“LD Resources Foundation is committed to overcoming barriers, and providing access to knowledge, for adults with learning disabilities.”

From our inception in 2001, our non-profit was focused on bringing Assistive Technology (AT) to students in high schools and colleges. We created LDRF award programs to enable students to get free Assistive Technology. We donated technology to colleges and train their staff and students. We continue to advocate for universal design in the classroom.

Zahavit Paz, Co-founder of LDRFA.org
WE ARE...

Zahavit Paz
CEO and Co-Founder of LD Resources Foundation inc.
email: zpaz@ldrfa.org, website: www.ldrfa.org

Shannon Stringer
Head of Technology Integration and Instruction at the Churchill School and Center
email: sstringer@churchillschool.com
Choosing the right Assistive Technology for your students is key

An overview of the different types of critical assistive technologies needed to provide support for student success in all academic settings
Purpose/Hypothesis

In order to reduce the high drop-out rate of LD students upon their transition to post-secondary education, the LD Resources Foundation designed a 3-year program to provide special training for 12th grade students with IEP (Individualized Education Program) for learning disabilities. Planning the transition for many high school students with learning disabilities (LD) or attention deficit hyperactivity disorder (ADHD) is often difficult.

As compared to their typical non-LD peers, Students with LD-ADHD experience:
- A higher drop out rate from post secondary education (Ancill, Ilinka, & Scott, 2008)
- A lower graduation rate, and
- An extended period of study from six to eight years to complete a degree.

Studies indicate these outcomes can be attributable to the major difference in the education environment at college in comparison to high school. Unlike the disability accommodations and support provided in a high school IEP the post-secondary environment is very different and governed by a set of different federal laws and regulations than in high school. (ADA Amendments Act of 2008).

In order to reduce the high drop-out rate of LD students upon their transition to post-secondary education, students need to effectively self-advocate for support services and have direct interaction with the institution’s disability office (DS) to obtain these services. Students require a heightened awareness of the College workload and need to gain confidence in obtaining and utilizing resources such as Assistive Technology (AT) and skills for success.

Often high school students resist using assistive technology (“AT”) because of its stigma, or they may not have been made aware of the existence of AT by their teachers. Most high school students with individualized education programs have access to AT. However, not enough of the LD students are actually using AT tools.

Subjects

Thirty-six high school students in the 12th grade who were receiving IDEA services for a specific learning disability were interviewed to participate in the pilot program. The students were selected based on the experience that almost all graduates of this school go on to attend post-secondary education in a two or four year college program.

Materials/Methods

A survey questionnaire was developed for the students to self-assess their preparedness for post-secondary education prior to the implementation of the start of the Spring 2012 (March 2012) semester and post completion of the program in May 2012. In a semi-structured interview a school staff member provided the students with assistance in the completion of the survey. Twenty-two students completed the questionnaire pre and post participation in the program.

The student survey included questions ranked using a psychometric Likert scale and questions using a phenomenological approach.

Do you feel confident that you have the skills you need to succeed in college?

I am confident in 5 very confident

1. Do you feel confident that you have the skills you need to succeed in college?

2. What areas do you feel most confident about?

3. What are some challenges you fear or think you might face in college?

4. Pick one of the challenges you listed and tell us how you might overcome it.

5. Do you think technology will help you succeed in college?

6. If you think you will use technology to help you succeed, what kinds of technology will you use?

7. Do you think technology will help you succeed?

8. If you think you will use technology, what kinds of technology will you use?

9. What do you think technology will help you?

10. If you think you will use technology to help you succeed, what kinds of technology will you use?

11. What do you think technology will help you?

12. If you think you will use technology, what kinds of technology will you use?

13. What do you think technology will help you?

14. If you think you will use technology, what kinds of technology will you use?

15. What do you think technology will help you?

16. If you think you will use technology, what kinds of technology will you use?

17. What do you think technology will help you?

18. If you think you will use technology, what kinds of technology will you use?

19. What do you think technology will help you?

20. If you think you will use technology, what kinds of technology will you use?

21. What do you think technology will help you?

22. If you think you will use technology, what kinds of technology will you use?

23. What do you think technology will help you?

24. If you think you will use technology, what kinds of technology will you use?

25. What do you think technology will help you?

26. If you think you will use technology, what kinds of technology will you use?

27. What do you think technology will help you?

28. If you think you will use technology, what kinds of technology will you use?

29. What do you think technology will help you?

30. If you think you will use technology, what kinds of technology will you use?

31. What do you think technology will help you?

32. If you think you will use technology, what kinds of technology will you use?

33. What do you think technology will help you?

34. If you think you will use technology, what kinds of technology will you use?

35. What do you think technology will help you?

36. If you think you will use technology, what kinds of technology will you use?

Survey 1: AT Technology help you succeed?

Survey 2: AT Technology help you succeed?

Results for question 3. What are some challenges you face, or think you might face, in college?

Of significance is the student response to strategies that they would utilize to overcome challenges

Survey 1: AT Technology help you succeed?

Survey 2: AT Technology help you succeed?

Survey 3: AT Technology help you succeed?

Survey 4: AT Technology help you succeed?

Survey 5: AT Technology help you succeed?

Survey 6: AT Technology help you succeed?

Survey 7: AT Technology help you succeed?

Survey 8: AT Technology help you succeed?

Survey 9: AT Technology help you succeed?

Survey 10: AT Technology help you succeed?

Survey 11: AT Technology help you succeed?

Survey 12: AT Technology help you succeed?

Survey 13: AT Technology help you succeed?

Survey 14: AT Technology help you succeed?

Survey 15: AT Technology help you succeed?

Survey 16: AT Technology help you succeed?

Survey 17: AT Technology help you succeed?

Survey 18: AT Technology help you succeed?

Survey 19: AT Technology help you succeed?

Survey 20: AT Technology help you succeed?

Survey 21: AT Technology help you succeed?

Survey 22: AT Technology help you succeed?

Survey 23: AT Technology help you succeed?

Survey 24: AT Technology help you succeed?

Survey 25: AT Technology help you succeed?

Survey 26: AT Technology help you succeed?

Survey 27: AT Technology help you succeed?

Survey 28: AT Technology help you succeed?

Survey 29: AT Technology help you succeed?

Survey 30: AT Technology help you succeed?

Survey 31: AT Technology help you succeed?

Survey 32: AT Technology help you succeed?

Survey 33: AT Technology help you succeed?

Survey 34: AT Technology help you succeed?

Survey 35: AT Technology help you succeed?

Survey 36: AT Technology help you succeed?

Acknowledgement

Special thanks to LD Resources Foundation, Inc for providing the funding and research resources for this research project.

References

Key to Life

Assistive Technology is key to eliminate students’ barriers. AT helps students realize their full potential and turn their academic frustration into accomplishments. AT Empowers LD students to master their skills and develop a game plan for success in mainstream, academic or vocational settings.
When do you use Text-to-Speech (TTS)?

(program that generates synthesized audio output with appropriate cadence and intonation)

- Elementary
- MS/HS
- College
- Vocational
FREE BUILT-IN TEXT TO SPEECH

• Now it is part of your Operating System - all types of devices
  • Mac/iPad - in Settings under Accessibility
  • Windows - in Control Panel under Ease of Access
  • Android - Settings - Language and Input
  • Chromebook - in Settings under accessibility

• Browsers have it built in:
  • Safari has great TTS - just right-click after highlighting
  • Chrome TTS has several free extensions
  • Firefox - Add Extensions - Text to Speech
  • Explorer - No plugin but can use Windows extensions

© 2017 LD Resources Foundation
WHY USE E-BOOKS?

• E-books allow you to
  • search the text
  • interact with the text with highlights and annotation
  • export highlights and notes for further study
  • use your highlights to find a particular section of a text
  • Very useful for MS and above
RECOMMENDED TEXT TO SPEECH APPS

• **Voice Dream** - available for iOS and Android
  • control over how much text you see
  • control highlight amount, color and background
  • multiple fonts including Dyslexia
  • compatible with the best voices, multiple languages
  • can load content from website, Gutenberg, Dropbox, Google Drive and Bookshare to name a few.
  • highlighting and annotation available and can be exported
  • great for all ages
E-READERS AND E-BOOKS

• Google Play, Kindle, iBook and Nook,
• The apps are free.
• All but iBooks available on multiple platforms
• They all have dictionary, highlighting and annotation options
• Text to speech is not very seamless but can be done
• If there’s no other source (such as Bookshare) you can make it work
SOURCES OF E-BOOKS

- [Bookshare](www.bookshare.org)
  - Free ebooks, including textbooks for people with reading disabilities.
  - Requires registration and proof of disability. Free for all students in all academic settings.
  - Free digital versions of 521,371 books and textbooks also available in daisy format.
  - You can submit a request for books to be digitized can take 4-6 weeks.
  - Option to download a pure audio version of a text
  - Not good for picture books, so better for upper elementary ages and above
READING BOOK-SHARE BOOKS

• Resources to read Bookshare books

  • Several free options on their website

  • Bookshare books are also compatible with many other assistive technology apps, programs and suites - DAISY format

  • There are options for every type of device from phones to tablets to computers
FREE E-BOOK LIBRARIES

• Free Libraries – No Registration-mainly for MS and above
  
  • Project Gutenberg -offers over 53,000 ebooks
    http://www.gutenberg.org/
  • Google Scholar free published articles.
    http://scholar.google.com
  • Textbooks (k-12)
    http://www.ck12.org/flexbook/
  • Internet Archive
    https://archive.org/index.php
FREE E-BOOK LIBRARIES

• Free Libraries – These require registration before use

New York Public Library, has ebooks and audiobooks,

http://ebooks.nypl.org/

The Andrew Heiskell Library requires registration and proof of reading disability offers several services.

https://www.nypl.org/locations/heiskell

The National Library Service for the Blind and Physically Handicapped.

http://www.loc.gov/nls/
• **Learning Ally** - [http://www.learningally.org/](http://www.learningally.org/)
  • Audio versions of over 80,000 textbooks and literature.
  • Offers membership to qualified students and individuals for an annual fee.
  • Reading Ally offers free software and apps for Android devices, iPad, iPhone or iPod.

• **Librivox** - [https://librivox.org/](https://librivox.org/)
  • Audio recording of public domain books read and recorded by volunteers.

• **Audible** - [https://www.audible.com/](https://www.audible.com/)
  • High quality dramatic readings for a fee. Can be bought in conjunction with Kindle e-books and they will sync.
SPEECH TO TEXT

• Why and when do you try speech to text?
  • Elementary
  • MS/HS
  • College
  • Vocational
FREE SPEECH TO TEXT

• Now it’s part of your Operating System or Browser
  • Mac - in Settings under Accessibility
  • iPad - Siri or microphone icon
  • iPhone - Siri or microphone icon
  • Windows - in Control Panel under Ease of Access
  • Android - Settings - Language and Input
  • Chrome - Add Extensions then turn them on
  • Firefox - none
  • Explorer - none, but can use Windows extension
SPEECH-TO-TEXT

- **Dragon** - the mainstream standard of Speech to Text
  - Dragon app - free - needs wifi
  - Nuance Software - Wifi not needed
    - Specific vocational packages available
    - Builds a personal voice profile to overcome accent or speech impediment issues.
  - Only for older students who intend to use STT a lot.
OTHER TOOLS TO HELP WITH WRITING

• For ES and MS students, writing doesn’t have to be all words.

• Tablets make it easy to collect photos, graphs or videos from the internet and then create photo collage or slide presentation
  • gradually increase the amount of text in the presentation
  • use visuals to begin the task of sequencing the presentation
OTHER TOOLS TO HELP WITH WRITING

• For upper ES and older students
  • webs for brainstorming
  • word prediction that reads to you
  • echo typing - useful for all ES
  • speaking spellcheck and dictionaries
  • homophone checkers.
OTHER TOOLS TO HELP WITH WRITING

• Inspiration/Kidspiration/Webspiration
  • an oldie but a goodie
  • now available for mobile devices and Chromebooks
  • allows you to make graphic organizers and switch to outline format and v.v.

The Assassination of Franz Ferdinand
On June 28, 1914, the heir to the Austro-Hungarian Empire, Archduke Franz Ferdinand was assassinated by Bosnian Serb nationalists. This event, combined with a complex network of international alliances, led to the First World War.

I. Setting
A. Sarajevo
Sarajevo is the capital of Bosnia. Bosnia was on the southeast extremity of the Austro-Hungarian Empire in 1914, right next to Serbia. Collectively, the area is known as the Balkans. Archduke Franz Ferdinand was in Bosnia on an official visit.

B. Year: 1914
Political unrest increasingly characterized Bosnia in 1914. The archduke had been warned that his visit to the region could result in trouble, even tragedy.

C. Day: June 28
Earlier in the day, Gavrilo Princip, a Bosnian Serb nationalist, had made an unsuccessful attempt at assassinating the archduke by throwing a grenade at his car. The police couldn't find him. By coincidence, the archduke's car drove by him once again later that same day. This time, Princip was able to fire fatal shots at the car, killing Franz Ferdinand and his wife, the Duchess Sophie.

II. Causes
A. Imperialism
Austria-Hungary exercised political control over Bosnia, a region within the Balkans, with which it had little or no historic or cultural ties. This was common of many of the world powers by the turn of the twentieth century. Countries conquered and dominated other countries and territories across the world. This led to native resentment and rebellion.
LITERACY SUITES

• For High School seniors, college and above.

Kurzweil 3000-firefly

TTS, highlighting and note taking (including voice notes), dictionary, word prediction, idea mapping, cross-out tool, can create audio file from text. Available for most platforms, including iOS. Includes a free firefly (web based access) account. Also has a customizable test-taking module that allows teachers to choose which AT features to allow during a test.

Texthelp - Read & Write

TTS, highlighting and note taking (including voice notes), dictionaries, homophone checker, speaking spellchecker, word prediction, idea mapping, echo typing. Available for most platforms, including iOS and Chrome.
LITERACY SUITES

Snap and Read Universal and Co:Writer
Chrome extensions or Software. Snap and Read provides TTS, highlighting and note taking, leveled reading, automated bibliographer, dictionary, and a teacher portal to view reading data. Works with Kindle Cloud Reader (on a laptop). Co:Writer provides word prediction, and STT. Has over 4 million topic dictionaries. Available for most platforms, including a limited iOS which is a version of Co:Writer.

Claro
ClaroRead is available for Mac, PC and Chromebooks. Limited versions are available for free for iOS and Chrome browser. A variety of features depending on which version you get. Includes TTS, dictionaries, homophone checker, speaking spellchecker, word prediction, idea mapping, echo typing. Prices: Individual $100-250, Institutional is much cheaper, minimum 250 licenses.
PRODUCTIVITY TOOLS

• Multi-sensory presentations of information
• Organization
  • of materials
• Study apps
• Calendars
• Everyone
  • Smart TV or Apple TV or Roku or Echo - Streaming devices for video, news, youtube, etc…
  • Voice recognition for searches

• ES and lower MS
  • Brainpop
  • NeoK12

• High School and College
  • Khan Academy
  • iTunes U
ORGANIZATION

TABLET VS. LAPTOP OR COMPUTER -

• younger students (ES/MS) work well with tablets
  • automatic saving
  • simple saving protocol
  • touchscreen

• transition very explicitly in HS so they have direct instruction in setting up folders and using them

• in both settings having some sort of classroom management system is very helpful

• transition to College - critical that student has access to organizational supports
ORGANIZATION

CLOUD STORAGE

• Keeps data organized and accessible

• Suites of services: Google, live.com, Yahoo

• Accessibly on multiple devices - Google Drive, Dropbox, iCloud

• Organizing Web resources: Evernote, Flipboard, Goodreader

• Start in MS with guidance
ORGANIZATION
CLOUD STORAGE
ORGANIZATION
CALENDARS

• Start in MS with guidance
ORGANIZATION

ACADEMIC PRODUCTIVITY

• Start in MS with guidance
  • Flashcards
• EasyBib app and website
• Notetaking with audio:
  • AudioNote,
  • Notability
  • Livescribe
ORGANIZATION

FLASHCARDS

• Can be web-based and share-able:
  • Quizlet
  • StudyBlue
• Some iBooks create flashcards of your highlights and notes (one on each side)
• Track success rates and eliminates those you get right
ORGANIZATION

BIBLIOGRAPHIES

Online resources:

• Endnote.com

• EasyBib.com

• Now a Google Extension

Can create your whole bibliography or one citation.
ORGANIZATION

NOTES WITH AUDIO

• While you type, it records the audio.
• You can pinpoint a spot in the audio by clicking on the text, so you can enhance your notes or repeat something you didn’t hear correctly.
• Audio Note for laptop
• Notability for tablet
  • also allows drawing etc.
LEGAL RIGHTS

• How do you fund all this technology?

• IDEA The Individuals with Disabilities

• For more info refer to the US Department of Education website: https://www2.ed.gov/policy/landing.jhtml?src=pn
• LD Resources Foundation is committed to overcoming barriers, and providing access to knowledge for students with learning disabilities.

A PDF version of this presentation can be found on the LD Resources Foundation Website, under the Resources section:

Zahavit Paz
www.LDRFA.org
zpaz@ldrfa.org
646-701-0000
Biometrics- (or biometric authentication)
Refers to the identification of humans by their characteristics or traits

Daisy Format-DAISY
( the Digital Accessible Information System) is the emerging world standard for digital talking books for people who are blind or have a print disability.

E books-

Executive function:
Also known as: cognitive control and supervisory intentional system.
Is an umbrella term for the management (regulation, control) of cognitive processes, including working memory, reasoning, task flexibility, and problem solving as well as planning, and execution.

Homophone
a word that has the same sound as another word but is spelled differently and has a different meaning:

Multi sensory learning-
Multisensory learning is a category of learning that uses more than one sense to obtain and retain information. This learning is normally categorized into: auditory, visual, and kinaesthetic learning. Children diagnosed with a learning disability find this type of learning very beneficial.

STT-
Short for speech to text voice recognition
Ability of computer systems to accept speech input and act on it or transcribe it into written language.

TTS-
Its Short for text-to-speech, a form of speech synthesis that converts text into spoken voice output. TTS systems were first developed to aid the visually impaired by offering a computer-generated spoken voice that would “read” text to the user.

Universal design –(often inclusive design)
Refers to broad-spectrum ideas meant to produce buildings, products and environments that are inherently accessible to older people, people without disabilities and people with disabilities. The term “universal design” was coined by the architect Ronald L. Mace to describe the concept of designing all products and the built environment to be aesthetic and usable to the greatest extent possible by everyone.