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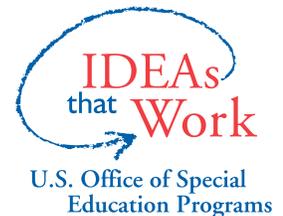
NIMAS

Accessible Textbooks in the Classroom

An Educator's Guide to the Acquisition of Alternate Format Core Learning Materials for Pre-K–12 Students with Print Disabilities

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I. Overview

This Guide is designed to provide educators—administrators, teachers, and paraprofessionals—with effective strategies for acquiring and using accessible, alternate format versions of print instructional materials in the classroom. Beginning with three brief scenarios in the Reaching Every Student Section below, we describe typical challenges encountered by “print-disabled” students at the elementary, middle, and high school levels. The Guide explores solutions for obtaining alternate format materials in four categories: braille, audio, e-text, and large print. Due to emerging research, in the near future a shift in the production of curriculum materials and a growing availability of flexible digital materials will occur, and an increased availability of universally-designed products appropriate for students who cannot use print resources is anticipated. These products, explored in the Texts That Teach—A Promise for the Future Section of the Guide, will be essential for students with disabilities and likely preferable for a range of other students as well: English Language Learners, reluctant readers, and students who simply prefer alternate formats. This Guide is designed to support the acquisition of accessible materials both for students with print disabilities who qualify for NIMAS-derived materials and those who don’t. States and local school districts are obligated by IDEA 2004 to ensure that the needs of both groups are met.

The Solutions for the Classroom Section of the Guide provides an overview of existing resources for acquiring accessible, alternate format versions of core instructional materials: braille, audio, e-text, and large print—how to locate them, and where to turn for help. This section also explores emerging resources that are expected to become available during the 2006–2007 school year, as a result of the accessible materials mandates in IDEA.

The fifth section of the Guide, Systems of Support, explores ways in which federal mandates and market exigencies are expected to expand the creation and distribution of Pre-K–12 instructional materials, and how state and local education agencies (SEAs and LEAs) can establish the coordination necessary to take full advantage of these requirements and opportunities.

The Systems of Support Section of the Guide also provides additional background information on the legal framework supporting and promoting the provision of accessible instructional materials. It reviews the impact of civil rights legislation (the Rehabilitation Act of 1974, the Americans with Disabilities Act), federal education law (No Child Left Behind and IDEA 2004), and copyright law (specifically Title 17, Section 121; the Chafee Amendment), and their relationship to the categorical designation of students unable to access print materials. Awareness of these obligations and constraints provide an important framework for understanding how alternate format materials may be, or, in some cases, must be, provided to print-disabled students.

Finally, the Resources Section of this Guide is designed to provide educators with additional information about locating and acquiring core curriculum materials in specialized formats.

Please keep in mind that solutions offered in this Guide are based on an awareness of both available and emerging technologies, and these are subject to rapid change. It is our hope that this Guide will be as up-to-date and accurate as it can be in order to prove useful to the educational community.

II. Reaching Every Student



Third Grade Josie Baskin’s class of 27 third graders has 6 students with Individualized Education Programs (IEPs), 1 with a Section 504 plan, and 8 English Language Learners. In her eight years teaching at the inner city Montrecht School, Josie has watched the school progress from a borderline chaotic to a structured and responsive environment. The school’s recent performance report indicated that its students were making adequate yearly progress, despite the fact that the majority of Montrecht’s 370 students came from families at or near the poverty level. Josie was particularly pleased with the school’s fourth grade Reading and Math scores, since the steady achievement of Montrecht’s fourth grade students reinforced her emphasis on firming up their basic skill development.

Josie is concerned that this year’s class might present more of a challenge. One of her IEP students is blind, and Josie’s class has a full-time paraprofessional, and regular consultation from a teacher of the visually impaired, who supports the student in learning braille. Her 5 remaining students with IEPs have all been identified as having either Attention Deficit (AD) or as having learning disabilities, or both; while her student with a Section 504 plan has mild Cerebral Palsy that affects his upper extremities, making it difficult for him to write manually, or to hold a book or even a sheet of paper.

Even though Josie is creative and uses a variety of media and resources for instruction, and her students have access to 5 Internet-equipped classroom computers, the core element of her reading instruction is a textbook and associated workbook, and this year’s Math curriculum is predominantly textbook-based as well. She feels that her resources in Science and Social Studies are more flexible and varied, but she is still concerned that her print materials will be a barrier for nearly 25% of her class.

How can Josie acquire braille materials for her blind student and other appropriate accessible versions of core curriculum materials for her students eligible for special education or Section 504 supports?



Sixth Grade The 18 to 23 students in each of Frances Lincoln’s four English Language Arts classes are grouped according to achievement. Even though the tracking system used by her school is not as rigid as it once was, it does classify students based on the pace of their acquisition of new skills, which, in turn, correlates with their achievement levels. The nearly 600 students at Jeffords Middle School come from a mix of lower-middle income families. The majority of students’ parents have been or are employed in the auto parts production factories that surround the town where Jeffords is located. While a number of Frances’ students express a strong interest in attending college in the future, she knows that the majority of her students will enter either the military or the workforce after high school graduation.

This is the second year that Jeffords Middle School has made the district-wide list of “under-performing” schools. The academic achievement of a large number of students has been shown to decline from fourth to eighth to tenth grade, and the school’s district has instituted summer tutorials for ninth and tenth grade students to help them pass the tenth-grade exit exam and receive diplomas.

The school's district has also standardized its Social Studies curriculum and has mandated project-based coordination with Jeffords' English Department from sixth through tenth grade—with an associated increase in the amount of reading and writing that the students will be required to do. Frances knows from experience that the students in her advanced class will do fine, while the students in the lower three classes will struggle; and that a number of students will fall farther behind. In addition, nearly one-third of the students in each of her three lower classes struggle with reading—most due to learning disabilities, but some due to vision or hearing difficulties. Frances is worried that the new plan to combine English Language Arts understanding and expression with Social Studies content will place a high premium on her students' ability to use their curriculum materials efficiently and accurately.

What alternate format materials are available to help Frances' special education students gain access to the combined English Language Arts and Social Studies curriculum? How does she go about acquiring these materials?



Tenth Grade Rob Mackie coordinates the Special Education Resource Support Center at Dover Memorial High School (DMHS) in a large metropolitan area. The Center supports nearly 180 students with learning challenges ranging from sensory and physical disabilities to learning disabilities and AD to students with short-term medical needs requiring instructional accommodations. When the Center was first established in the early 1980's it functioned as a "resource room" where many students with special needs received the majority of their instruction. In the period of the mid-1990's the Center transitioned into an academic support hub as inclusion took hold, and added assistive technology (AT) support as such hardware and software became more prevalent.

Since 2002, the Center has been increasingly called upon to provide or acquire alternate format versions of core print textbooks. Center staff, who once tutored students, proctored exams, or trained other instructional staff on supported reading software are now occupied with digitizing textbooks and related instructional materials. The Center routinely retro-fits print materials into e-text, audio, and large print, and facilitates the acquisition of braille files. As word of the Center's capabilities and its willingness to create alternate format versions spread, more DMHS faculty encouraged students who struggled with print to take advantage of the service.

While Rob readily acknowledges the need for accessible, alternate format materials for students with disabilities, he is frustrated by the growing shift in the Center's work. He is concerned that if other solutions don't arise to fill the gap, the Center will ultimately be transformed into a materials production facility, and that the remediation, organization, and scheduling support and co-teaching that he and his staff are trained for will significantly diminish.

What resources exist to help the Special Education Resource Support Center at Dover Memorial High School return to its instructional focus while simultaneously assuring that students who need accessible, alternate format materials receive them in a timely manner?

III. Texts That Teach—A Promise for the Future

Remediation and Accommodation

During the past fifteen years, the focus of Special Education has expanded from its previous emphasis on remediation to include a parallel emphasis on accommodation: the provision of alternate strategies, approaches, materials, and settings that help facilitate and sustain the academic achievement of students with learning needs, especially those with disabilities. While Special Education in the 1970's predominantly concentrated on diagnosis and remediation—identify the problem and correct it—a number of practitioners and researchers expressed concern that some circumstances (blindness, for example) were not “correctable,” regardless of how much remediation was available. That concern evolved into an initially subtle shift in Special Education—identify the problem and address it. That slight modification in emphasis has, twenty years later, resulted in a seismic shift in orientation. Even the term “accessible” is now contextualized in relation to disability: accessible stores, mass transit, web sites, classrooms, software—textbooks.

Universal Design

This change in society's perspective coincided with civil rights legislation that led to the Americans with Disabilities Act (ADA) and with the “Universal Design” movement in architecture—not “one size fits all,” but precisely the opposite: multiple ways of getting in, out, and around built environments, so that regardless of whether an individual could see, hear, walk, touch, read, or speak, appropriate alternatives had to be devised and provided. These alternatives enable an individual, without the capacity to do what others might be able to do, to experience an environment equitably. Not surprisingly, the concept of Universal Design has expanded out of the bricks and mortar of physical space into the very curriculum itself.

Universal Design for Learning

In the early 1990's CAST (The Center for Applied Special Technology) extended the concept of Universal Design to address inherent barriers that exist in traditional instructional resources and approaches. Universal Design for Learning or UDL was the phrase chosen to define this extension in order to reflect the unique characteristics of the education enterprise. Intrinsic to the concept of Universal Design for Learning is the acknowledgement that the purpose of education involves the presentation of challenges of successively increasing complexity, and that the “ease of use” orientation of the architecturally-based Universal Design movement was not appropriate to simply graft onto instructional circumstances. Instead, Universal Design for Learning seeks to maintain high learning expectations, including their associated challenges, while simultaneously decreasing the barriers that exist in all aspects of the traditional curriculum—goals, methods, materials, and assessment—through the application of three guiding principles.

Even though the three principles of Universal Design for Learning—multiple representations of information, multiple means of expression, multiple means of engagement—provide approximate benchmarks for each of the four components of the curriculum, they have been most often referenced with regard to instructional materials, and often (mistakenly) equated with accessibility. While accessibility is an essential prerequisite of UDL-oriented curriculum materials, it is important to distinguish between access to information and access to learning. Accessible materials facilitate access to information, and UDL facilitates access to learning.

This Guide emphasizes accessible materials—how to identify, locate, and acquire them for classroom use. Far from being the end goal, however, the increased availability of accessible instructional materials is, in fact, the first step towards Universal Design for Learning. With increased requirements and demand for accessible learning materials, materials that can be used by a wide array of students without retro-fitting (especially those with disabilities), consumers will increase the visibility of need, and, hopefully, producers will respond. Once that transition occurs, consumers and producers alike will discover that the very flexibility that facilitates access also contains the potential for increasing student achievement in previously unavailable ways.

The Importance of Digital Materials

The majority of this potential of increasing student access lies in the capabilities of digital media. Its inherent flexibility, the ease with which digital media (text, audio, video, images, tactile rendering, etc.) can be transformed from one media type to another, makes it the preferred foundational format. While not all student-ready versions of print instructional materials referenced in this Guide are themselves digital, they are all created from a digital source. This is important to understand while reviewing the solutions offered in the following section.

IV. Solutions for the Classroom

The solutions presented in this section of the Guide comprise the essence of the Guide itself: an exploration of existing and emerging best practices designed to increase the availability of accessible, alternate format instructional materials in the classroom. Sub-parts of this section are categorized according to file format: braille, audio, e-text, and large print. The purpose of this categorization is to facilitate the location of specific solutions based on immediate need, and these needs are often dictated by the necessity of seeking materials for one or more students with specific and challenging print disabilities.

Braille

The timely location and acquisition of braille versions of print instructional materials continues to be one of the more significant challenges in addressing the needs of students with visual impairments who are braille readers. Despite the existence of a number of local, regional, and national transcription organizations and repositories, locating high-quality braille files and providing them to students at the same time that print versions of the same material are made available is still unpredictable and is often time-consuming and costly.

Existing Solutions

National Library Service (www.loc.gov/nls) In the 1930's, the [Pratt/Smoot Act](#)¹ directed the Library of Congress to work with regional and local libraries to catalog, maintain, and facilitate the distribution of books for the blind; this charge resulted in the National Library Service for the Blind and Physically Handicapped (NLS).² The inauguration of this service created the framework of a nationally-coordinated solution for the provision of alternate format materials.

¹ Perl, E. S. (2002). *Federal and state legislation regarding accessible instructional materials*. Wakefield, MA: National Center on Accessing the General Curriculum (NCAC). Retrieved 7/25/06 from http://www.cast.org/publications/ncac/ncac_policy.html#report3.

² Library of Congress, National Library Service. (2006). *NLS: That all may read*. Retrieved 7/25/06 from http://www.loc.gov/nls/about_history.html.

NLS functions as a clearinghouse for the subsidized distribution of braille, recorded books and magazines, and playback equipment to 57 regional and 86 sub-regional libraries. The [National Library Service Reference Directories](#)^{HL1} web page provides an extensive array of braille-related resources.



Membership

The National Library Service provides braille and audio versions of print works to visually impaired and physically disabled patrons who meet [eligibility requirements](#).^{HL2}

American Printing House for the Blind (www.aph.org) Since the late 1800's, the American Printing House for the Blind, or APH, has received funding from the federal government to provide braille versions of print materials. In particular, APH is responsible for providing specialized materials free-of-charge to eligible students in educational settings with annual support from the [Federal Quota Program](#).^{HL3} The federal quota program divides an annual appropriation from Congress by the number of qualified Blind/Low Vision students in educational settings and apportions those funds for the purchase of specialized-format materials. Although the mechanism by which each state provides accessible, alternate format materials (including braille) varies and is dependent upon a number of factors,³ the national network of [Instructional Resource Centers for the Blind and Visually Impaired](#)^{HL4} provides a crucial arrangement of state, regional, and local expertise.

In addition to providing oversight of the Federal Quota Program, APH also manages the [Louis database](#),^{HL5} an online catalog of approximately 170,000 titles available in braille, large print, e-text, and audio from nearly 200 contributing agencies. The purpose of Louis is to minimize duplication of effort and to facilitate the acquisition of specialized-format materials. One aspect of the Louis database to keep in mind is that many of the listings are for specialized-format materials produced by sources other than APH, and, as a consequence, these resources may not be eligible for purchase using federal quota funds.



Membership

Access to materials in braille (and other formats) produced by the American Printing House for the Blind is limited to [registered users](#)^{HL6}. Contact the [Accessible Textbooks department \(ATIC\)](#)^{HL7} of APH for specific information on obtaining textbooks in braille and other formats.

Other Braille Resources In addition to the services and materials available through APH and Instructional Resource Centers, numerous not-for-profit organizations ([National Braille Press](#)^{HL8}, [Braille Institute of North America](#)^{HL9}) and for-profit organizations ([gh](#)^{HL10}, [TechAdapt](#)^{HL11}) provide transcription (braille creation) services. For an extensive list of transcription agencies, see the [Braille Transcription Resources List](#)^{HL12} published by the National Federation for the

³ Nail-Chiwetalu, B. (2000). *Guidelines for accessing alternative format educational materials*. Retrieved 7/25/06 from <http://www.loc.gov/nls/guidelines.htm>.

Blind. For an extensive list of agencies and organizations providing or producing braille, see the [Sources of Braille Children’s Books and Magazines](#)^{HL13} resource developed by the American Foundation for the Blind. APH also provides a searchable database of [Alternative Media Producers](#)^{HL14} as a resource for locating producers of specialized-format materials.

How effective are these solutions? In 2000 and again in 2004 the American Foundation for the Blind completed a survey of states’ use of both Braille and Large Print. The 2004 survey, [Trends in Braille and Large-Print Production in the United States: 2000–2004](#)^{4HL15} detailed progress—an increase in the use of electronic files for braille, for example—but also continuing frustrations. The survey noted that from 2000 to 2004, requests for braille increased by 26% and information from states indicated that, on average, approximately 20% of braille versions of textbooks could be expected to arrive well after the start of school. This percentage was noted to be compiled from the total states reporting, however, and that actual delays in the receipt of braille ranged from 4% to 65%. Most significantly, respondents expressed the same desire in 2004 as they had in 2000 for a more efficient and responsive system—including requests for a consistent file format, increased accuracy of source files, and centralized distribution.

Emerging Solutions

During the past ten years the movement to harness the flexible power of digital technology to support the rapid, accurate, and efficient creation of braille has resulted in the inclusion of alternate format mandates for State Education Agencies (SEAs) and Local Education Agencies (LEAs) in the Individuals with Disabilities Education Improvement Act of 2004. The [National Instructional Materials Accessibility Standard \(NIMAS\)](#)^{HL16} and the associated [National Instructional Materials Access Center \(NIMAC\)](#)^{HL17} identify the structure and content of digital source files designed to facilitate the creation of accessible, student-ready versions (braille, audio, e-text) of instructional materials and establishes a national repository for the storage, cataloging, and distribution of those files. It is anticipated that this move towards standardization and centralized distribution will significantly accelerate the creation and delivery to students and schools of high-quality braille materials.

The leading software developers who produce braille translation software (for converting e-text into braille code), [Duxbury Systems, Inc.](#)^{HL18} (producers of the *Duxbury Braille Translator* and *MegaDots*), and [Computer Applications Specialties Company](#)^{HL19} (producers of *Braille2000*) have created either the capability of importing NIMAS-conformant source files into their software programs and translating them into braille, or are in the process of doing so. In addition, conversion agencies and companies that create braille-format materials are also moving rapidly to incorporate compliance with the NIMAS. A list of these conversion companies is available at the NIMAS web site: http://nimas.cast.org/about/resources/conversion_services.html.

As of this writing, 49 of 50 states have indicated their intention to coordinate with the NIMAC repository by 1) requiring curriculum publishers to submit NIMAS filessets to the NIMAC as part of their textbook procurement contract and 2) use NIMAC-housed NIMAS filessets as the basis for the subsequent creation of student-ready versions of accessible materials. The majority of states will authorize five agencies or organizations to download NIMAS files from the NIMAC repository and create student-ready versions (including braille). Two national

⁴ Emerson, R.W., Corn, A., & Siller, M.A. (March 2006). Trends in braille and large print production in the United States: 2000 – 2004. *Journal of Visual Impairment and Blindness*, 100 (3).

organizations that are re-aligning their production systems to work with NIMAS source files in the creation of braille are [American Printing House for the Blind](#)^{HL20} (APH) and [Bookshare.org](#).^{HL21}

In order to meet the anticipated increase in the availability of high-quality source files, there is a concerted effort being made by the American Foundation for the Blind and other national advocacy organizations to equip braille transcribers with the skills and technology required to effectively use NIMAS files to create braille. In addition, AFB has published a checklist, [Coordinating Instructional Materials Accessibility](#)^{HL22} to help state and regional education leaders implement efficient practices designed to meet the IDEA 2004 mandates.

→ **How to Locate: Braille**



IEP team members, classroom teachers, and others who need to acquire braille versions of print instructional materials should be aware of the following requirements and resources:



NOTE: IDEA '97 makes braille the expected medium of instruction for blind students.

- Work with a Teacher of the Visually Impaired (TVI) or a representative from your state or regional [Instructional Resource Center](#)^{HL23} to locate braille versions of instructional materials.
- Consult the [Louis database](#)^{HL24} to determine if a braille version of the materials you need in an alternate format already exists.
- Consult the NIMAC database (<http://www.nimac.us/>). Opened in December, 2006, the NIMAC (National Instructional Materials Access Center) provides public information about the availability of NIMAS filesets for a specific publication or series, and information about accessible, alternate format, student-ready versions that may be available; where they are located, and how to obtain them.
- Contact your state's Department of Special Education Services or State Agency for Assistive Technology to determine which additional agencies, organizations, or consortia have been identified as authorized users of the National Instructional Materials Access Center (NIMAC). One or more of the authorized users should be capable of assisting you in locating braille versions of instructional materials.
- While embossed (printed) braille is still the most common braille format, computer-based [Refreshable Braille](#)^{HL25} offers a much wider range of flexibility. With the expected increase in NIMAS-formatted digital source files, digital alternatives are also expected to expand—for example, the [gh Player 2.1](#)^{HL26} can open and display NIMAS source files as Digital Talking Books (DTBs), and provides direct support for Refreshable Braille Displays.

- Braille-ready files can be efficiently produced from NIMAS source files. This means that these “e-text” versions of braille files will find their way into classrooms. This will facilitate the selective creation of embossed braille by teachers of the visually impaired (most of whom are sighted) and increase the potential for an “emboss on demand” approach to materials generation for those students who do not use refreshable braille displays.

Audio

Audio versions of print materials emerged quickly with the advent of audio recording technology. The benefits of capturing and playing back the expressive qualities of the human voice, particularly for individuals with visual impairments, were immediately obvious. In the past ten years, analog audio recording (records, cassette tapes, etc.)—which are recorded as one extended file—have been supplanted by digital audio formats. Digital audio is a way to recreate analog sound waves in discreet, individual sound samples: the more samples that make up the digital rendition of the sound, the more accurate the recording. In addition, since the digital file is in effect made up of hundreds of little digital samples, the computer can use these divisions to support accurate navigation (“Go to page 153”), bookmarking, and other navigation features that are difficult if not impossible to achieve with analog files.

Digital audio files with embedded navigation supports are known as Digital Talking Books (DTBs) or [DAISY](#)^{HL27} books. DAISY, an international standard, has been adopted by nearly all producers of specialized audio recordings for the visually impaired, including the National Library Service, Recording for the Blind & Dyslexic, American Foundation for the Blind, National Federation for the Blind, Bookshare.org, and many other not-for-profit and for-profit producers.

Existing Solutions

National Library Service (www.loc.gov/nls) The history of “talking books” mirrors closely the evolution of braille. Recorded audio books became technologically and legally feasible in the early 1930’s, and most agencies and organizations involved in the creation of printed braille materials for the blind simultaneously began work on audio formats. The National Library Service of the Library of Congress began distributing talking books, as did the American Foundation for the Blind. During the past ten years, both the NLS and AFB Press have transitioned their audio formats from analog to digital, increasingly delivering the latter on CD-ROM.



Membership

The National Library Service provides audio versions of print works to visually impaired and physically disabled patrons who meet [eligibility requirements](#)^{HL28}.

Recording for the Blind and Dyslexic (www.rfbd.org) Recording for the Blind incorporated in 1951 to record textbooks for the blind and visually-impaired, and in 1995 added “and Dyslexic” to their name in acknowledgement of a broader awareness of “print disability.” Today, RFB&D serves over 141,000 members, nearly 70% of whom have reading disabilities.⁵

Once synonymous with specialized four-track recorded books on cassette tape, RFB&D now distributes only Digital Talking Books (AudioPlus) on CD-ROM. AudioPlus books are audio-only human voice recordings that conform to DAISY navigation requirements. These products require specialized hardware—desktop or portable “players”—or AudioPlus-compatible computer software for playback. RFB&D operates on a fee-based individual or institutional subscription basis, and sells playback hardware and software as commercial products.

RFB&D makes every effort to create high-quality recorded human audio versions of print instructional materials. The very nature of the recording process itself is time-consuming, however, and RFB&D’s group of nearly 7,000 volunteer readers work from a number of digital recording studios around the country to fulfill subscriber requests. The earlier these readers have access to a print work, the more rapidly AudioPlus versions can be created.



Membership

Recording for the Blind and Dyslexic offers both institutional and individual memberships. [Eligibility](#)^{HL29} is based on documentation of a disability which makes the use of standard print materials difficult or impossible.

American Foundation for the Blind, Talking Book Productions

(www.talkingbookproductions.com) This division of AFB produces audio books for the National Library Service and in partnership with commercial publishers. AFB uses its expertise in Digital Talking Book development primarily for production purposes. For more information, see <http://www.afb.org/Section.asp?SectionID=37>.



Membership

AFB’s [Talking Book Production Services](#)^{HL30} are designed for authors, publishers, and producers of audio books.

Talking Tapes (www.talkingtapes.org) is a national, not-for-profit organization that provides between 250 to 600 new titles yearly on audio cassette. Talking Tapes makes every effort to respond to member requests for audio versions of textbooks using its collection of volunteer readers, and offers both school and individual student memberships. It rents its cassettes on a per-tape annual basis and its mission is to support individuals with a wide range of print disabilities.

⁵ Recording for the Blind and Dyslexic. *The RFB&D story*. Retrieved 7/26/2006 from <http://www.rfbd.org/about.htm>.



Membership

[Talking Tapes](#)' services ^{HL31} are available to anyone with a certified disability meeting IDEA, Rehabilitation Act, or ADA criteria. Institutional and individual memberships are available.

Other Sources of Audio Books In addition to the organizations listed above, the Blind Reader's Page contains an extensive resource list of [Audio Books and Magazines](#) ^{HL32} sources. One interesting general purpose audio book site is LibriVox (www.librivox.org), a collection of audio files and podcasts of public domain books. For books out of copyright (95+ years), this is a nice resource for audio versions of classic literature and primary source materials. Finally, the world of commercial audio books has expanded exponentially with the growth of the Internet and digital downloading. Audible (www.audible.com), Audio Editions (www.audioeditions.com/), and Books on Tape (www.booksontape.com)—which, contrary to what its name implies, also has audio books on CD and for download—are representative commercial companies offering audio books.

Emerging Solutions

The growing prevalence of web-based MP3 audio available via either streaming (real-time feed) or direct download (podcasts, audio files, etc.) is likely to continue to increase. Due in no small part to the widespread popularity of Apple's iPod and other portable MP3 players, it's only a matter of time before support for audio books becomes standard on these devices. The online magazine *Playlist* offers a nice overview of the state of this technology in the article "[Heard Any Good Books Lately?](#)" ^{HL33}. As yet, none of these initial solutions offers the sophisticated navigation afforded by the Digital Talking Book format, but there's no reason that DTBs couldn't be supported by future pocket players.



Hot Tip Four-track analog cassettes are or have been phased out of production by most producers of specialized audio formats for print-disabled students.

The steadily-increasing adoption of the Digital Talking Book (DAISY) format by both commercial and non-commercial production organizations will accelerate the availability of DTB's in the near future. While at the time of this writing only a few commercial "supported reading applications" support the most recent DAISY3 format, it is anticipated that most of these products will do so in the very near future. Some players even support reading rate changes of human voice, further enhanced with synchronized highlighting. For an overview of software-based Digital Talking Book readers, see [DTB software](#) ^{HL34} in the *Comparison chart of e-book and digital talking book (DTB) hardware and software* from the Beyond the Text Project of the National Center on Accessible Media (NCAM) at WGBH.

→ **How to Locate: Audio**



Educators, instructional specialists, and others who need digital audio (recorded human voice) editions of print instructional materials should be aware of the following references and resources:



NOTE: Audio versions of print instructional materials are considered “specialized formats” under section 121(d)(3) of title 17, United States Code (the “Chafee” exemption to copyright).

- Search RFB&D’s [catalogue](#)^{HL35} to determine if an AudioPlus version of a book already exists.



- Consult the NIMAC database (<http://www.nimac.us/>). Opened in December, 2006, the NIMAC (National Instructional Materials Access Center) provides public information about the availability of NIMAS filesets for a specific publication or series, and information about accessible, alternate format, student-ready versions that may be available; where they are located, and how to obtain them.
- Producers of digital audio resources for students with print disabilities (NLS, RFB&D, Talking Tapes, etc.) offer both institutional and individual memberships for obtaining their products.
- In order to obtain resources from these organizations, a student must be “qualified” (*see* The Chafee Amendment *below*) by a competent authority as unable to read print as the result of a physically-based disability.
- Contact your state’s Department of Special Education Services or State Agency for Assistive Technology to determine which additional agencies, organizations, or consortia have been identified as authorized users of the National Instructional Materials Access Center (NIMAC). One or more of the authorized users should be capable of producing audio versions of instructional materials.
- The DAISY audio format, also referred to as a Digital Talking Book or DTB, is the preferred choice for digital audio versions of print works. DTBs provide print-disabled students with control over and interactivity with audio versions similar to that provided to print users. Core DTB audio files are MP3 format, but are augmented with navigational and structural supports.

e-text

During the past thirty years, and concurrent with the increased infusion of computers and digital media into day-to-day living, electronic text or e-text has become a preferred format for many students and an essential format for most students with print disabilities. Initially, the key characteristic of e-text that made its use so compelling was its transformability: e-text could be re-sized; highlighted; displayed in a variety of fonts, colors, and styles; easily rendered from one language to another; transformed into synthetic speech or attached as an equivalent to other

digital media types (e-text descriptions of images, for example). The malleability of e-text was quickly recognized and exploited by early developers of assistive technologies, who saw the potential of this format to expand information access opportunities to a wide range of individuals for whom print was a barrier.

During the past ten years advances in the development of e-text have come to incorporate the concept of separating content from the way that content is presented. By “marking up” or “tagging” e-text—in a manner similar to the way an article of clothing is tagged for price, material of construction, size, cleaning instructions, etc.—tags can be applied to e-text content and these tags greatly enhance that content’s subsequent presentation and use. Text can be tagged for structure: for example, headings, body text, call-out boxes, page numbers, etc. can be identified, and these elements can then be accessed by software or hardware-based e-text “readers” to provide accurate and instantaneous navigation through the content. e-text can also be tagged for meaning: for example, key questions, glossary terms, summary information, etc. can be distinguished, and this level of tagging provides information about elements of content, helping to eliminate ambiguity and to increase understanding. In addition, e-text can be tagged for *learning*.

Based on the principles of [Universal Design for Learning](#),^{HL36} CAST (the Center for Applied Special Technology) and other organizations are exploring how the applications of tags specifically designed to increase representation, expression, and engagement can be embedded into e-text content. Using these learning tags, subsequent presentation of curricular resources can be customized to meet the needs of struggling students. For example, a student with insufficient background knowledge of a particular topic could be provided with that information, in his or her preferred format and in his or her preferred manner, on request. Similarly, a teacher might choose to customize the presentation of new information to meet the diverse learning needs of students. Marking up or tagging text for learning makes this type of well-targeted and individualized presentation of content possible.

Existing Solutions

At the present time, e-text versions of print instructional materials may be obtained from four primary sources: publishers, organizations producing e-text for print-disabled students, the Internet, or from a printed work via scanning.

Publisher & Commercial Sources While the number of curriculum publishers offering accessible e-text versions of their print materials continues to be limited, the number is increasing. All stakeholders interested in the alternate format initiative, including publishers, disability advocates, the United States Department of Education, assistive technology vendors, and educators believe that, ultimately, the ‘market model’ for accessible alternate format materials is the best solution. A future is envisioned where these alternate format curriculum materials are offered for sale alongside their print counterparts, and, in the majority of envisioned scenarios, these versions are e-text-based.

For a sampling of web sites that offer e-texts for sale, visit Candida Martinelli’s [Simple-to-follow instructions for the computer novice on how to download E-Texts and E-Books to your PC](#)^{HL37} web site. In addition to detailing the process of locating, downloading, and using e-texts, the site

also has a listing of [Stores and Sites](#)^{HL38} selling e-text versions of print works. Keep in mind that this site is not specifically educator-oriented, nor does it address the accessibility of e-book formats, but it does provide a very useful overview of e-texts available from commercial sites and provides instructions for obtaining them.

For other publisher-specific inquiries, the Association of American Publishers has created a list of [Publishers' Permissions/E-Text Contacts](#).^{HL39} While specifically targeted to the higher education community, this list of major curriculum publishers and their supplemental affiliates and imprints can provide an invaluable starting point for a direct publisher inquiry. The NIMAS Development and Technical Assistance centers web site also offers a [Mainstream Sources of Digital Electronic Text](#)^{HL40} listing, and these sites usually provide e-texts for sale.

Specialized Sources of e-text for Print-Disabled Students Organizations that operate within the constraints of the Chafee copyright exemption offer alternate format e-text versions of instructional materials for qualifying students. Both [Bookshare.org](#)^{HL41} and the [Accessible Book Collection](#)^{HL42} offer e-text files, although Bookshare.org has a much more extensive inventory (including textbooks) and makes student-ready versions available in DAISY or DTB format. Bookshare.org receives its holdings from volunteers across the country who digitize (scan) books, and presently has over 1,000 textbooks in its repository.



Membership

e-text (DAISY books) are provided by Bookshare.org to [eligible students with print disabilities](#).^{HL43} Both institutional and individual memberships are available.



Hot Tip Internet e-text The National Library Service has published a resource, [Selected Sources for Electronic Texts 2005](#),^{HL44} combining three categories of resources: commercial vendors, specialized repositories, and public domain e-text libraries. The University of Texas at Austin maintains an extensive listing of Internet e-text sites, [Electronic Books](#),^{HL45} that is kept up-to-date and comprehensive. In general, most print publications emerge from copyright constraints after 95 years, and, as these books enter the public domain they are often digitized and posted online for download. While these are not likely sources for obtaining textbooks, they are appropriate for locating primary source materials.

Scanned e-text Economical, efficient, and accurate desktop computer technology has made scanners and optical character recognition (OCR) software commonplace in many of today's schools. Special education personnel often choose to retro-fit curriculum materials locally rather than incur a delay in providing appropriate materials to print-disabled students, usually by scanning. While this approach is pragmatic and, in most cases, effective, it also results in extensive duplication of effort. Some states, notably Kentucky, have created statewide repositories for these scanned texts. The [Kentucky Accessible Materials Consortium](#)^{HL46} is a model of effective, copyright-compliant practice that makes local efforts available to all of Kentucky's 1,100 schools. Texas and California also have extensive statewide alternative-format acquisition and distribution networks. In the majority of states, however, the scanning of textbooks and related print instructional materials exists as a local enterprise.

For those interested in exploring the in's and out's of scanning a book, Kelly Pierce's [How to Effectively Scan a Book](#)^{HL47} offers some very helpful insights and guidance. Despite its limitations, scanning a book may be the most effective method of providing accessible instructional materials to print-disabled students, at least for the immediate future.

A Note About e-text Formats and Accessibility Bear in mind that simply because a text is available in a digital format does not ensure that it is accessible. A PDF document may indeed be digital but it may also be made up of image files of printed pages, which—for accessibility purposes—is not much better than a printed page itself. In general, in order for an e-text page to be read aloud via synthetic speech, text on a page must be selectable (i.e., text can be highlighted, copied, pasted). The majority of supported reading software uses a computer's copy/paste functionality to “read” text aloud. There are, however, a few notable exceptions to this rule.

Both [Adobe Acrobat Reader](#)^{HL48} and [Microsoft Reader](#)^{HL49} can read aloud (and otherwise manipulate) their respective proprietary file formats, yet the actual content itself may be “locked” and users may not be able to copy it. Similarly, some commercial ‘electronic book’ products provide digital text with associated text-to-speech capabilities but also block users from copying text.

The key when creating e-text versions of instructional materials via scanning is to save the content in the most flexible and accessible format possible. For example, HTML (web pages) can be read aloud by most supported reading software programs and can be displayed on almost any computer screen. The second most important consideration is to know what supported reading software the student will be using and to create file formats that can be read by that software. For an extensive listing of supported reading software and hardware see the comparisons at [Beyond the Text](#)^{HL50} from the National Center on Accessible Media (NCAM).

Emerging Solutions

NIMAS/NIMAC The National Instructional Materials Accessibility Standard (NIMAS) and the associated National Instructional Materials Accessibility Center (NIMAC) represent an effort to systematize the file format used for the creation of specialized versions of print materials, including e-text versions. On August 14, 2006, the National Instructional Materials Accessibility Standard (NIMAS) was published in the Federal Register at the Library of Congress by the U. S. Office of Special Education (OSEP). With this official posting of the NIMAS, accessible instructional materials are now part of the Individuals with Disabilities Education Improvement Act of 2004 (IDEA):

“The purpose of the NIMAS is to help increase the availability and timely delivery of print instructional materials in accessible formats to blind or other persons with print disabilities in elementary schools and secondary schools” (34 CFR Part 300, National Instructional Materials Accessibility Standard; Final Rule, FR Doc. 06–6340 Filed 7-18-06).

With respect to coordinating efforts with the NIMAC, a majority of states have elected to do so as of December, 2006. This means that states and local districts, in their curriculum materials procurement contracts with publishers, will require publishers to provide NIMAS filesets of contracted print materials to the NIMAC. The NIMAC will then make these filesets available to

qualified developers of specialized-format materials (braille, audio, e-text, large print)—those developers being designated by states. The NIMAS/NIMAC initiative increases the availability of content for the creation of e-text and helps to guarantee that the content itself will be accurate and of high quality.

Concurrent with the NIMAS/NIMAC initiative is the renewed expectation placed on state and local education systems to provide accessible instructional materials in a timely manner to any student who requires them. While some of these materials will come from the NIMAC, some of them will not, and for this reason Congress included in the IDEA 2004 re-authorization a section that indicates that states and local education agencies can meet accessible materials requirements of the law through the purchase of accessible instructional materials directly from publishers.

DAISY Books Previously referenced in the section on audio, DAISY books or Digital Talking Books (DTBs) offer enormous potential for all students with print disabilities. As detailed on the [DAISY web site](#),^{HL51} DAISY-compliant DTBs are designed to be available in six categories:

1. Full audio with title element only: This is a DTB without navigable structure. Only the title of the DTB is available as text—the actual content is presented as linear audio only. Direct access to points within the DTB is not possible.
2. Full audio with Navigation Center (NCC or NCX) only: This is a DTB with structure. The structure is two-dimensional, providing both sequential and hierarchical navigation. In many cases, the structure in this type of Daisy DTB resembles the table of contents of its print source. Some of these productions provide page navigation.
3. Full audio with Navigation Center and partial text: This is a DTB with structure as described above as well as some additional text. Additional text components may occur where keyword searching and direct access to the text would be beneficial, e.g., index, glossary, etc. Audio and existing text components are synchronized.
4. Full audio and full text: This is a DTB with structure and complete text and audio. Audio and full text are synchronized. This type of production may be used to generate braille.
5. Full text and some audio: This is a DTB with structure, complete text, and limited audio. This type of DTB could be used for a dictionary where only pronunciations are provided in audio form. As in previous categories, audio and text are linked.
6. Text and no audio: This is a DTB containing a Navigation Center and marked up/structured electronic text only. No audio is present. This file may be used for the production of braille versions.

At the present time, Recording for the Blind and Dyslexic produces category 2 DTBs, while Bookshare.org creates category 6 DTBs. Other national resources (National Library Service, American Printing House for the Blind, American Foundation for the Blind) have also adopted variations of the DAISY/DTB format.



Hot Tip An important factor when considering the acquisition of DTBs is the availability of supported reading software that can read the DTB format. Make certain that the software available to the student supports the DAISY format. For a listing of

supported reading software that supports the DAISY format, check the [Comparison chart of e-book and digital talking book \(DTB\) hardware and software](#)^{HL52} from the Beyond the Text Project at the National Center on Accessible Media, or contact the software product manufacturer directly.

→ **How to Locate: e-text**



Educators, instructional specialists, and others who need e-text editions of print instructional materials should be aware of the following references and resources:



NOTE: e-text versions of print instructional materials are considered “specialized formats” under section 121(d)(3) of title 17, United States Code (the “Chafee” exemption to copyright).



Accessible e-text versions of print instructional materials may be available for sale directly from a publisher. Check with a publisher’s web site, sales representative, or contact designated to respond to instructional materials requests (*see* [Publishers' Permissions/e-text Contacts](#)^{HL53}).



Consult the NIMAC database (<http://www.nimac.us/>). Opened in December, 2006, the NIMAC (National Instructional Materials Access Center) provides public information about the availability of NIMAS file sets for a specific publication or series, and information about accessible, alternate format, student-ready versions that may be available; where they are located, and how to obtain them.

Contact your state’s Department of Special Education to determine which state or regional agencies have been identified as “coordinating entities” eligible to receive NIMAS filesets from the NIMAC and to transform them into accessible, student-ready versions.

Contact your state agency for assistive technology to determine which state or regional agencies have been identified as “coordinating entities” eligible to receive NIMAS file sets from the NIMAC and transform them into accessible, student-ready versions.

Large Print

Prior to IDEA 2004, large print was not considered a “specialized format” under the Chafee copyright exemption. Within the NIMAS/NIMAC components of IDEA 2004, Part B, Congress amended the Chafee exemption by adding:

(B) with respect to print instructional materials, includes large print formats when such materials are distributed exclusively for use by blind or other persons with disabilities.

This addition means that large print is now considered a specialized format and may be created and distributed in the same manner as braille, audio, and e-text.

Existing Solutions

National Library Service In 2005, NLS produced an extensive resource for parties interested in exploring large print as a reading resource or in obtaining large print materials. Individuals who qualify for materials provided by NLS also qualify for large print resources. [Reading Materials in Large Print: A Resource Guide](#)^{HL54} offers an overview of the levels of large print most commonly available, resources for obtaining large print versions of print works, an extensive bibliography relating to large print research, and selected Internet resources.

American Printing House APH maintains the [Louis database](#),^{HL55} which lists large print resources from over 180 national agencies.

American Foundation for the Blind AFB's listing of the state and regional [Instructional Resource Centers for the Blind and Visually Impaired](#)^{HL56} provides a comprehensive listing and contact information for local low-vision resources.

Emerging Solutions

In much the same way that the NIMAS/NIMAC initiative will expand the timely availability of braille, audio, and e-text resources, it will also increase both the quality and the quantity of large-print formats for print-disabled students. One important aspect of the NIMAS technical specification is the inclusion of images: graphical elements that exist in a print work must be included in that work's NIMAS fileset submitted by publishers to the NIMAC. This means that it is possible to create subsequent large print versions with images from these NIMAS files.

The NIMAS fileset requirements specify that image files are to be included as [Scaled Vector Graphics](#)^{HL57} (SVG) images, [Joint Photographic Experts Group](#)^{HL58} (JPEG) images, or as [Portable Network Graphic](#)^{HL59} (PNG) images, in that order of preference. If images are to be provided in JPEG or PNG format, they must be rendered at 300 dpi (dots per inch) which will allow the image to be enlarged without significant loss of resolution.

→ *How to Locate: Large Print*

Educators, instructional specialists, and others who need large print editions of print instructional materials should be aware of the following references and resources:



NOTE: Large print versions of print instructional materials are considered “specialized formats” under the IDEA 2004 amendment to Section 121(d)(3) of title 17, United States Code (the “Chafee” exemption to copyright).



- Consult the NIMAC database (<http://www.nimac.us/>). Opened in December, 2006, the NIMAC (National Instructional Materials Access Center) provides public information about the availability of NIMAS file sets for a specific publication or series, and information about accessible,

alternate format, student-ready versions that may be available; where they are located, and how to obtain them.



- Contact your state’s Department of Special Education to determine which state or regional agencies have been identified as “coordinating entities” eligible to receive NIMAS filesets from the NIMAC and transform them into accessible, student-ready versions.

- Contact your state agency for assistive technology to determine which state or regional agencies have been identified as “coordinating entities” eligible to receive NIMAS file sets from the NIMAC and transform them into accessible, student-ready versions.

V. Systems of Support

State-Level Procedures

IDEA 2004 re-affirms the responsibility of State Education Agencies (SEAs) to provide accessible instructional materials to print-disabled students in a timely manner. Beyond special education law, however, precedent for the provision of accessible versions of instructional materials exists within the expectations of civil rights legislation: Section 504 of the Rehabilitation Act of 1973, and the Americans with Disabilities Act (ADA).

The application of the civil rights “equal access” provisions to K–12 educational systems was clearly stated by the Office of Civil Rights (OCR), United States Department of Justice, in a letter to Los Rios Community College District, OCR Case No. 09932214, 1994:

OCR has the responsibility under Section 504 of the Rehabilitation Act of 1973, and its implementing regulation at 34 C.F.R. Part 104, to ensure that a recipient of Federal financial assistance through the Department does not discriminate against persons participating in its programs and activities, such as students, on the basis of disability. OCR also has jurisdiction as a designated agency under Title II of the Americans with Disabilities Act of 1990, and its implementing regulation at 28 C.F.R. Part 35, over complaints of disability discrimination filed against public educational entities, including public elementary and secondary systems and institutions.

In that same letter, the OCR also detailed the responsibility of the educational agency to provide alternate format materials:

“...the post-secondary public institution should be prepared to deliver in a reasonable and timely manner the printed materials relied upon in its educational program in all of the following mediums: auditory, tactile (Braille), and enlarged print...”

“... It should be noted that if the student with the visual impairment prefers, and the public entity is willing to provide, access through "E-text" (electronic text in a digital format read by computer), such method may be used in lieu of access through another medium.”

The following section provides an overview of suggested strategies that can be implemented by states to meet both the NIMAS mandate included in IDEA 2004 and to craft strategies for meeting the needs of print-disabled students who may not qualify for NIMAS/NIMAC-derived materials.

Coordination of Agencies

Special Education Because the accessible instructional materials mandates (including the NIMAS/NIMAC initiative) exist as a component of IDEA 2004, the primary responsibility for ensuring compliance rests with a state department or agency responsible for special education services. In order to facilitate this leadership role, the NIMAS Technical Assistance Center has created a planning document, [State Director of Special Education Suggested Responsibilities Regarding NIMAS & NIMAC](#).^{HL60} In 17 sequential steps, the NIMAS TA Center document combines items that are required by statute with voluntary steps that can be taken to ensure that statutory requirements are met.

Similarly, the American Foundation for the Blind (AFB) has created the [NIMAS Guidelines Checklist: A Self-Study Tool](#).^{HL61} to assist states and local education agencies in meeting the NIMAS mandate in IDEA 2004.

Included in the NIMAS/NIMAC section of IDEA 2004 is the expectation that state education agencies will coordinate with other state agencies responsible for assistive technology.

Assistive Technology As a part of the Assistive Technology Act of 1998 (as amended [P.L. 108-364]), agencies in each of the 50 states receive a modest level of funding to facilitate the dissemination of assistive technology research, resources, and referrals. In some states, the state education agency (SEA) itself funds assistive technology programs, while other states rely on a combination of state and federal funding. Closing the Gap maintains a listing of 59 [State Assistive Technology Programs](#).^{HL62} The National Assistive Technology Technical Assistance Partnership (NATTAP) provides a [State Contact List](#).^{HL63} of member state agencies, as does the [Association of Assistive Technology Act Programs](#) (ATAP).^{HL64} Both of these organizations seek to provide state leadership activities, technical assistance, and up-to-date information regarding assistive technology. In addition, the [Assistive Technology Industry Association](#) (ATIA)^{HL65} is the trade organization for assistive technology producers and vendors, and is actively engaged in facilitating the ongoing development of assistive technologies that will access and optimize accessible instructional materials. ATIA is also a resource for directing inquiries related to the availability of software and products designed to take advantage of alternate format materials.

Curriculum & Instruction Another critical component of state-level accessible materials coordination is the inclusion of state agencies or departments involved in the recommendation, selection, or authorization of use/purchase of textbooks and related instructional materials.

Textbook Adoption States Twenty states employ state adoption procedures that involve state-level textbook adoption committees. For a complete listing of these states, refer to the [National Association of State Textbook Administrators](#) (NASTA)^{HL66} or consult the resource provided by the Association of American Publishers, School Division: [ACTS and Related Textbook Organizations](#).^{HL67} In textbook adoption states, a State Textbook Administrator and a State

Textbook Adoption Committee provide an immediately identifiable and logical point of coordination for the state’s Special Education Department and the state’s assistive technology agency.

Open Territory States Thirty states are referred to as open territory states, locales where the state plays little if any regulatory role in the selection or procurement of textbooks. In these states, textbook purchases are left to regional- or district-level curriculum committees and/or local school boards.

In both textbook adoption and open territory states, a state’s Department of Special Education can play a crucial and supportive role by suggesting language in textbook adoption contracts that supports the acquisition of accessible, alternate format instructional materials for print-disabled students who qualify for NIMAS/NIMAC-derived materials and for those who do not. Suggested contract language for states and local education agencies (LEAs) who are coordinating with the National Instructional Materials Access Center (NIMAC) is available on the NIMAS web site: [Sample Language for Adoption Contracts and LEA Purchase Orders](#)^{HL68} (at bottom of page).

District-Level Procedures

Part B, Section 613 of IDEA 2004 also requires that each local education agency (LEA) provide assurances to the Secretary of Education regarding the timely provision of accessible, alternate format materials for students with identified print disabilities. With the exception of encouraging coordination with the state agency for assistive technology, the obligations for LEAs are identical to those required by states.

Coordination of Effort

Special Education Since the mandate for accessible instructional materials originates in Special Education Law, the Special Education Department at the LEA level has primary responsibility for coordinating NIMAS compliance efforts. In most LEAs, however, the Special Education Department is often not involved in the procurement of core instructional materials such as textbooks. In that circumstance, the Special Education Department should initiate communication with the local coordinator of curriculum and instruction or any department heads or administrators who oversee textbook purchasing. In addition, any local or regional agency that provides assistive technology support should also be involved.

A document prepared by the NIMAS centers for state directors of special education, [State Director of Special Education Suggested Responsibilities Regarding NIMAS & NIMAC](#),^{HL69} should provide resources for local directors as well. In particular, the ‘Sample Language for Adoption Contracts and LEA Purchase Orders’ section at the bottom of the posting’s web page provides useful guidance for including NIMAS-related language in contracts with curriculum publishers.

In addition to the mentioned [suggested contractual language](#)^{HL70} section, local special education departments are encouraged to consider adding language to IEPs to address students’ needs for accessible, alternate format materials. The NIMAS centers have published a page which addresses this suggestion: [Accessible Instructional Materials and the IEP](#).^{HL71} By including a consideration for alternate format materials in a student’s IEP, a local education agency

effectively empowers an IEP team with decision-making authority. This is felt to be appropriate and recommended since the IEP team is responsible for determining and implementing a student's educational plan.

Curriculum & Instruction Local departments of curriculum and instruction or other administrative personnel and department heads have not traditionally been involved in the provision of instructional materials for special education students. While the new IDEA 2004 requirements do not mandate the active participation of these customary textbook purchasers, implementing necessary assurances would be difficult if not impossible without their active involvement.

Further, LEA personnel need to be made aware of the civil rights expectations of Section 504 of the Rehabilitation Act and of the Americans with Disabilities Act (*see* Section 5, State-Level Procedures) with respect to accessible instructional materials. Finally, the Adequate Yearly Progress measurements of No Child Left Behind (NCLB) also require that the academic progress of students with disabilities be included in a school's and district's achievement statistics. For all these reasons, the purchase of core instructional materials must now take into account the needs of print-disabled students.

Assistive Technology Local departments or regional agencies that provide and support assistive technology services and equipment to schools also need to participate in the curriculum materials acquisition process. These are the personnel with the most expert knowledge of the software and hardware available to, and currently in use in, a district's schools. While these specialists may not need to be active participants in contractual negotiations with publishers, they do need to lend their expertise to the subsequent determination of how actual student-ready versions of these materials will be obtained. Will an LEA rely on national organizations like RFB&D, Bookshare.org, or the American Printing House for the Blind for audio, e-text, and braille versions? Who will coordinate with the regional Instructional Materials Center or any other agency identified by a state as a coordinating user of the NIMAC? Will the formats available from these sources work effectively with a school's existing hardware and software? In most instances, it will be the assistive technology personnel who will be able to answer these and other related questions.

The Copyright Conundrum

The existing discrepancy between the expectations of civil rights legislation and current exemptions to copyright law are spotlighted by the needs of students with print disabilities in the nation's Pre-K–12 classrooms. Legal opinions from the Office of Civil Rights places responsibility for the provision of accessible, alternate format core instructional materials squarely on the shoulders of education institutions. The new provisions in special education law re-affirm that obligation, and, while they require the adoption of a standardized format (NIMAS) for the delivery of publisher-produced files to a central repository (NIMAC), they reiterate the limitations of existing copyright law. Students eligible for specialized-format materials produced via the NIMAS/NIMAC initiative are only a sub-set of those students who may be print-disabled; nevertheless, SEAs and LEAs are still responsible for providing materials to *all* print-disabled students. For a more extensive review of the challenge presented by this civil rights/copyright

challenge, consult [The Promise of Accessible Textbooks: Increased Achievement for All Students](#)^{HL72} and the fact sheets produced by the Library of Congress, National Library Service: [Copyright Law Amendment \(1996\)](#)^{HL73} and [Talking Books and Reading Disabilities \(1997\)](#).^{HL74}

The Chafee Amendment As has been extensively referenced in other publications, the Chafee exemption to copyright was created as a “relief valve” in order to provide specialized-format conversion organizations and governmental agencies with the ability to create alternate versions of instructional materials for individuals with disabilities without the need to obtain prior permission from the copyright holder. It was not envisioned as the foundation of a large-scale, national file creation effort; although it now serves that function. Inadvertently, and, some might say, ironically, the very legislation that was devised to decrease discrimination against individuals who cannot effectively access or use print-based materials is now itself the basis for continuing discrimination. Under current NIMAS/NIMAC intellectual property constraints, some students with print disabilities will qualify and some students with print disabilities will not.

Addressing the Risk of Some Children Left Behind Under existing copyright law, students unable to read print due to physical limitations—those with visual impairments, physical disabilities, and some with learning/reading disabilities—(once qualified by a physician) will be provided with access to NIMAS-derived materials. Many students with learning, attentional, hearing, or other cognitive disabilities will not qualify for these materials, yet it is still the responsibility of SEAs and LEAs to provide them. Given this challenge, and the presently limited range of available solutions, the following options are likely to be considered:

Option 1: Give preference to publishers who offer accessible alternate format instructional materials directly for sale to SEAs and LEAs. For an example of language promoting this approach, see a reference to New York State’s [Chapter 377 statute](#)^{HL75} at the NIMAS centers web site. This option aligns with NIMAS/NIMAC provisions in IDEA 2004. Under Part B Section 612 and 613 an SEA or LEA—

...as part of any print instructional materials adoption process, procurement contract, or other practice or instrument used for purchase of print instructional materials, shall enter into a written contract with the publisher of the print instructional materials to—

(ii) purchase instructional materials from the publisher that are produced in, or may be rendered in, specialized formats.

This option promises the best opportunity for SEAs and LEAs to acquire high-quality, alternate format materials. It supports compensation for materials producers and rights holders, and builds a foundation for universally-designed materials for *all* students who struggle with the limitations of print. It is anticipated that this option will, however, take some time to implement; but its potential for expanding educational access for all students makes it worth the wait.

Option 2: Qualify students under existing Chafee exemption guidelines. The [Final Regulations for IDEA 2004](#)^{HL76} refer to the Library of Congress regulations (36 CFR 701.6(b)(1)) related to the Act to Provide Books for the Adult Blind (approved March 3, 1931, 2 U.S.C. 135a). *Blind persons or other persons with disabilities* includes—

- (i) Blind persons whose visual acuity, as determined by competent authority, is 20/200 or less in the better eye with correcting glasses, or whose widest diameter if visual field subtends an angular distance no greater than 20 degrees.
- (ii) Persons whose visual disability, with correction and regardless of optical measurement, is certified by competent authority as preventing the reading of standard printed material.
- (iii) Persons certified by competent authority as unable to read or unable to use standard printed material as a result of physical limitations.
- (iv) Persons certified by competent authority as having a reading disability resulting from organic dysfunction and of sufficient severity to prevent their reading printed material in a normal manner.

The referenced statutes also define ‘competent authority’ as—

- (i) In cases of blindness, visual disability, or physical limitations “competent authority” is defined to include doctors of medicine, doctors of osteopathy, ophthalmologists, optometrists, registered nurses, therapists, professional staff of hospitals, institutions, and public or welfare agencies (e.g., social workers, case workers, counselors, rehabilitation teachers, and superintendents).
- (ii) In the case of a reading disability from organic dysfunction, competent authority is defined as doctors of medicine who may consult with colleagues in associated disciplines.

Both Bookshare.org^{HL77} and [Recording for the Blind and Dyslexic](#)^{HL78} accept the documentation of students with print disabilities from any of the ‘competent authorities’ listed under (i) above.

Option 3: Localized solutions—scanning text. This option, while pragmatic in that it can generate alternate format materials in a timely manner, generally addresses only the needs of some print-disabled students (those who can benefit from e-text), perpetuates the status quo, and continues to place education personnel in the position of retro-fitting publisher materials. Nevertheless, in the absence of other alternatives, scanning does allow an LEA to meet the accessible instructional materials mandates of IDEA 2004 and the equal access expectations of Section 504 of the Rehabilitation Act and of the Americans with Disabilities Act. Addressing the civil rights mandate is the basis for content conversion in many postsecondary settings, as referenced by these guidelines published by the [University of California, Irvine](#):^{HL79}

Reading and taping services and document conversion services are provided as auxiliary aids and services as required by Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990. These services are provided when the student (or other program participant) with a documented disability demonstrates a disability-related need for the accommodation. ("Other program participant" can include individuals enrolled in Extension courses or seminars, workshops or conferences sponsored by the University, or individuals needing to read University publications or announcements such as the Catalogue, departmental brochures or related material.) Provision of reading or document conversion services does not ensure or guarantee a certain level of achievement or success for the student or program participant.

Reading, taping, and document conversion services are made available to qualified students with print disabilities. This may include students who have visual

disabilities (i.e., blind or low vision), learning disabilities, Attention Deficit Disorder (ADD), Attention Deficit Hyperactivity Disorder (ADHD), visual perceptual disabilities, head trauma, and specific physical disabilities that restrict hand use to turn pages or to otherwise manipulate print material.⁶

VI. Additional Resources

The following collection of resources is provided for those educators who wish to further explore the location, creation, distribution, or use of specialized-format materials.

Braille

Texas School for the Blind and Visually Impaired
Braille Instruction Resources
<http://www.tsbvi.edu/Education/brl-resources.htm>

Washington Assistive Technology Alliance
Technology for Low Vision/Blindness
<http://wata.org/resource/vision/index.htm>

Mayer, A., National Public Radio
Nuances of Graphics, in Braille
<http://www.npr.org/templates/story/story.php?storyId=3877885>

New York Institute for Special Education
Blindness Resource Center
<http://www.nyise.org/blind.htm>

Audio

Audio Textbooks, St. Louis Community College,
<http://www.stlcc.edu/access/Audio%20Textbooks.html>.

Accessible Books, Cooper, H., Texas School for the Blind and Visually Impaired,
<http://www.tsbvi.edu/Outreach/seehear/summer02/books.htm>.

Digital Talking Book Projects, Mid-Illinois Talking Book Center,
<http://www.mitbc.org/dtbs.shtml>.

OverDrive Media Console, OverDrive, Inc., <http://www.overdrive.com/MediaConsole/>.

Audible.com, <http://www.audible.com>.

⁶ *Text Conversion Policy, Effective Summer 2002*. Disability Service Center, University of California, Irvine. Retrieved 8/17/2006 from http://www.disability.uci.edu/policies_procedures/text-conversion-policy.html.

e-text

Finding eBooks on the Internet, Second Edition (EBOOK), Dresner, A. National Braille Press, <http://www.nbp.org/ic/nbp/EBOOK.html>.

Accessible Ebooks, Etexts and Textbooks, Blind Bookworm, <http://www.panix.com/~kestrell/sources.html#braille>.

Design Guidelines for Electronic Publications, Multimedia and the Web; Guideline D: Access to Digital Publications, National Center for Accessible Media, http://ncam.wgbh.org/publications/adm/guideline_d.html.

E-Text and Alternate Media Production, Access Technologists in Higher Education Network (ATHEN), E-Journal Issue #1, <http://athenpro.org/node/34>.

Large Print

Reading Materials in Large Print: A Resource Guide, National Library Service, <http://www.loc.gov/nls/reference/circulars/largeprint.html>.

Huge Print Press, <http://www.hugeprint.com/>.

Best Place to Look for Large Print Books and Low Vision Aids? American Foundation for the Blind, AFB Message Board, http://www.afb.org/message_board_replies.asp?TopicID=1305&FolderID=8.

Large Print Books and Magazines, <http://blindreaders.info/lpbooks.html>.

VII. Embedded Hyperlinks

- HL1. National Library Service Reference Directories
<http://www.loc.gov/nls/reference/directories/sources.html>
- HL2. eligibility requirements
<http://www.loc.gov/nls/signup.html>
- HL3. Federal Quota Program
<http://www.aph.org/fedquotpgm/quickfed.htm>
- HL4. Instructional Resource Centers for the Blind and Visually Impaired
<http://www.afb.org/Section.asp?SectionID=58&TopicID=255&DocumentID=2964>
- HL5. Louis database
<http://www.aph.org/louis/switch.html>
- HL6. registered users
<http://www.aph.org/louis/reposagree.html>
- HL7. Accessible Textbooks department (ATIC)
<http://www.aph.org/louis/reposagree.html>
- HL8. National Braille Press
<http://www.nbp.org/>

- HL9. Braille Institute of North America
<http://www.brailleinstitute.org/>
- HL10. gh
<http://www.ghbraille.com/>
- HL11. TechAdapt
<http://www.techadapt.com/>
- HL12. Braille Transcription Resources List
<http://www.nfb.org/braille/braltran.htm>
- HL13. Sources of Braille Children's Books and Magazines
<http://www.afb.org/Section.asp?SectionID=6&DocumentID=1249>
- HL14. Alternative Media Producers
<http://sun1.aph.org/ampdb.htm>
- HL15. Trends in Braille and Large-Print Production in the United States: 2000–2004
<http://www.afb.org/store/product.asp?sku=jvib000303&mscssid=U93XAN>
- HL16. National Instructional Materials Accessibility Standard (NIMAS)
<http://nimas.cast.org/>
- HL17. National Instructional Materials Access Center (NIMAC)
<http://www.nimac.us/>
- HL18. Duxbury Systems, Inc.
<http://www.duxburysystems.com/dbt.asp>
- HL19. Computer Applications Specialties Company
<http://www.braille2000.com/>
- HL20. American Printing House for the Blind
<http://www.aph.org/>
- HL21. Bookshare.org
<http://www.bookshare.org/web/AboutBrailleBooks.html>
- HL22. Coordinating Instructional Materials Accessibility
<http://www.afb.org/Section.asp?SectionID=58&TopicID=255&DocumentID=2943>
- HL23. Instructional Resource Center
<http://www.afb.org/Section.asp?SectionID=58&TopicID=255&DocumentID=2964>
- HL24. Louis database
<http://www.aph.org/louis/switch.html>
- HL25. Refreshable Braille
<http://www.utoronto.ca/atrc/reference/tech/refbraille.html>
- HL26. gh Player 2.1
<http://www.ghbraille.com/ghplayer.html>
- HL27. DAISY
http://www.daisy.org/about_us/dtbooks.asp
- HL28. eligibility requirements
<http://www.loc.gov/nls/signup.html>
- HL29. Eligibility
<http://www.rfbd.org/membership.htm>
- HL30. Talking Book Production Services
<http://www.talkingbookproductions.com/services.asp>
- HL31. Talking Tapes' services
<http://talkingtapes.org/>
- HL32. Audio Books and Magazine
<http://blindreaders.info/audiobks.html>

- HL33. Heard Any Good Books Lately?
<http://playlistmag.com/features/2005/06/heardbooks/index.php>
- HL34. DTB software
<http://ncam.wgbh.org/ebooks/comparison.html#dtbsoftware>
- HL35. catalog
<https://custhub.rfbd.org/SearchCatalog.asp>
- HL36. Universal Design for Learning
<http://www.cast.org/research/udl/index.html>
- HL37. Simple-to-follow instructions for the computer novice on how to download E-Texts and E-Books to your PC
<http://home.wanadoo.nl/cecilia.mccabe/instructions.htm>
- HL38. Stores and Sites
<http://home.wanadoo.nl/cecilia.mccabe/lesson5.htm#stores>
- HL39. Publishers' Permissions/E-Text Contacts
<http://www.publishers.org/highered/topics.cfm?TopicID=8>
- HL40. Mainstream Sources of Digital Electronic Text
http://nimas.cast.org/about/resources/alternate_formats.html#mainstreamsourcestext
- HL41. Bookshare.org
<http://www.bookshare.org/>
- HL42. Accessible Book Collection
<http://www.accessiblebookcollection.org/>
- HL43. eligible students with print disabilities
<http://www.bookshare.org/web/AboutMembership.html>
- HL44. Selected Sources for Electronic Texts 2005
<http://www.loc.gov/nls/reference/factsheets/etexts.html>
- HL45. Electronic Books
<http://www.lib.utexas.edu/books/etext.html>
- HL46. Kentucky Accessible Materials Consortium
<http://kamc.louisville.edu/kyecontent/>
- HL47. How to Effectively Scan a Book
http://www.esight.org/View.cfm?x=773&ov_id=-1
- HL48. Adobe Acrobat Reader
<http://www.adobe.com/products/acrobat/readstep2.html>
- HL49. Microsoft Reader
<http://www.microsoft.com/reader>
- HL50. Beyond the Text
<http://ncam.wgbh.org/ebooks/comparison.html>
- HL51. DAISY web site
http://www.daisy.org/about_us/dtbooks.asp
- HL52. Comparison chart of e-book and digital talking book (DTB) hardware and software
<http://ncam.wgbh.org/ebooks/comparison.html#dtbsoftware>
- HL53. Publishers' Permissions/E-Text Contacts
<http://www.publishers.org/highered/topics.cfm?TopicID=8>
- HL54. Reading Materials in Large Print: A Resource Guide
<http://www.loc.gov/nls/reference/circulars/largeprint.html#two>
- HL55. Louis database
<http://www.aph.org/louis.htm>

- HL56. Instructional Resource Centers for the Blind and Visually Impaired
<http://www.afb.org/Section.asp?SectionID=58&TopicID=255&DocumentID=2964>
- HL57. Scaled Vector Graphics
<http://www.techterms.org/definition/vectorgraphic>
- HL58. Joint Photographic Experts Group
<http://www.techterms.org/definition/jpeg>
- HL59. Portable Network Graphic
<http://www.techterms.org/definition/png>
- HL60. State Director of Special Education Suggested Responsibilities Regarding NIMAS & NIMAC
http://nimas.cast.org/about/resources/sea_sped.html
- HL61. NIMAS Guidelines Checklist: A Self-Study Tool
<http://www.afb.org/Section.asp?SectionID=58&TopicID=255&DocumentID=2944>
- HL62. State Assistive Technology Programs
<http://www.closingthegap.com/ctg2/solutions/organizations/StateATInline.lasso>
- HL63. State Contact List
<http://www.closingthegap.com/ctg2/solutions/organizations/StateATInline.lasso>
- HL64. Association of Assistive Technology Act Programs
<http://www.ataporg.org/stateatprojects.asp>
- HL65. Assistive Technology Industry Association
<http://www.atia.org/>
- HL66. National Association of State Textbook Administrators
<http://www.nasta.org/>
- HL67. ACTS and Related Textbook Organizations
http://www.publishers.org/SchoolDiv/textBooks/textBk_04_ACTS.htm
- HL68. Sample Language for Adoption Contracts and LEA Purchase Orders
http://nimas.cast.org/about/resources/sea_sped.html
- HL69. State Director of Special Education Suggested Responsibilities Regarding NIMAS & NIMAC
http://nimas.cast.org/about/resources/sea_sped.html
- HL70. suggested contractual language
http://nimas.cast.org/about/resources/sea_sped.html
- HL71. Accessible Instructional Materials and the IEP
http://nimas.cast.org/about/resources/accessible_iep.html
- HL72. The Promise of Accessible Textbooks: Increased Achievement for All Students
http://www.cast.org/publications/ncac/ncac_accessible.html
- HL73. Copyright Law Amendment (1996)
<http://www.loc.gov/nls/reference/factsheets/copyright.html>
- HL74. Talking Books and Reading Disabilities (1997)
<http://www.loc.gov/nls/reference/factsheets/readingdisabilities.html>
- HL75. Chapter 377 statute
<http://nimas.cast.org/about/resources/statessurvey.html#newyork>
- HL76. Final Regulations for IDEA 2004
<http://a257.g.akamaitech.net/7/257/2422/01jan20061800/edocket.access.gpo.gov/2006/pdf/06-6656.pdf>
- HL77. Bookshare.org
<http://www.bookshare.org/web/AboutDisabilities.html>

HL78. Recording for the Blind and Dyslexic

<http://www.rfb.org/membership.htm>

HL79. University of California, Irvine

http://www.disability.uci.edu/policies_procedures/text-conversion-policy.html