Livescribe Smartpen:
Reducing Barriers for Students with Learning Disabilities

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Outcomes

1) Apply universal design to the selection and identification of assistive technology
2) Identify ways in which Smartpens can be used by students with disabilities to access curriculum and increase achievement
3) Gain access to resources to learn how to use Smartpens

Research on Smartpens

- Limited published research on its use with students with and without disabilities
- Much of it is descriptive rather than experimental
- Not designed specifically for students with disabilities, its features serve students with disabilities well (Bouck, Flanagan, Miller, & Bassette, 2012)
- Promise for students who have difficulty with written expression because it allows them to record their ideas and then use the pen, or pencasts, as a planning tool which may assist writers in transcribing their ideas (Bogard & McMackin, 2012)
- Beneficial for students who have difficulty taking notes during lectures because it lowers the cognitive load for students and allows them to listen to recordings multiple times (Belson, Hartmann, & Sherman, 2013)

What is the Livescribe Smartpen?

Features of the Livescribe Pen

- There are two options for the pen tip
  - You can use a stylus or ink pen tip
- Livescribe has a free desktop download
  - http://www.livescribe.com/en-us/support/echo/setup/
- Paper is printable and inexpensive
  - On the livescribe desktop under the Tools menu
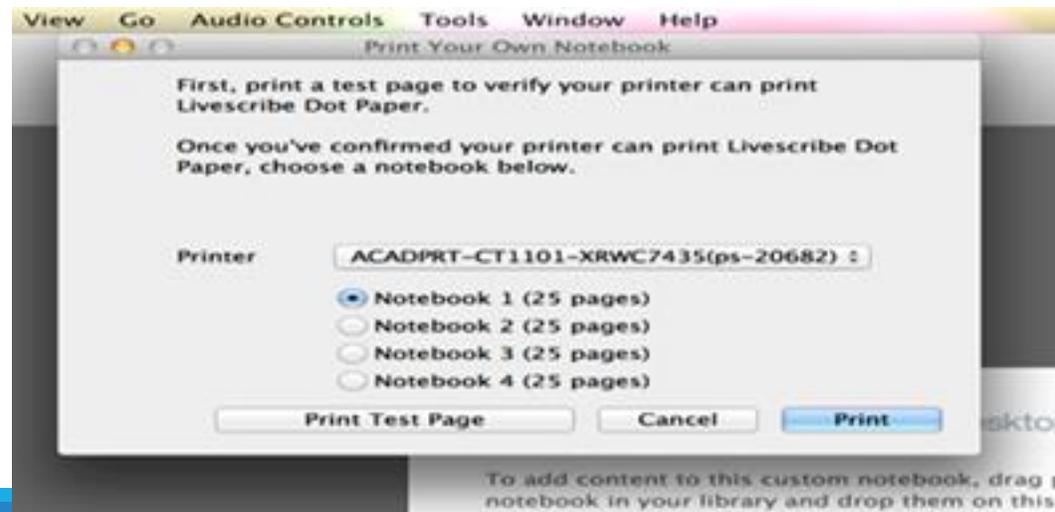
Implications for Educators

Benefits to Teachers

- Testing accommodations
- Access student thinking
- Annotated records
- Increased instructional time
- Promote independence
- Substitute teacher plans

Benefits to Students

- Homework help, writing assistance
- Notetaking
- Review

Pen Name:	Cost:
Livescribe Pen 3	$149.99
Livescribe Echo Pen (2GB)	$119.95
Livescribe Sky (2GB)	$169.95
Livescribe Sky (4GB)	$199.95
Livescribe Sky (8GB)	$249.95
Livescribe Ink Refills	$6.95

Pencasting Technique

What is it?
The Livescribe Pen synchronizes pen strokes that are being written on paper simultaneously with recorded audio. Pencasts can instantly be played back by tapping the pen tip on the paper's pen strokes. Pencasts can be shared by downloading the files to your computer and then sending the files to Google Docs, Evernote, Facebook, and Microsoft Onenote.
What's needed?
- Livescribe Pen
- Livescribe Paper
- Echo desktop

View an example from a frog dissection lesson
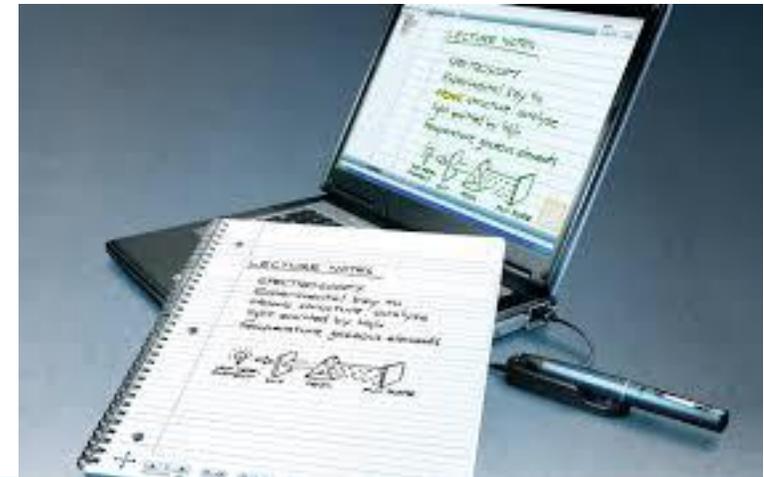
Notetaking Technique

What is it?

As notes are being recorded on paper, the audio in the learning environment is synchronously recorded on the pen. Students can review the notes by tapping anywhere on the page and listening to the audio recorded as the pen stroke was written. When the audio is played back it can be heard at various speeds, the volume can be adjusted and it can be intermittently paused.

What's needed?
- Livescribe Smartpen
- Livescribe Paper
- Echo desktop or Livescribe player (available on web)
- Google account (for group notes)

View an example from a high school biology class.

Print on Paper Technique

What is it?
Print diagrams, maps, pictures, reading passages and more, directly onto Livescribe dot notepad pages. Tap on the page to annotate the page with the Livescribe pen.
What's needed?
• Livescribe Pen
• Livescribe Pen dot paper notepad pages
View an example talking test
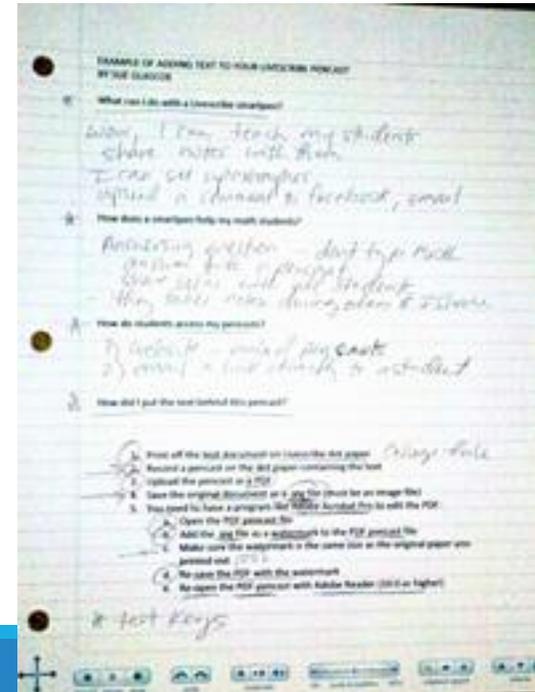
Sound Sticker Technique

What is it?
Place a sound sticker on anything that you would like to record sound on. Tap the sticker with the pen tip (stylus) and record audio. This works great for books, posters, word walls, student work, games, and more!

What's needed?
Livescribe Pen
Livescribe Sound Stickers (with activation code)

View an example talking word wall

Benefits for Students with Disabilities

- Allows students to spend more cognitive energy to listening and processing and not having to write down every detail
- Allows students to listen to a lecture (or passage) as many times as they need to
- Allows students to be more independent at taking tests - the pen can act as a reader.

- Teachers can record pencasts which all students can refer to
- Can use as a transcription device for their thoughts - (the speed on the pen can be adjusted!!)

Livescribe Uses

Elementary/Middle

- Interactive spelling list
- Talking word wall
- Math flash cards
- Multidigit multiplication
- Reading fluency/running records
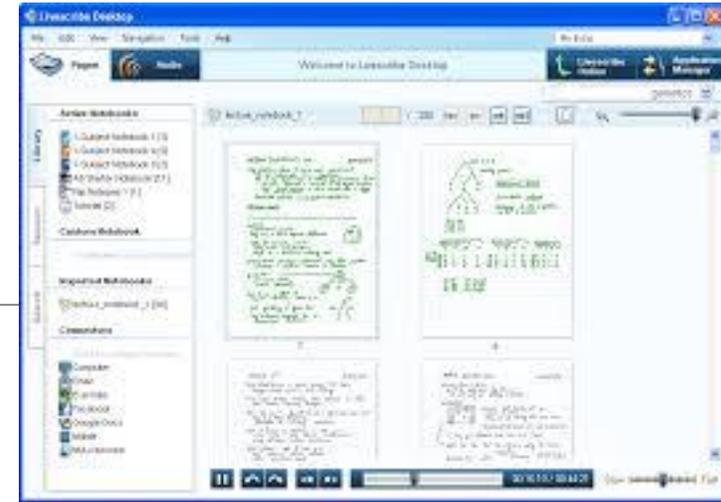
Secondary

- Completion of document-based questions
- Recording course lecture
- Annotated bibliographies
- Interactive diagrams
- Laboratory procedures
- Test read accommodations

Teachers Have the Best Ideas!

- Take a look at this list of ideas made by teachers like you.
- With your group, be prepared to share some ideas that speak to you and that you could try.
- Can you think of any more?

Smartpen Applications

Free Demos:
- Piano
- Translator

MyScript:

Converts handwritten notes to text

TranscribeMe:

Voice to text translation
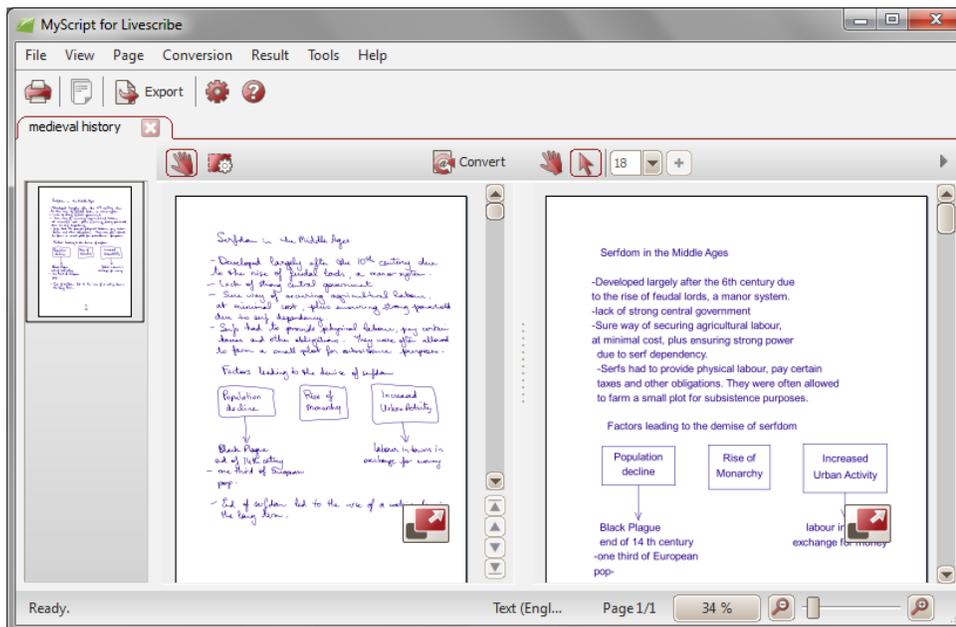
Additional Resources

- [User Guide for Echo Desktop](#)
- [Echo Smartpen User Guide](#)
- [Use for Speech-Pathologist and progress monitoring](#)
- [Students with dyslexia using Livescribe to increase comprehension](#)
- [Audio math flash cards](#)
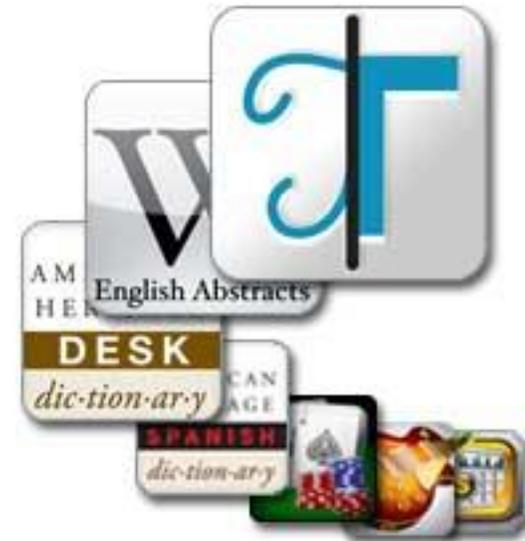
Questions?

- **Lessons Learned**

- **Best Practices**

- **Similar Endeavors**

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   Thank you

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References

Belson, S. I., Hartmann, D., & Sherman, J. (2013). Digital note taking: The use of electronic pens with students with specific learning disabilities. *Journal of Special Education Technology,28,* 13–24.

Bogard, J. M., & McMackin, M. C. (2012). Combining traditional and new literacies in a 21st-century writing workshop. *Reading Teacher, 65*(5), 313-323.

Bouck, E., Flanagan, S., Miller, B., & Bassette, L. (2012). Rethinking everyday

technology as assistive technology to meet students' IEP goals. *Journal of Special Education Technology , 27 (4)*, 47-57.