

EBook Technology and Gifted Readers

Christine L. Weber
Department of Childhood Education
University of North Florida
United States
cweber@unf.edu

Terence W. Cavanaugh
Department of Leadership, Counseling, and Technology
University of North Florida
United States
tcavanau@unf.edu

Abstract: The electronic book, or eBook, offers students, teachers, and schools an additional medium or tool that can support or enhance the reading experience. Essential to preparing to use eBooks in educating gifted learners, as with all books, is knowledge of the characteristics, abilities, and interests of gifted readers and the wide variety of eBook options available. This paper provides a rationale and strategies for using eBook technology to promote reading with gifted learners including underachieving gifted readers and LD gifted readers. Information about online digital libraries and reading list books available as ebooks is provided.

EBooks

The book itself is one of the foundations of modern education. But today there is a new book available to educators, one that integrates new technologies. Today's technology enhanced book is called an electronic book, or eBook. EBooks are textual documents that have been converted and "published" in an electronic format that displays on eBook readers, devices, or computers using eBook software programs. This new form of book is a relatively recent addition to book styles, and it offers students, teachers, and schools an additional tool for the teaching of reading and the integration of reading into content areas, and it offers readers an additional "style" of book. Using the technology resources of computers and internet access that are already present in homes, classrooms, and libraries educators and students can begin using eBooks with little or no cost.

Gifted readers in particular can benefit from the added tools and variety afforded by eBooks. This paper will provide suggestions for using eBook technology to promote reading with gifted learners including the underachieving gifted reader and the LD gifted reader.

Characteristics of Gifted Readers

Gifted readers often read earlier and tend to read independently soon after teacher instruction. They also tend to be better readers requiring less drill for mastery of skills (Halsted, 1990). Gifted readers can digest a large quantity of information about a topic of interest. Because of their ability to understand the nuances of language, make connections, and deal with the abstract, gifted readers like provocative stories and solving plots with twists. Books with gifted characters or multidimensional characters are also appealing.

Abilock (1999) identified five facts about gifted readers:

1. Gifted readers are skilled, flexible readers who read often;
2. Gifted readers monitor their reading;
3. Linguistically rich texts are especially suited to gifted readers;
4. Gifted readers use other strengths in response to the particular demands of the text; and
5. Gifted readers are passionate readers who find books to love.

Catron and Wingenbach's research identifies specific skills gifted readers possess (as cited in Vosslander, 2002, p. 15):

- Anticipation of meaning based on visual clues;
- Use of prior knowledge and experience, personal identification, and reader purpose; and
- Awareness of cognitive processing of a text for information/concept gathering. Links are made between the present text and what the reader has previously read, and, as a result, concepts are formed or developed.

These facts and skills are important when considering using eBooks to promote reading with gifted readers. While eBooks can be used as a tool to present text, just as a paper based book can, eBooks also contain features that can be classified as accommodations or as assistive technology tools for reading. eBooks can provide these accommodations for reading by providing alternative formats, scaffolds, and supports for reading activities to reach all students, including gifted and advanced readers. Some of the accommodating features that eBooks can provide include: adjustable text size, highlighting, bookmarking, note taking, interactive dictionaries, and reading aloud through text-to-speech.

EBook Technology

A wide variety of eBooks options exist today. Five of the most common eBook formats for reading off a desktop computer or handheld device are: text, web, Adobe Reader, Palm Reader, and Microsoft Reader. Other specialized eBook formats include CD storybooks and talking book devices like LeapFrog's LeapPad. One familiar variety of electronic book is audiobooks such as the books on tape and books on disc. This audio book format has now expanded to include books on MP3, which have been read aloud by people or machines using a text-to-speech program. While not fitting the traditional definition of a book because most television programs and movies are close captioned, a running text of dialog, in essence creates an electronic book.

Many types of eBooks are available. The books range from copyright free texts of classic literature, science, and philosophy to current best sellers. There are three basic methods of obtaining eBooks for the home, classroom, or school for little or no cost. You can purchase an eBook from a store, you can download or use an eBook from a free online library, or students can design their own eBooks.

Current best sellers are available from online bookstores for purchase and download. Audiobooks from Audible (www.audible.com) include recent fiction, non-fiction, and other broadcast media. Some online bookstores like ContentLink (<http://www.contentlinkinc.com/>) only sell digital books. Other online bookstores, for example Amazon (www.amazon.com), sell not only hard cover and paperback books but also audiobooks and eBooks for the Adobe Reader, MS Reader, and Palm Reader programs.

Don't think that you are limited to purchasing eBooks from retailers. There are a great number of online free libraries and even a number of physical libraries (those big brick building ones) that contain and make available a large number of eBooks. Online libraries include Internet Public Library (www.ipl.org), Florida Electronic Library (www.flelibrary.org), Blackmask (www.blackmask.com), and Project Gutenberg (www.gutenberg.org), which is the oldest of the online eBook resources. Gutenberg has over 10,000 copyright free publications from their first, *Alice in Wonderland* to the *Human Genome Project*. Some of the online libraries store and distribute books in multiple formats, and some of these libraries have become specialized with collections aimed at specific languages, content areas, or age groups. A large part of many of the free libraries' eBook collections are works that have passed into the public domain, and they may be found in many of the libraries. Visit http://www.drscavanaugh.org/ebooks/ebook_libraries.htm for over 95 free eBook resources.

Using eBooks with Gifted Readers

Clark (1983) identifies cognitive needs that differentiate gifted children from others. eBooks provide a variety of ways to meet those needs. Access to a wide variety of books encourages exposure to (1) new and challenging information, (2) varied subjects, (3) areas of interest, and (4) difficult vocabulary and concepts. Gifted readers can also be exposed to ideas and issues appropriate to their own rate of learning and continue to pursue answers to questions beyond what might be considered in an allotted span of time. Gifted readers are so advanced that challenging materials must be made available. Children's varied and unique interests need to be nurtured.

Gifted readers may be in jeopardy of losing sight of their schools as the place to find challenging books because they don't find and interact with appropriate materials (Brown & Rogan, 1983). EBooks can provide an avenue for teachers to help gifted readers grow intellectually. By using eBooks, teachers and students can create, often at no cost, a greater diversity in the available reading material, including materials at a wide range of readability levels.

Reis, Gubbins, and Richards (2001) recommend gifted readers have access to an array of classroom and library books. On the web teachers and students can find sites with single books, special collections, and entire online libraries, many of which make their books available at not cost to the reader. These electronic forms of books and libraries are expanding opportunities for students to have access to books. Using these resources a reader can often find related titles, such other books in a series or by the same author, which may not be available at either the school or local public library. For example, most libraries have the children's favorite *The Wizard of Oz* by L. Frank Baum, but how many of the other books in the series are available? A number of online libraries, such as Blackmask and Project Gutenberg, not only freely distribute the *Wizard of Oz*, they also give away the other 13 books that Baum wrote in the series. Entire collections based upon special topics can also be found. For example, the Electronic Text Center at the University of Virginia Library (<http://etext.lib.virginia.edu/>) has entire collections of electronic books concerning African-American, Native American, and women writers. A student can use this electronic library to obtain and read the collected works of Booker T. Washington, for example. An advantage of using these resources is a student's speed of access; once he/she finds an interesting book, usually within seconds the book can be downloaded, and reading can begin.

Using EBooks with Underachieving Gifted Readers

EBooks can be a helpful tool for encouraging gifted children who may be underachieving for a variety of reasons. It is estimated that between 20-50% of gifted students underachieve (Ford & Thomas, n.d.). Whitmore (1980) identifies three types of strategies found effective in working with underachieving behavior in students: supportive strategies, intrinsic strategies, and remedial strategies. Remedial strategies include the opportunities for students to excel in areas of strength and work on areas of specific learning disabilities. Because technology itself is attractive to many students, eBooks can provide a motivating approach for remediation.

West-Christy (2005) suggests five useful scaffolding techniques for readers who might be reluctant or remedial. These five techniques are:

1. Offer a Wide Range of Reading Materials
2. Use Pre-Reading Techniques
3. Incorporate Large-Print Materials
4. Engage Multiple Modalities
5. Teach Important Vocabulary

Many of these supporting techniques are built in to most eBooks programs. eBooks can provide additional books for students to increase the range of the reading materials, and most eBooks will allow the font size to be enlarged to "large print." Many eBooks have a read-aloud feature with synchronized highlighting to engage reading in multiple modalities, and using eBook readers with an interactive dictionary can provide just-in-time learning for new vocabulary.

Technology experiences in the classroom have been found to contribute to student achievement, both by making students more effective in their learning and teachers more efficient in their teaching. Students are attracted to the use of computers and have been found to be much more tolerant of repetition from a computer program; in fact, they come to expect it. Research has shown that it is not the technology by itself, but instead how the technology is used by teachers and students that improves learning and increases student interest (Albright, 1996; Charp, 1998). EBook programs not only display the words of a book, with pictures or animations, but can also include both an audio component and highlighting of phrases as the narrator works through the text, providing an accurate model of what good readers do, while helping to increase fluency (Besalel 2005).

EBook Reading Accommodations and Scaffolds for LD Gifted Readers

EBook programs can provide reading accommodations for students who may be experiencing print or reading difficulties or disabilities. Incidence of learning disabilities in the gifted population is 10-15% (Silverman, 2003). Many of the eBook formats, such as MS Reader and Adobe Reader, for the desktop or laptop have text-to-

speech capabilities. Research on students with reading disabilities showed that comprehension improved when text-to-speech was combined with reading (Leong, 1995; Montali & Lewandowski, 1996; Raskind & Shaw, 2000). Through the use of a control panel a reader can adjust the speed at which the eBook is read. Research findings suggest that student control of text-to-speech speed while reading along increased performance. Findings state that some students benefit from a slower text-to-speech reading speed, while others comprehended better at faster rates (Shany & Biemiller, 1995; Skinner et al., 1995). With some eBook programs the text-to-speech feature is augmented by synchronized highlighting of the text being read. This speech with synchronized highlighting can aid the student in recognizing the structure of written language. This spoken word support has been found to improve reading comprehension for students with reading difficulties (Wise & Olson, 1994).

An additional reading scaffold is the interactive capabilities of an eBook. Most eBook programs provide the ability to highlight text sections, and take notes. Some even add the ability to create drawings within the book. All of these features can increase a student's attending to and comprehension of a given work. Some eBook programs have interactive dictionaries, providing just-in-time learning, that allow users to select any word within the eBook and get a definition instantly, have the definition read aloud, or request an instant translation to another language.

Even the display offered through eBook programs and devices can provide reading scaffolds for many students through their ability to change the displayed text size. Students who struggle with reading, regardless of the reason, can benefit from changing to larger font sizes. The reason for using large print it is not necessarily because these children have visual difficulties. Larger font sizes and spacing actually cause the eyes to move more slowly while reading, allowing students to track their reading more easily (Bloodworth, 1993) and giving them more processing time. While many people associate the use of large print text size with the elderly or people with visual impairments, the benefits gained with the use of large print apply to students who may not have a learning disability, including struggling, reluctant, and remedial readers. All students, especially those susceptible to visual stress, were found to make more errors when using smaller text sizes than with larger text. From this research Hughes and Wilkins (2000) concluded that the reading development of some children could benefit from larger text sizes and spacing than is currently the norm. Reading miscues, including misreading syllables or words; skipping syllables, words, or lines; rereading lines; and ignoring punctuation cues, were found to be virtually eliminated when students read large print books. For most eBook programs, creating a large text format is just a matter of sliding a text size bar to a larger setting.

Conclusion

EBooks and eBook libraries are resources which can expand the classroom interaction and reading experiences by providing additional books and reading options. It is currently estimated that over 100,000 books in eBook formats are now free on the internet. Today's eBook technologies present features valuable for learners with various abilities and special needs, especially gifted readers. The unique features and capabilities of eBook technologies provide the attraction, options, and accommodations especially for underachieving and LD gifted readers that promote reading.

Free online libraries which have books appropriate for gifted readers in elementary or secondary school

Elementary eBook libraries:

1. **Aesop's Fables:** <http://www.umass.edu/aesop/contents.html>
38 fables in traditional and modern forms. Most in html some in flash.
2. **BookPals - performing artists for literacy in schools:** <http://www.bookpals.net/storyline/>
11 stories read by members of the screen actors guild (and others). Stories are read and displayed in a video screen (Windows Media, Real, & Quicktime).
3. **byGosh.com:** <http://www.bygosh.com/>
Children's classic books in HTML format.
4. **Children's Books Online: the Rosetta Project, Inc:** www.childrensbooksonline.org
1,200 antique children's books published in the 19th and early 20th century in HTML

5. **International Children's Digital Library (ICDL):** <http://www.icdlbooks.org/>
The ICIDL is building an international collection that reflects both the diversity and quality of children's literature from 27 cultures in 23 languages (html).
6. **Reader's Theater Editions:** <http://www.aaronsherp.com/rt/RTE.html>
A collection of free scripts for readers theater, adapted from stories by Aaron Shepard and others.
7. **RIF Reading Planet:** http://www.rif.org/readingplanet/content/read_aloud_stories.msp
A collection of read aloud books that changes monthly (Flash format).
8. **Stories to Read Online:**
http://www.beenleigss.qld.edu.au/requested_sites/storiesontheweb/storiesontheweb.html
Links to about 100 stories for early childhood and elementary
9. **StoryPlace Libraries (Elementary & Preschool):** <http://www.storyplace.org/>
Over 20 stories for children along with suggested readings and print out activities.
10. **Tales of Wonder:** <http://www.darsie.net/talesofwonder/index.html>
Folk and fairy tales from around the world in HTML.

General and secondary eBook libraries:

1. **Baen Free Library:** <http://www.baen.com/library/>
over 75 relatively new science fiction books in Reader, Palm, Rocket, and RTF.
2. ~~**Blackmask Online:** <http://www.blackmask.com/>
over 10,000 texts in a variety of formats: MS Reader, .html, Palm, etc.~~
3. **Classic Book Library:** <http://classicbook.info/index.html>
Over 125 books in seven genres done in HTML page by page format.
4. **Concordances of Great Books** <http://www.concordance.com/>
about 600 literary works
5. **Electronic Text Center at the University of Virginia Library:** <http://etext.lib.virginia.edu/>
thousands of xml, html, Reader, and Palm texts
6. **Making of America (MOA):** <http://cdl.library.cornell.edu/moa/>
Created by Cornell University Library, MOA is a digital library of primary sources in American social history (antebellum through reconstruction periods). This is a full text/image journal site of 22 magazines from 1830's to 1900's.
7. **Manybooks.net:** <http://www.manybooks.net/>
Over 600 titles in a variety of formats: Palm, Rocket, PDF, iPod
8. **Page-by-Page Books:** <http://www.pagebypagebooks.com/>
about 400 books to be read online (html).
9. **USGS Books and Other Publications:** <http://pubs.usgs.gov/products/books/index.html>
Listings of **online** books, reports, and pamphlets published by the U.S. Geological Survey's Geology Discipline.
10. **Wired for Books:** <http://www.wiredforbooks.org/>
Collections of audio books and interviews. Contains full versions of A Christmas Carol, Alice in Wonderland, and Beatrix Potter stories along with short stories and excerpts from other books. (Real player)

Below are some suggested books, available for free as eBooks that may be appropriate for gifted readers (a brief list, by no means extensive). All of these books are available for free from the online library **Blackmask** (<http://www.blackmask.com>) Project Gutenberg (www.gutenberg.net) *[note: Blackmask is not currently available]*. Go to the e-library webpage and then search for either the title or the author of the book. Each of the books listed is available in a number of eBook formats including HTML, MS Reader, Palm Reader, and more.

Elementary: <http://www.blackmask.com>

1. **Rumpelstiltskin** (from the Blue Fairy Book)
2. Alcott, Louisa May. Little Women
3. Burnett, Frances H. The Secret Garden
4. Burroughs, Edgar Rice. Tarzan of the Apes
5. Dodge, Mary Mapes. Hans Brinker
6. Doyle, A. Conan. The Adventures of Sherlock Holmes
7. Grahame, Kenneth. Wind in the Willows

8. London, Jack. **The Call of the Wild**
9. London, Jack. **White Fang**
10. Stevenson, Robert Louis. **Kidnapped**
11. Stevenson, Robert Louis. **Treasure Island**
12. Wyss, Johann. **Swiss Family Robinson**
13. Dumas, Alexandre. **The Three Musketeers**
14. Kipling, Rudyard. **Captains Courageous**
15. Verne, Jules. **Journey to the Center of the Earth**

Secondary: <http://www.blackmask.com>

1. Brontes, Charlotte. **Jane Eyre**
2. Cather, Willa. **My Antonia**
3. Conrad, Joseph. **Lord Jim**
4. Dickens, Charles. **Tale of Two Cities**
5. Hawthorne, Nathaniel. **The House of Seven Gables**
6. Hudson, W. H. **Green Mansions**
7. Lewis, Sinclair. **Babbitt**
8. Maugham, Somerset. **Of Human Bondage**
9. Riordon, William L. **Plunkitt of Tammany Hall**
10. Shakespeare, William. **The Tempest**
11. Stevenson, Robert Louis. **The Strange Case of Dr. Jekyll and Mr. Hyde**
12. Thoreau, Henry David. **Walden**
13. Tolstoy, Leo. **Anna Karenina**
14. Twain, Mark. **Life on the Mississippi**
15. Wells, H. G. **The Time Machine**
16. Shelley, Mary. **Frankenstein**

For more online books and libraries visit <http://www.drscavanaugh.org/ebooks/>

References

- Abilock, D. (1999). Librarians and gifted readers: Myths and facts. *Knowledge Quest* 27(5), ProQuest Education Complete, 30-35.
- Albright, M. (1996). *Instructional technology and higher education: Rewards, rights and responsibilities*. Keynote Address at the Southern Regional Faculty and Instructional Development Consortium. Baton Rouge, LA. USA, February 5, 1996 (ERIC Document Reproduction Service No. ED 392 412)
- Besalel, S. (2005). Technology's impact of academic achievement. *T.H.E. Focus* (online newsletter). Retrieved June 21, 2005 from <http://www.thejournal.com/thefocus/featureprintversion.cfm?newsid=33>
- Bloodsworth, J. G. (1993). *Legibility of print* (Report No. CS-011-244). East Lansing, MI: National Center for Research on Teacher Learning. (ERIC Document Reproduction Service No. ED355497). Electronic version retrieved October 12, 2004 from <http://www.eric.ed.gov>
- Brown, W., & Rogan, J. (1983). Reading and young gifted children. *Roeper Review*, 5(3), 6-9.
- Charp, S. (1998). Measuring the effectiveness of educational technology. *THE Journal*, 25(7), 6.
- Clark, B. (1983). *Growing up gifted*. Columbus: Merrill.
- Ford, D. Y., & Thomas, A. (n.d.). Underachievement among gifted minority students: Problems and promises. Adoption.com, childhood learning and education. Retrieved July 18, 2005 from

<http://library.adoption.com/Childhood-Learning-and-Education/Underachievement-Among-Gifted-Minority-Students-Problems-and-Promises/article/927/1.html>

Halsted, J. W. (1990). *Guiding the gifted reader*. (ERIC Document Reproduction Service No. E481). Electronic version retrieved June 15, 2005 from <http://www.eric.ed.gov>

Hughes, L., & Wilkins, A. (2000). Typography in children's reading schemes may be suboptimal: Evidence from measures of reading rate. *Journal of Research in Reading*, 23(3), 314. Electronic version retrieved October 4, 2004 from <http://www.blackwellpublishing.com/journal.asp?ref=0141-0423>

Leong, C. K. (1995). Effects of on-line reading and simultaneous DECTalk aiding in helping below-average and poor readers comprehend and summarize text. *Learning Disabilities Quarterly*, 18(2), 101-116.

Montali, J., & Lewandowski, L. (1996). Bimodal reading: Benefits of a talking computer for average and less skilled readers. *Journal of Learning Disabilities*, 29(3), 271-279.

Raskind, M. H., & Shaw, T. (2000). Assistive technology for individuals with learning disabilities. Available online at <http://www.csun.edu/cod/conf2000/proceedings/1006Raskind.html>

Reis, S.M., Gubbins, E. J., & Richards, S. (2001). *Gifted readers: What do we know and what should we be doing*. Storrs, CT: University of Connecticut, National Research Center on the Gifted and Talented. Retrieved March 29, 2006 from <http://www.sp.uconn.edu/~nrcgt/pdf/nagcread.pdf>

Shany, M.T., & Biemiller, A. (1995). Assisted reading practice: Effects on performance of poor readers in grades 3 and 4. *Reading Research Quarterly*, 30, 382-395.

Silverman, L.K. (2003). Gifted children with learning disabilities. In N. Colangelo & G. A. Davis (Eds.), *Handbook of gifted education* (pp, 533-543). Boston: Pearson Education, Inc.

Skinner, C. H., Johnson, C. W., Larkin, M. J., Lessey, D. J., & Glowacki, M. L. (1995). The influence of rate of presentation during taped word interventions on reading performance. *Journal of Emotional and Behavioral Disorders*, 3(4), 214-223.

Vosslamber, A. (2002). Gifted readers: Who are they, and how can they be served in the classroom? *Gifted Child Today*, 25(2), 14-20.

West-Christy, J. (2005). Helping remedial and reluctant Readers. *Teaching Today: Education Up Close: March 2005*. Retrieved August 14, 2006 from <http://www.glencoe.com/sec/teachingtoday/educationupclose.phtml/29>

Whitmore, J. (1980). *Giftedness, conflict, and underachievement*. Boston: Allyn & Bacon.

Wise, B. W., & Olson, R. K. (1994). Computer speech and the remediation of reading and spelling problems. *Journal of Special Education Technology*, 12(3), 207-220.

