Shannon Stringer, M.Ed, M. Sp. Ed. is currently the Head of Technology Integration at the Churchill School, a K-12 non-public school serving children with learning disabilities. She received her Masters in Education from Teacher’s College, and her Masters in Special Education from Hunter College and has taught technology and technology integration to students and teachers K-12 for 20 years, mainly at the Churchill School and Center. Shannon believes that technology is a powerful tool for collaboration and learning for teachers and students alike.
Overview of the Session

• What is Assistive Technology?
• Input Difficulties
• Output Difficulties
• Organizational Difficulties
• Devices and how they can be used
Session Goals:

- To become familiar with the types of assistive technology that are currently available

- To develop a framework for deciding which tools to try with a student
What is Assistive Technology?
Three major areas:

- **Input**: Taking in and remembering information
- **Output**: Writing & other products
- **Organization / Attention**: keeping track of materials and assignments
Three major Questions:

• What technology could help the student with their task?

• How much extra work (for teacher and student) is using this technology going to take?
  • to learn
  • to use

• Is this technology going to be useful in the student’s future or is it a short term strategy?
Input Difficulties:

Input:

• decoding text (reading)
• oral and reading comprehension
• processing information in a timely way

Input combined with output:

• Note-taking from lectures or text
Technology that can help with Reading

• Read & Write Gold and Kurzweil - text to speech programs with lots of other functions
• iPod/mp3 Player for audiobooks
• Mac or Windows OS - basic text to speech
• Kindle/nook/ipad for some read aloud functionality & interactive dictionary. Also can have audiobooks on them.
the Serious Moonlight world tour and platinum sales of *Let's Dance*, it was unprecedented mainstream appeal that made him weave off course. Unsure where to navigate now that there was virtually no trace of the fringe about him, Bowie opted to pursue material success again; the pendulum swung toward commerce, but this time around it got stuck there, rusted, perhaps, by a shower of cash and acclaim.

This is not to judge Bowie or take him to task for an uninspired release or two. He was probably sincerely exhausted, having toured all points east and west and turned in high-energy performances at each venue. A longer spell of rest and salubrious recovery time and he might not have been so easily pressured by those who suggested that he rush out the
Technology that can help with Reading

- Bookshare - free digital text and text-to-speech software
- Learning Ally - free audio versions of most texts
Technology that can help with Note-taking

For Notes during lectures:

• Record lectures on a smartphone/iTouch with a microphone.
• Smartpen - for taking notes more efficiently.
• iPad with stylus or keyboard and appropriate app.

For notes while reading text:

• Read & Write Gold, and Kurzweil let you highlight and take notes on text you are reading.
• eBook readers let you highlight and take notes which can then be referenced and sorted.
Technology that can help with Note-taking

**Smartpen** – Take notes on special paper while recording a lecture. Play back your notes afterwards either on your computer or from your pen.
Technology that can help with Note-taking

On the iPad, you can use apps to take notes, record notes, or even annotate imported notes. Notability allows you to combine pen, typing, highlighting and audio, as well as pictures and drawings.
Taking Notes while Reading

eBook readers and programs, such as Kindle, allow readers to highlight, take notes or make bookmarks. These are collected and can be searched to locate information later.

New World of work, learning, and citizenship today—the rigor that matters most—is the ability to ask the right questions. Old World rigor is still about having the right answers—and the more, the better.

Let’s make it simple. Which is more important: memorizing the parts of speech or writing an effective essay? (By the way, there is no research which shows that knowing the parts of speech is necessary for learning to write well!) What is more critical: memorizing the periodic table, which is constantly changing, or knowing how to get relevant information when you need it and being able to explain what it means? We can’t teach and test everything. Teachers today are trying to do it all—cover it all—and this is a recipe for frustration and failure. In fact, Hawaii commissioned a study to find out how much of a teacher’s time would be required to teach all of the state academic content standards in 9th grade. The answer: 3,000 percent of the allotted time.34 We have to decide what’s most important. Here’s my stand:

The rigor that matters most for the twenty-first century is demonstrated mastery of the core competencies for work, citizenship, and life-long learning. Studying academic content is the means of developing competencies, instead of being the goal, as it has been traditionally. In today’s world, it’s no longer how much you know that matters; it’s what you can do with what you know.

Of course, I’m glad I know my times tables and so don’t have to carry around a calculator to figure out the tip for dinner at a restaurant. Some facts are very important and useful to memorize. In addition, there is obviously a certain kind of core knowledge that students ought to know in the various academic disciplines as well as specific content that students need to know to be literate and effective citizens. But serious efforts to discuss and agree on what kind of knowledge is truly foundational across academic disciplines for high school graduates are exceedingly rare in the highly compartmentalized world of academia. In fact, the avalanche of “content standards” that teachers feel compelled to cover today is due in part to the academics who were consulted by many states’ education experts in the early 1990s about what state academic content standards should be. These academics couldn’t agree on what the most important knowledge was, and so the compromise was to say that everything was equally important.

My purpose in criticizing the state and AP tests is
Taking Notes while Reading

In text to speech programs such as Read & Write Gold and Kurzweil, you can also take notes and highlight.

Of course, I'm glad I knew my times tables and so don't have to carry around a calculator to figure out the tip for dinner at a restaurant. "Some facts are very important and should be remembered." In addition, there is obviously a certain kind of core knowledge that students ought to know in the various academic disciplines as well as specific content that students need to know to be literate and effective citizens. But various efforts to discuss and agree on what kind of knowledge is truly foundational across academic disciplines for high school graduates accordingly vary in the highly compartmentalized world of academia. In fact, the availability of "content standards" that teachers feel compelled to cover today is due in part to the academies which were consulted by many states' education experts in the early 1990s about what academic content standards should be. These academies couldn't agree on what the most important knowledge was, and so the compromise was to say that everything was equally important.

My purpose in criticizing the state and AP tests is not to make the case against testing but, rather, to ask some basic questions. I believe in accountability in education, but what do we think we should hold people accountable for—what's most important to answer the question of what skills and real competence with the Seven Survival Skills will now become increasingly important in the future? But we must also consider who should be held accountable if students fail to meet certain standards. Should the students be punished, or is increasingly the case today? Finally, how will we measure what it is we decide is most important?

Business, political, and education leaders who call for more rigor in classrooms and advocate for more accountability in public education have not been anywhere near as rigorous as they need to be in considering these questions. But have they considered what the impact of all of these tests really is on student motivation for learning? You heard two students speak about how the AP courses had affected them, but what other data do we have?
Output Difficulties

Writing:

• Organizing your writing
• Starting and/or finishing writing
• Editing and proof-reading
Starting writing and organizing your writing:

- Smartpen, Smartphone, iPad or ipod/mp3 player with microphone - record answers or ideas and play back to yourself so you remember your answer.

- Kidspiration/Inspiration - organize writing visually.

- iThoughts app on an iPad.
Technology that can help with Writing

iThoughts, Kidspiration and Inspiration Mindmaps

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More Technology that can help with Writing

Finishing, Editing and Proof-reading

• Keyboarding - get fluent

• Dragon Dictate/Dictation/Naturally Speaking - speech to text - there’s an APP

• Read & Write Gold - text to speech helps edit and revise work, encourages adding more details to writing, homophone spell checker, spell-checker/dictionary combo.

Consider NOT Writing: multimedia products - alternatives to writing: movies, podcasts, Voicethreads, recorded speeches
More Technology that can help with Writing

Read and Write Gold Software has a homophone checker that helps students catch these tricky mistakes.
Organizational/Attention Difficulties

- study skills and work habits
- keeping your materials organized
- organizing time and tracking events in your life
Technology that can help Organization /Attention Difficulties

The “Cloud” – it can be used to:

• keep track of all our digital data

• organize and coordinate schedules, due dates, etc...

• collaborate with others across platforms, countries and timezones

• share class notes and discussions
Examples of the “cloud”

- Google documents and Apps
- Shared Calendars - iCal, Google Calendar
- School Websites
- Blogs
- Smartpen/Livescribe site
Examples of the “Cloud”

Google Docs

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Who has access

- Shannon Stringer (you) skstringer@gmail.com Can edit
- sstringer@churchillschool.com sstringer... Is owner
- wsamsel@churchillschool.com wsamsel... Can edit

Add people:
Enter names, email addresses, or groups...
Examples of the “cloud”
Examples of the “cloud”

Livescribe’s Pencast Community:

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Devices and how they can be used:

iPhone/iTouch/Droids/Blackberry

- carry many books at once
- portable personal organizer
- helpful study apps
- record audio
- text brief notes to self
- calendar
- email
- audiobooks
- NOT good for extended typing
- can do Dragon Dictation
Devices and how they can be used:

iPads:

- Text to speech for everything but PDFs
- Use note taking apps with stylus and/or external keyboard
- Many organization and reference apps
- Dragon Dictation app is more robust for iPad
- Seamless syncing with Mac laptops & phones
- Many study apps
Devices and how they can be used:

**iPod, mp3 player**
- record class lectures
- audio notes to self
- Audiobooks/podcasts

**Smartpen**
- record and take notes in class
  - listen to notes later
- share notes on Livescribe.com
- brainstorm audio and visual combined
- can be a lot of work, or very little

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Devices and how they can be used:

**Computer/Laptop**
- usually command center for Cloud accounts
- good for extended writing
- runs best text to speech software
- runs OCR software
- can do speech to text
- can record audio as well
- NOT particularly portable
Technology that can help with:

**Reading:**

- **text to speech programs** with lots of other functions
  - Read & Write Gold ([http://www.texthelp.com/North-America/our-products/readwrite](http://www.texthelp.com/North-America/our-products/readwrite))
  - Kurzweil ([http://www.kurzweiledu.com/default.html](http://www.kurzweiledu.com/default.html))

- Mac, iPad or Windows OS – built in **basic text to speech**
  - Instructions for Mac ([http://atrc.colostate.edu/Data/Sites/1/documents/Quickstarts/MAC_OS_Accessibility_Built-InsQuick_Start_Guide.pdf](http://atrc.colostate.edu/Data/Sites/1/documents/Quickstarts/MAC_OS_Accessibility_Built-InsQuick_Start_Guide.pdf))
  - Instructions for Windows ([http://support.microsoft.com/kb/306902](http://support.microsoft.com/kb/306902))
  - Instructions for iPad ([http://www.youtube.com/watch?v=zMA7NxmmYXE](http://www.youtube.com/watch?v=zMA7NxmmYXE))

- iPod/mp3 Player for **audiobooks**
  - Audio books available from Amazon and Audible and iTunes
  - **Free** public domain audiobooks available from LibriVox ([http://www.librivox.org](http://www.librivox.org))

- **Kindle/nook** for some read aloud functionality & interactive dictionary. Also can have audiobooks on them.

- Get **free** digital text of public domain books from [http://books.google.com](http://books.google.com) and have a text to speech program read it to you

Technology that can help with:

**Note-taking:**

- **Smartpen** - for taking notes more efficiently and getting audio feedback. ([http://www.livescribe.com](http://www.livescribe.com))
- **Record** on a smartphone/iTouch/iPod for recording classes to listen to later.
- **Read & Write Gold, Kurzweil, Microsoft Word** let you highlight and take notes on text you are reading.

**Organizing Your Writing & Starting Writing:**

- **Kidspiration/Inspiration** - organize writing with graphic organizers on a computer ([http://www.inspiration.com](http://www.inspiration.com))
- **Smartpen, Smartphone or ipod/mp3 player with microphone** - record answers or ideas and play back to yourself so you remember your answer.

**Alternative products to Writing:**

- **Audio products - alternatives to writing**: movies, podcasts, Voicethreads, recorded speeches
  - **Voicethread** go to this site to see how it works: [http://voicethread.com/](http://voicethread.com/)
  - **Podcasts**
  - **Slideshows**
Technology that can help with:

**Finishing, Editing and Proof-Reading**

- **Keyboarding** - get fluent
  - For older kids: [http://www.freetypinggame.net/](http://www.freetypinggame.net/)
  - For younger kids: [http://www.bbc.co.uk/schools/typing/](http://www.bbc.co.uk/schools/typing/)


- There’s a free APP (iPad and iPhone) (Dragon Dictation - [http://itunes.apple.com/us/app/dragon-dictation/id341446764?mt=8](http://itunes.apple.com/us/app/dragon-dictation/id341446764?mt=8)) - try that first...

- **Read & Write Gold**
  - text to speech helps edit and revise work, and encourages adding more details to writing
  - homophone spell checker
  - spell-checker/dictionary combo.

**Organization /Attention Difficulties:**

- **The “Cloud”** - (Google, iCloud, live.com) can help:
  - keep track of all your digital data
  - organize and coordinate schedules, due dates, etc...
  - collaborate with others across platforms, countries and timezones
  - share class notes and discussions

- Find out more about **Google Apps**: [http://learn.googleapps.com/](http://learn.googleapps.com/)
- Find out more about **iCloud** (only works with Apple products): [http://www.apple.com/icloud/what-is.html](http://www.apple.com/icloud/what-is.html)
In terms of Web resources for lessons that use Technology, Kathy Schrock is great: http://www.schrockguide.net

Here's another great resource for free digital text books: http://www.ck12.org/flexbook/

Edutopia, an online magazine that focuses on technology use in the classroom is a great resource. Here is a particularly good article: http://www.edutopia.org/blog/20-ways-model-technology-students-heather-wolpert-gawron

If you teach math to older students, this is a very thought provoking blog: http://blog.mrmeyer.com/

Read, Write and Type - the type and learn to read program: http://www.talkingfingers.com/readwritetype/RWT-learning-system.html
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For more information visit: www.hiddensparks.org
About Hidden Sparks

Hidden Sparks is a non-profit fund whose purpose is to help children with learning differences reach their full potential in school and life. Hidden Sparks develops and supports professional development programs for Jewish day schools to help increase understanding and support for teaching to diverse learners.

Guided by a philosophy that by helping schools meet the needs of children with learning and behavioral differences, ultimately all students will benefit. Hidden Sparks’ programs combine professional development in learning and positive behavioral support, guided classroom observation and one on one coaching. The Hidden Sparks model and program is currently in 21 Jewish Day Schools/Yeshivot in New York and 7 in Boston, through a partnership with Gateways: Access to Jewish Education.

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