25 DIGITAL TOOLS FOR THE CLASSROOM

BY

ASK A TECH TEACHER

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If you don't have children, you may not have noticed the massive changes going on in how students learn. Where adults are struggling with adjusting to the onslaught of technology in their lives, hoping to inch their way into its use, students have no such luxury. Every year, there are new iPads, apps, online grading systems, Chromebooks, a teacher website they have to visit every day for homework, and more. As a teacher for twenty five years (the last fifteen in technology), it has my head spinning.

But students don't mind a wit. They're ready, wondering what's taking us so long to use the tools they can't get enough of at home.

I was reading an article–*Five Real Reasons Why Teachers Don't Use Technology More* from eSchool News explaining why teachers don't use technology. Included were some that probably resonate with you–

- *it keeps changing so how do you decide what to choose*
- *too much to do, too little time*
- *teachers are pulled in too many directions*
- *unreliable technology*
- *no respect for the teacher's voice in this tech ed process*

I was nodding, thinking of people the reasons fit perfectly–and then I noticed: The article was written in

1999!

That's right–almost two decades ago and nothing's changed.

Have you been giving the same reasons for decades too, hoping the tech demons will just go away and leave you to teach in peace? Every June, do you say, *I got through another year without this or that tech tool–and everything went well.*

But did it go well? Take a moment to think. Did students seem engaged, motivated, and involved? Were there a few more (again) of your colleagues who went to the dark side and started using [this or that] tech tools? And seemed excited by it?

This year, right now, stop giving the same tired excuses for why tech can't be integrated into your classroom. What about the top reasons why teachers use technology:

- *students like it*
- *it allows for differentiation*
- *the future is here*
- *students will need technology for college and career*
- *students can learn at their own pace*

- *it facilitates collaborative work*
- *it enables students to easily publish and share a project with classmates*
- *it makes communication with multiple audiences easier*
- *it enables use of a wide variety of media and formats*
- *it encourages cultural understanding and global awareness*
- *it provides options (for example: for communication—email, forums, blogs)*
- *it provides access from anywhere with an internet connection*

If even one of those reasons resonate with you, it's time to see what all the fuss is about. I can make it easy to get started. Here are the top twenty-five digital tools teachers are using in their classrooms:

- *annotation tool*
- *avatars*
- *backchannel devices*
- *blogs*
- *class calendar*
- *class Internet start page*
- *class website*
- *digital devices*
- *digital note-taking*
- *digital portfolios*
- *dropbox*
- *email*
- *Evidence Board*
- *flipped classroom*
- *Google Apps*
- *journaling*
- *maps*
- *online quizzes*
- *screenshots and screencasts*
- *student websites*
- *study helper*
- *Twitter*
- *video channel*
- *virtual meeting rooms*
- *vocabulary decoding tools*

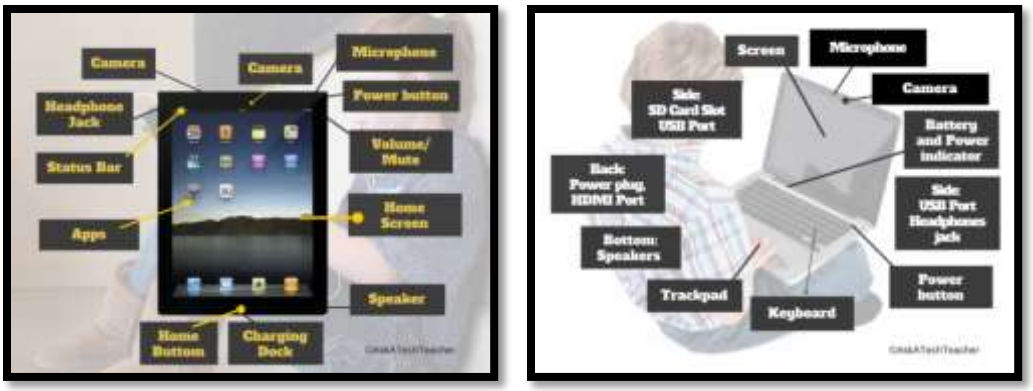
Digital Devices

K-8

Which digital device you use—PCs, Macs, Chromebooks, laptops, iPads, Surface—is varied, but every school needs some form of digital devices for their students. Common Core blends the use of technology into every grade level, every standard, multiple times.

Spend time with your students making sure they understand the digital device you're using during classtime. At the end of this article are worksheets to assess their knowledge of whichever you are using.

Figure 1a-b--Parts of digital devices



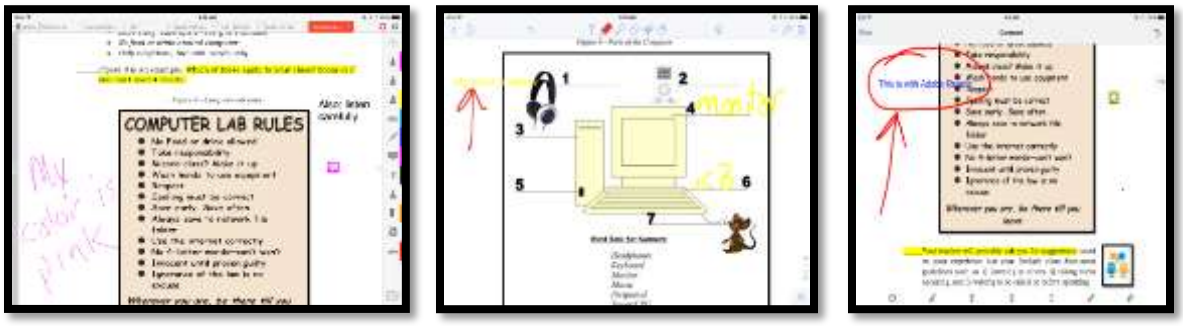
If necessary, review with students. For example, if you use iPads, ask where the headphones are on this device? Or the mouse? How about the USB Port? Ask students where the iPad microphone is on, say, the PC or Chromebook. How about the charging dock?

Annotation Tool

K-8

If using digital textbooks, show students how to annotate their copy with the note-taking tool used in your school such as iAnnotate, Notability, or Adobe Acrobat.

Figure 2a-c iAnnotate, Notability, Adobe Acrobat



If students share the PDF with other students (for example, it's loaded on a class digital device that multiple classes visit), show how to select their own color that's different from other students.

Point out to students that the annotation tool not only allows them to take notes in the etext, but any PDF they access with their digital device.

Review options available in the annotation tool you use, such as:

- *highlighting*
- *text*
- *freeform*
- *notes*

For more on note-taking, click here.

Avatars

2nd-8th

Students can create a profile picture with an avatar creator like (click for link, Google for address, or use your favorite):

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Faceoff: What Digital Device Should I Buy?

Digital devices

In the not so distant past, two types of computers battled for supremacy in the classroom: Macs or PCs. Both were desktops and both did the same things, but in hugely different ways.

Today, whether it's a Mac or a PC, a desktop is only one of the digital devices available in the education toolkit. First laptops eased their way into schools, pricey but popular for their portability and collaborative qualities.

Then came iPads with their focus on the visual, ease of use, and engagement of users. The most recent entrant into the education digital device market is Chromebooks–able to do 'most' of what 'most' students need–at a precipitously lower price.

That means educators now have four options (desktops, laptops, iPads, Chromebooks) as they select tools to unpack education. The challenge is to understand the **differences between these options** and **select based on personal criteria**. That includes **classroom needs, infrastructure, maintenance, and–yes–money**. What gives the most value for the least investment?

To compare these digital devices, I focused on criteria important to the educator rather than the IT folks, such as:

- operating system--is what powers the device reliable?
- set-up--what must be done after it arrives in its packing box and before the first use?
- cost--how much does it cost for a 'typical' set-up?
- maintenance--how much of the teacher's time is required to keep it operating?
- virus and malware issues--are these a common problem? Controllable? A non-issue?
- boot-up time--how long does it take a student to power up?
- speed while using--does it keep up with student projects or does it lag when too many programs are operating at once?
- keyboard--what type of keyboard is included?
- popular programs--can it run the programs used in most schools? Does this include teacher favorites like MS Office, Google Earth, or KidPix?
- ease of printing--can students print on demand, from anywhere and to most printers?
- ease of switching between programs--what is required to toggle between two or more open programs?
- ease of multitasking--can you easily curate material from multiple sources for a project?
- update alerts--how often do the annoying pop-ups that require a program update interrupt student work?
- learning curve--how difficult is it to learn to use the device?
- portability--can it be carried easily and safely?
- durability--how well can it withstand normal student wear and tear?
- peripherals--can you plug cameras, ipods and other devices into it so they work together?
- able to customize--this doesn't mean the start screen, rather the hardware. Is this an easy process? Are there extra ports available to plug the device into digital tools like TV screens?
- software--can you install favorite programs?
- operate anywhere--what does it require to run--Wifi, battery, electricity?

- downtime--how often does it not work?
- ability/need to upgrade--when there are software/hardware updates, how easy/difficult is this to accomplish?
- additional comments--what else should potential users know before making their choice?

Here's how they compare/contrast:

	Desktop	Chromebook	Laptop	iPad
Operating system	*Windows or OS X*	*Chrome OS (Linux)*	*Windows or OS X*	*iOS*
Set-up	*Can be complicated*	*Plug in, log on, go*	*Can be complicated*	*Plug in, go*
Cost	*Cheap*	*Cheap*	*Expensive*	*Expensive*
Maintenance	*Virus protection, updates, software, repairs cheaper than other options*	*Almost nothing; hardware repair may require unit replacement*	*Virus protection, updates, software, repairs may be expensive*	*Almost nothing; hardware repair may require unit replacement*
Virus and malware issues	*Uses firewall, antivirus, malware protection*	*None*	*Require firewall, antivirus, malware protection*	*None*
Boot-up time	*Average*	*Fast*	*Average*	*Fast*
Speed while using	*Depends upon install*	*Fast*	*Depends upon install*	*Fast*
Keyboard	*User selected—standard to gamer*	*Standard; can upgrade*	*Standard; can upgrade*	*Virtual; some schools use external keyboard*
Popular programs	*Compatible with most*	*Only online and apps; availability a work in progress*	*Compatible with most*	*Only apps; availability a work in progress*
Ease of printing	*Easy*	*Requires Google Chrome and Google Cloud printing*	*Easy*	*Requires Airprint-enabled printer*
Switch between programs	*Dock or taskbar*	*Browser tabs*	*Dock or taskbar*	*Home button*
Multitask	*Easily runs multiple programs*	*Runs multiple programs as browser tabs or side-by-side windows; multitask mode available (two mouses)*	*Easily runs multiple programs depending upon processor speed*	*Use 'multitasking gestures' under Settings*
Update alerts	*Constant—must be cleared*	*Rare; device restart installs updates*	*Constant—must be cleared*	*Rare*
Learning curve	*Moderate*	*Low*	*Moderate*	*Low*
Portability	*None*	*Lightweight, battery life varies (depends on usage)*	*Yes, but depends on device; battery depends on use*	*Lightweight, 10 hr. battery (depends on use)*
Durability	*Lots of parts, wires, plugs that can be damaged*	*Considered tough and durable*	*If one part breaks, entire device may need replacement*	*Shouldn't be dropped or mishandled*
Peripherals	*Highly adaptable*	*plug-and-play; compatible with USB HDMI devices; no downloads*	*varies with device*	*Limited, no downloads; must plug in via charging dock*
Ability to customize	*High, hardware easily changed out or adapted*	*Through HDMI, VGA, USB port*	*Moderate; Hardware is fixed*	*No HDMI, USB, difficult to customize*

Install software	*Will take most software*	*No*	*Will take most software*	*No*
Operate anywhere	*With or without internet, but must be plugged in*	*Requires internet and battery—some offline capabilities*	*With or without internet—depends upon battery life*	*Require WiFi and battery*
Downtime	*Varies due to crashed drives, viruses, and more*	*None if the school swaps broken device for working device*	*Varies due to crashed drives, viruses, and more*	*None if the school swaps broken for working*
Adaptability between home and school	*Impossible*	*Excellent, but requires internet*	*Good*	*Excellent, but requires WiFi*
Ability/need to upgrade	*Install/replace upgraded software and hardware*	*Software always up to date; hardware changes over time*	*Install/replace upgraded software and hardware*	*Install OS updates; hardware updates require new device*
Additional comments	*Bulky; lots of separate pieces*	*Highly dependent upon internet connectivity*	*Battery life dictates uptime*	*No Flash support/*

I'm not going to add up the pros and cons because that will depend upon your needs. Here are general ideas on how to make that overarching go-nogo decision:

1. Be clear what each device can and can't do and whether that fits your needs. An iPad is not a laptop. A Chromebook will not run native software. A laptop will not boot up quickly and will always require maintenance. Decide if you can tolerate the negatives to get the positives.
2. Know if there are characteristics that are more important than others and weight them accordingly. For example, 'sturdy' may be much more important than 'ease of printing' so you might give Chromebooks more points for that one.
3. Know how important 'software vs. online tools' is to you.
4. Understand your IT folks. How busy are they? How deep are their skills? The device that is easiest to maintain might be an important consideration.
5. Poll teachers for the reasons they use digital devices. If they use online flash programs a lot, iPads would be a poor choice. If they are vested in software like KidPix or Google Earth, Chromebooks will make them unhappy.
6. Who you buy your device from will affect how much Cloud storage users get. This can vary from 100G to 1T for Chromebooks. These both sound like a lot of space unless you're creating movies. A thirty minute video can take half a gig of space.

For more detail, check out Laptop Mag's Chromebook vs. Windows comparison. Here's a popular comparison between Chromebooks and iPads.

Student Blog Rubric

Adapted from University of Wisconsin-Stout

Evaluation scale:

Exemplary: *32-36 points*
Proficient: *28-31 points*
Partially Proficient or Incomplete: < 28 points (resubmit)

CRITERIA	Exemplary	Proficient	Partial	Incomplete	POINTS
Relevance of Content to Students and Parents	***9 points*** ▪ *Content has useful information* ▪ *Content is clear, concise; points readers to up to date resources.* ▪ *Blog is updated frequently*	***6 points*** ▪ *Content points readers to quality resources, is informative* ▪ *Resources are clearly described so readers can navigate easily*	***3 points*** ▪ *Content points to unrelated information.* ▪ *Resources are not clearly described so readers cannot navigate easily.*	***0 points*** ▪ *Resources pointed to are inaccurate, misleading or inappropriate* ▪ *Annotations are missing, do not describe what is found*	
Use of Media	***6 points*** ▪ *Media enhance content and interest.* ▪ *Creativity enhances content*	***4 points*** ▪ *Most media enhance content.* ▪ *Most files show creativity*	***2 points*** ▪ *Some media don't enhance content.* ▪ *Some use of creativity is evident to enhance content.*	***0 points*** ▪ *Media are inappropriate or detract from content.*	
Fair Use Guidelines	***6 points*** *Fair use guidelines are followed with proper citations.*	***4 points*** *Fair use guidelines are frequently followed; most material is cited.*	***2 points*** *Sometimes fair use guidelines are followed with some citations.*	***0 points*** *Fair use guidelines are not followed. Material is improperly cited.*	
Links	***3 points*** *All links are active and functioning.*	***2 points*** *Most links are active*	***1 point*** *Some links are not active.*	***0 points*** *Many links are not active.*	
Layout and Text Elements	***3 points*** ▪ *Fonts are easy-to-read* ▪ *Use of bullets, italics, bold, enhances readability.* ▪ *Consistent format throughout*	***2 points*** ▪ *Sometimes fonts, size, bullets, italics, bold, detract from readability.* ▪ *Minor formatting inconsistencies exist*	***1 point*** ▪ *Text is difficult to read due to formatting*	***0 points*** ▪ *Text is difficult to read with misuse of fonts, size, bullets, italics, bold* ▪ *Many formatting tools are misused*	
Writing Mechanics	***3 points*** *No grammar, capitalization, punctuation, spelling errors*	***2 points*** *Few grammar, capitalization, punctuation, and spelling errors*	***1 point*** *4+ errors in grammar, capitalization, punctuation, and spelling*	***0 points*** *More than 6 grammar/ spelling/ punctuation errors.*	
				TOTAL POINTS	/30

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Other Singles from Structured Learning

- 14 Non-writing Options to Teach Writing
- 15 Digital Tools in 15 Days
- 25 Digital Tools for the Classroom
- Blogging in the Classroom
- Brainstorming
- Bridge Building
- Copyright Do's and Don'ts
- Debate in the Classroom
- Digital Book Report
- Digital Note-taking
- Digital Quick Stories
- Digital Quick Writes
- Digital Timelines in the Classroom
- Digital Tools for the Classroom
- Gamification of the Classroom
- Genius Hour
- Google Apps in the Classroom
- Human Body
- Infographics 101
- Internet Search and Research
- Key boarding and the Scientific Method
- Khan Academy
- Presentation Boards in Class
- Robotics
- Screenshots, Screencasts, and Videos
- Service Learning and Tech
- STEM Bundle (4 lesson plans)
- Symbols, Tools, and Toolbars
- Twitter in the Classroom
- Write an Ebook

Which book?	Price
K-8 Tech Textbook (each grade level—print, digital, or both)	*$32.99/25.99//53.08 + p&h*
K-8 Student tech workbooks (with video, teacher manual)	*$199 per grade level*
35 More Projects for K-6 (aligned w curriculum—digital only)	*$31.99/25.99/52.18 + p&h*
55 Tech Projects—Volume I, II, or both (digital only)	*$18.99/$32.49 + p&h*
K-8 Keyboard Curriculum (print, digital, or both)	*$25.99-$64*
K-8 Student keyboarding wkbks (with video, teacher manual)	*$199 per grade level*
K-8 Digital Citizenship Curriculum	*$29.95/25.99/50.38 + p&h*
K-8 Common Core Lessons	*FREE-$48.55 + p&h*
Pedagogic Articles	*$6.99 (digital only)*
K-8 Tech Scope and Sequences (Word doc)	*$9.99 each (digital only)*
Posters for the Tech Lab	*$2.99 each (digital only)*
16 Holiday Projects	*$4.99 (digital only)*
98 Tech Tips From Classroom	*$9.99 (digital only)*
Classes (certificate and college credit)	*$260-$450*
Project-based learning (lesson plans)	*$1.99 each on varied topics*
New Teacher Survival Kit (K-5)	*$360 and up (+ p&h)*
New Teacher Survival Kit (K-6)	*$380 and up (+ p&h)*
New Teacher Survival Kit (6-8)	*$330 and up (+ p&h)*
Homeschool Tech Survival Kit	*Starts at $99.00*
Bundles of lesson plans	*$7.99 and up*
Mentoring (1 hr. at a time)	*$50/hour and up*
Year-long tech curriculum help (via wiki)	*$145*
Consulting/seminars/webinars	*Call or email for prices*
Total	

Fill out this form (prices subject to change).
Email Zeke.rowe@structuredlearning.net.
Use PayPal, Amazon, TPT, pre-approved district PO
Questions? Contact Zeke Rowe

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