper conversation that might otherwise not be considered.

For our book report example, would creating a wordle out of a chapter of the book add anything new to the meaning of the book? Maybe, or maybe not. For the book report project, there's probably other tools, including slideshows, blogs, glogsters, or other tools that might be better suited to reach the end goal or purpose of the project.

Does the tool make things easier or increase accountability?

Tools like Google docs and wikis can track who is contributing to them and when they are accessed, increasing accountability for students working on a group project, for example, as well

as providing an online storage option, making sure no one loses their work or leaves it at home. Other tools like Cel.ly allow teachers to send broadcast text messages, which could make reminding kids (and parents) to bring in permission slips, or reminders of deadlines on big projects a lot easier (or as easy) as sending an email. All of these tools should be simple and easy to use, although some may take some initial set up to run efficiently. But if the tool doesn't save your time or serve a greater purpose, don't use it.

For our book report example, kids could work on a common written project through Google docs or in a wiki. The teacher will be able to monitor what student is contributing to what part of each project, and help keep the project on track at the same time.

Digital reminders and accountability also helps scaffold and teach kids time management skills they will need now and throughout their lives.

Building The Toolbox- Knowing What's Available

When you build your toolbox, start off by being a good aggregator- use social bookmarking sites to help share out your collection of tools, allowing easy access for you and for your community through the web at any time. Try:

- Delicious- most useful if you tag items you save so they can be easily found later
- Pearltrees- a visual and hierarchal "tree" system for social bookmarks, also can be shared "socially" through Twitter and Facebook
- Evernote- Evernote lets you bookmark and create/save information from any device, tablets and phone included. Information is saved to the web, and can be shared out to others as needed, but less "public" than Pearltrees. Along with its Skitch program, you can also take and annotate screen shots, which is a great way to create simple step by step how to's. Fantastic apps for iOS, android and more- and it has the advantage of being cross-platform.

Keep a list of tools and of projects where they've been successfully used (or not). After action reports, where teachers describe what went well and what didn't will be helpful if you decide to try or recommend this tool to another teacher, and will be able to forewarn them of any pitfalls that may have developed on the first time through. As the "tool resource person", (I like to all this creating your own Digital Home Depot) you'll help teachers learn from each other about what's gone well and what they can tweek to make their next project assignment more engaging and meaningful to the students.

List of Digital Tools Presented in Slide Presentation:

- Delicious- social bookmarking <https://delicious.com/>
- Diigo- <http://www.diigo.com/>
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- Pearltrees <http://www.pearltrees.com/> All tools presented are cached in my Pearltree labelled ECU Presentation Toolbox at http://www.pearltrees.com/#/N-s=1_7230682&N-reveal=5&N-fa=3432645&N-u=1_385802&N-p=68912634&N-f=1_7230682
- Pinterest <http://pinterest.com/>
- Google Reader <http://www.google.com/reader/>
- Evernote <http://evernote.com/>
- Skitch <http://evernote.com/skitch/>
- Dropbox <http://db.tt/HXEzgrQ> (this link is a referral link- I will get additional free space if you use it) or simply www.dropbox.com
- The motherlode of Web Apps- Go to Web 2.0 : <http://www.go2web2o.net/>
- Pew Internet & American Life Project: <http://www.pewinternet.org/>
- TED talks: <http://www.ted.com/> also podcasts available through NPR: http://www.npr.org/rss/podcast/podcast_detail.php?siteId=151446218
- Khan Academy <https://www.khanacademy.org/>
- Hippocampus <http://www.hippocampus.org/>
- EDU 2.0 <http://www.edu2o.org/>
- Gooru- search engine for learning <http://www.goorulearning.org/gooru/index.g#!/home>
- LearnZillion: <http://learnzillion.com/teacher/>
- NBC Learn k-12 <http://www.nbclearn.com/k12>
- Prezi - <http://prezi.com/>
- Animoto: <http://animoto.com/>
- Xtranormal: <http://www.xtranormal.com/>
- Tellagami <https://tellagami.com/>
- Jellycam stop motion video <http://www.ticklypictures.com/>
- Glogster <http://www.glogster.com/>
- Freesound <http://www.freesound.org/>
- Spaaze <http://www.spaaze.com/home>
- Cacao- mindmaps, diagrams <https://cacao.com/>
- Wordle <http://www.wordle.net/>
- Screenr <http://www.screenr.com/> Screencasts
- Socrative- Student response system <http://www.socrative.com/>

- Skype Education: <https://education.skype.com/> (new site) <http://beta.skype.com/en/>
- Celly- mobile social networks <http://cel.ly/>
- OhLife - journaling <http://ohlife.com/>
- Simple Meet Me <http://simplemeet.me/#>
- Edmodo www.edmodo.com
- Schoolnotes <http://www.schoolnotes.com/>
- Producteev <http://www.producteev.com/>
- Pt Table <http://www.phtable.com/>
- Study Blue <http://www.studyblue.com/>
- Course Hero <http://www.coursehero.com/i>
- Teachnology <http://www.teach-nology.com/>
- Classmarker- <http://www.classmarker.com/>
- Flubaroo <http://www.flubaroo.com/>
- Cornell Notetaking system- (Not an App)
- BoomWriter <http://www.boomwriter.com/>
- Starfall.com <http://www.starfall.com/>
- Little Bird Tales <http://www.littlebirdtales.com/>
- Toondoo <http://www.toondoo.com/>
- Toontastic (app) <http://launchpadtoys.com/toontastic/>
- Storybird <http://storybird.com/>
- Goodreads- <http://www.goodreads.com/>
- Pen.io- write without a blog <http://pen.io/>
- Paper rater- <http://www.paperrater.com/>
- Edublogs <http://edublogs.org/>
- Facebook
- Twitter
- Iear.org- app reviews
- Posterous- blogging option
- Tumblr
- National Archives- Docs Teach <http://www.archives.gov/education/> and <http://docsteach.org/>
- Useful Charts <http://www.usefulcharts.com/>
- Draw Me a Game- see Jellycam- same website

- Critical Thinking Community <http://www.criticalthinking.org/>
- Illuminations (math) <http://illuminations.nctm.org/>
- Math Projects Journal <http://mathprojects.com/>
- Purple Math <http://www.purplemath.com/>
- Mathtrain.tv
- Math.com
- NSTA- Lab Out Loud podcast & more <http://www.nsta.org/>
- NCTE <http://www.ncte.org/>
- NSTeens- Internet Safety <http://www.nsteens.org/>
- Speakpipe <http://www.speakpipe.com/>
- Hackasaurus <http://www.hackasaurus.org/en-US/> (teaching elementary coding- fun!)
- Incredibox (music and cartoon thing) <http://www.incredibox.com/en/#/application>
- Queekypaint <http://www.queeky.com/>
- GoAnimate <http://goanimate.com/>
- Videolicious <https://videolicious.com/>
- Capzels <http://www.capzles.com/>
- Eppybird.com (diet coke and mentos experiment videos and more)
- Present.me
- Poll Everywhere
- Nobelprize.org
- Alice
- icivics- We the Jury <http://www.icivics.org/>
- Mind42 <http://mind42.com/>
- Voicethread
- 6oin6o wikispaces.com
- Teaching that Sticks- Chip & Dan Heath <http://groups.haas.berkeley.edu/CTE/documents/Teaching%20That%20Sticks.pdf>
- Grammarly.com (also has fun Facebook page)
- NoRed Ink- <http://www.noredink.com/>
- Audioboo <http://audioboo.fm/>
- iTunes U

