

**2005 DRAFTING REQUEST**

**Bill**

Received: 10/06/2005

Received By: **gmalaise**

Wanted: **Soon**

Identical to LRB:

For: **Donna Seidel (608) 266-0654**

By/Representing: **Natalie Verette**

This file may be shown to any legislator: **NO**

Drafter: **gmalaise**

May Contact:

Addl. Drafters:

Subject: **Discrimination  
Higher Education - miscellaneous  
Higher Education - tech. college  
Higher Education - UW System**

Extra Copies: **PG**

Submit via email: **YES**

Requester's email: **Rep.Seidel@legis.state.wi.us**

Carbon copy (CC:) to:

---

**Pre Topic:**

No specific pre topic given

---

**Topic:**

Instructional material in alternative formats for postsecondary students with disabilities

---

**Instructions:**

See Attached--draft up a WI version of KY 2003 ch. 49 relating to the availability of textbooks and instructional materials in accessible forms for postsecondary students with disabilities.

---

**Drafting History:**

<u>Vers.</u>	<u>Drafted</u>	<u>Reviewed</u>	<u>Typed</u>	<u>Proofed</u>	<u>Submitted</u>	<u>Jacketed</u>	<u>Required</u>
/?	gmalaise 12/07/2005	csicilia 12/09/2005		_____			State
/1			rschluet 12/09/2005	_____	sbasford 12/09/2005		State
/2	gmalaise	jdyer	chaugen	_____	lnorthro		State

<u>Vers.</u>	<u>Drafted</u>	<u>Reviewed</u>	<u>Typed</u>	<u>Proofed</u>	<u>Submitted</u>	<u>Jacketed</u>	<u>Required</u>
	12/16/2005	12/22/2005	12/28/2005	_____	12/28/2005		
/3	gmalaise 01/05/2006	csicilia 01/05/2006	rschluet 01/06/2006	_____ _____	lnorthro 01/06/2006	lemery 03/07/2006	

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<END>

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*Handwritten signature and initials:*  
156 PG

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13 cjs  $\frac{1}{5}$   
06

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*Ch 12/28 ch 12/28*

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/?	gmalaise						
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1 gjs 12/9  
05

1295- PB  
<END>

FE Sent For:

## Grant, Peter

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**From:** Verette, Natalie  
**Sent:** Monday, October 03, 2005 4:46 PM  
**To:** Grant, Peter  
**Subject:** Digital access of printed materials

**Attachments:** Scan001.PDF



Scan001.PDF (444  
KB)

Peter,

Attached is the background information. Rep. Seidel would like to mirror the Kentucky law referenced in one of the articles. Please contact us with any questions.

Thank you,

Natalie Verette  
Legislative Assistant  
Office of State Representative Donna Seidel 85th Assembly District

State Capitol, 409 North  
P.O. Box 8953  
Madison, WI 53708

608.266.0654  
888.534.0085 (toll-free)  
natalie.verette@legis.state.wi.us

September 14, 2004

Robert Jauch, Senator  
5271 Maple S. Drive  
Poplar, WI 54864

Regarding: Digital Access Center for Post-Secondary Education in Wisconsin

Dear Robert:

The accessibility of print materials for college students with (reading disabilities i.e. blind, physical and learning disability) has and is a major factor in cost for colleges and graduation success of students in classes and programs. It is our goal through legislative change to eliminate this major obstacle.

In the last issue of America Association of People with Disabilities, Summer 2004, title article reads: *Groundbreaking Report Reveals Major Obstacles to Colleges Access Nationwide for Students with Disabilities*. The report focuses on barriers to equal educational opportunities in higher education and can be found at, [www.ihep.org/SneakPeek.php](http://www.ihep.org/SneakPeek.php)

We know that if Wisconsin can legislate equal access to written materials, i.e. textbooks, students will be more successful and the cost of providing accommodations to students with disabilities will decline.

**Digital Textbooks Access Center**

Northcentral Technical College (NTC), Wausau WI and UW Stout University, Menomonee, WI, Centers, will have the ability to download, scan or otherwise make textbooks accessible to students with disabilities in their system in a digitized format. This format will allow students with reading or other access problems to:

- ❖ Print materials
- ❖ Have the ability to have immediate access to materials through digitized speech
- ❖ Print materials in an alternative medium of presentations from an original work

**Access Center @ NTC & UW Stout Need:**

One person at each college  
NTC .5 FTE \$35,000  
UW Stout .5 FTE \$35,000

*Equipment & Software*

2 High Speed Scanners @ \$7,000 each = \$14,000

One time expense:

2 Ease Publisher Digital Talking @ \$5,300 each = \$10,600

2 Computer Systems @ \$2,500 each = \$5,000

- ❖ Ongoing maintenance would be done by the Center
- ❖ Continued cost per year \$70,000 - \$90,000 pay for salaries and fringes, supplies and training for both Centers

Please give me a call if you have any questions (715) 675-3331 Ext. 4087 or e-mail [mielczar@ntc.edu](mailto:mielczar@ntc.edu).

Sincerely,

Joe Mielczarek  
Vocational Counselor  
Center for Students with Disabilities

[Skip to Main Content](#)

<b>AccessIT Home</b>		<b>University of Washington</b>		
		National Center on Accessible Information Technology in Education		
<b>About AccessIT</b>	<b>Knowledge Base</b>	<b>Training</b>	<b>Events</b>	<b>Copyright Statement</b>
	<h2 style="text-align: center;">The Kentucky Postsecondary Textbook Accessibility Act: A Promising Practice on Textbook Accessibility Legislation</h2> <p style="text-align: center;"><a href="#">Printable Version</a></p> <p><b>Article ID:</b> 216  <b>General Topic(s):</b> General</p> <p>On March 12, 2003, the Governor of Kentucky signed the <a href="#">Kentucky Postsecondary Textbook Accessibility Act</a>, Senate Bill 85 (SB 85), into law. The purpose of this legislation is</p> <p style="padding-left: 40px;">to assure, to the maximum extent possible, that all students with disabilities in any postsecondary institution or independent institution who require reading accommodations in accordance with Section 504 of the Rehabilitation Act (29 U.S.C. 794) or with the Americans with Disabilities Act (42 U.S.C. 12101 et seq.), including but not limited to students who are blind, visually impaired, or who have a specific learning disability or any other disability affecting reading, shall have access to instructional materials in alternative formats that are appropriate to their disability and educational needs.</p> <p>SB 85 was modeled after <a href="#">California Assembly Bill 422</a> (1999) and <a href="#">Arkansas Act 758</a> (2001, in PDF, requires <a href="#">Adobe Acrobat Reader</a>). A number of states have now passed accessible textbooks laws, but these were two of the earliest states to do so. Both required that publishers supply electronic versions of textbooks "in a timely manner... upon receipt of a written request".</p> <p>Kentucky's SB 85, and the implementation of that law, is a</p>			
<b>DID YOU KNOW?</b>				
Video productions can be designed to be accessible.				
<b>Search Knowledge Base</b>				
<b>Q&amp;As by Topic</b>				
<b>Case Studies</b>				
<b>Promising Practices</b>				

## About This Site

Funded by:



(grant  
#H133D010306)

promising practice for several reasons. First, it clarifies the phrase "in a timely manner", which is a recurring phrase in accessibility law and has long been a phrase that is subject to dispute. SB 85 defines "timely" very specifically:

The publisher shall transmit or otherwise send an electronic format version of requested instructional material within fifteen (15) working days of receipt of an appropriately completed request. Should this timetable present an undue burden for a publisher, the publisher shall submit within the fifteen (15) working day period a statement to the requesting entity certifying the expected date for transmission or delivery of the file.

SB 85 was also the first law to identify Extensible Markup Language (XML) as the default file format if publishers and educational entities should fail to otherwise agree upon a format. A key concept in selecting an appropriate file format is "structural integrity": The selected format should be capable of delivering the text of the material, as well as sidebars, the table of contents, chapter headings and subheadings, footnotes, indexes, glossaries, bibliographies, and all other content to students with disabilities. XML is well suited to this task.

Kentucky's SB 85 is also a promising practice because it defines print disabilities broadly, allowing for the provision of alternative versions of materials to a wide range of students. Many states' accessible textbook laws focus specifically on a narrow range of students, such as students with visual disabilities. In some cases this is extended to include students with learning disabilities. However, Kentucky's law extends the definition further still, "including but not limited to students who are blind, are visually impaired, or have a specific learning disability or other disability affecting reading".

Copyright © 2002 - 2004 by University of Washington. Permission is granted to copy these materials for educational, noncommercial purposes provided the source is acknowledged. For more information see the larger [AccessIT Copyright Statement](#). This product was funded by the National Institute on Disability and Rehabilitation Research of the U.S. Department of Education (grant #H133D010306). However, the contents do not necessarily represent the policy of the Department of Education, and you should not assume their endorsement.

## Malaise, Gordon

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**From:** Verette, Natalie  
**Sent:** Thursday, November 03, 2005 1:59 PM  
**To:** Malaise, Gordon  
**Subject:** More info on Electronic Access to Textbooks

**Attachments:** 2003 Kentucky Law.pdf; NCAC Article.pdf; NCAC Policy Brief.pdf; NTC Process.pdf

Gordon - Here's the additional information, let me know if you have questions. Thanks!

Natalie Verette  
Legislative Assistant  
**Office of State Representative Donna Seidel**  
85th Assembly District

State Capitol, 409 North  
P.O. Box 8953  
Madison, WI 53708

608.266.0654  
888.534.0085 (toll-free)  
[natalie.verette@legis.state.wi.us](mailto:natalie.verette@legis.state.wi.us)



2003 Kentucky  
Law.pdf (69 KB)



NCAC Article.pdf (2  
MB)



NCAC Policy  
Brief.pdf (257 KB)...



NTC Process.pdf  
(115 KB)

ACTIONS OF THE 2003 GENERAL ASSEMBLY

**SB 75**

AN ACT relating to payment of alcoholic beverage license fees.

Amends KRS 243.380 to require that applications for alcoholic beverage licenses be accompanied by payment; requires that payment be by certified check, cash, postal or express money order, or any other method of payment approved in writing by both the Finance and Administration Cabinet and the Office of the State Treasurer.

**SB 81**

AN ACT relating to pesticide use and application.

Amends KRS 217B.170 to exempt handheld or backpack sprayers and ground-driven equipment that is propelled by hand from inspection under KRS 217B.160 and from the \$10 registration fee charged by the Department of Agriculture.

**SB 85**

AN ACT relating to the availability of postsecondary textbooks and instructional materials in accessible forms for students with disabilities.

Creates a new section of KRS Chapter 164 to require publishers to provide postsecondary instructional materials in an electronic format at no cost to postsecondary institutions for use by students with disabilities; requires that the electronic version maintain the structural integrity of the instructional material; sets forth procedures for requesting and sending electronic or alternative format instructional materials; permits the Council on Postsecondary Education to establish the State Repository for Alternative Format Instructional Materials, and sets forth its duties; permits a postsecondary institution to share alternative format instructional materials it creates with other entities for use by students with disabilities; permits the Council on Postsecondary Education to promulgate administrative regulations, and requires it to develop policies and procedures to ensure student access to appropriate instructional materials; requires students and institutions to provide certification that electronic and alternative versions of instructional material will be used in a manner in accordance with copyright law; specifies that a publisher is a place of public accommodation for the purposes of KRS 344.130, and that failure to comply with this section is subject to action for discrimination on the basis of disability under KRS 344.120; permits the Kentucky Department of Education to share electronic instructional materials with the state repository.

**SB 88**

AN ACT relating to breast cancer.

Amends KRS 214.554 to add the executive director of the Office of Women's Physical and Mental Health to the Breast Cancer Advisory Committee.

**SB 91**

AN ACT relating to economic development and declaring an emergency.

Amends KRS 154.24-090 and KRS 154.24-120 to allow the activation date set forth in an agreement to commence within two years after the date of the final resolution; amends various sections of KRS Chapter 148 to allow a theme restaurant destination attraction, which shall have capital costs in excess of \$5,000,000, a seating capacity of

## CHAPTER 49

## (SB 85)

AN ACT relating to the availability of postsecondary textbooks and instructional materials in accessible forms for students with disabilities.

*Be it enacted by the General Assembly of the Commonwealth of Kentucky:*

SECTION 1. A NEW SECTION OF KRS CHAPTER 164 IS CREATED TO READ AS FOLLOWS:

- (1) *As used in this section, unless the context requires otherwise:*
- (a) *"Alternative format" means any medium or format for the presentation of instructional materials other than standard print needed by a student with a disability for a reading accommodation, including but not limited to braille, large print texts, audio recordings, digital texts, and digital talking books;*
  - (b) *"Instructional material" means a textbook or other material published primarily for use by students in a course of study in which a student with a disability is enrolled that is required or essential to a student's success, as determined by the course instructor. "Instructional material" includes nontextual mathematics and science material to the extent that software is commercially available to permit the conversion of the electronic file of the material into a format that is compatible with assistive technologies such as speech synthesis software or braille translation software commonly used by students with disabilities;*
  - (c) *"Nonprinted instructional material" means instructional material in a format other than print, including instructional material that requires the availability of electronic equipment in order to be used as a learning resource, including but not limited to software programs, videodiscs, videotapes, and audio tapes;*
  - (d) *"Printed instructional material" means instructional material in book or other printed form;*
  - (e) *"Publisher" means an individual, firm, partnership, corporation, or other entity that publishes or manufactures instructional material used by students attending a public or independent postsecondary education institution in Kentucky;*
  - (f) *"State Repository for Alternative Format Instructional Materials" or "repository" means a consortium established or otherwise designated by the Council on Postsecondary Education under subsection (8) of this section to serve as a state repository for electronic files or alternative format instructional materials obtained from publishers, created by institutions, or received through other means;*
  - (g) *"Structural integrity" means the inclusion of all of the information provided in printed instructional material, including but not limited to the text of the material sidebars, the table of contents, chapter headings and subheadings, footnotes, indexes, and glossaries, but need not include nontextual elements such as pictures, illustrations, graphs, or charts; and*
  - (h) *"Working day" means a day that is not Saturday, Sunday, or a national holiday.*
- (2) *The purpose of this section is to ensure, to the maximum extent possible, that all postsecondary students with a disability in Kentucky requiring reading accommodations, in accordance with Section 504 of the Rehabilitation Act, 29 U.S.C. sec. 794, or the*

*Americans with Disabilities Act, 42 U.S.C. secs. 12101 et seq., including but not limited to students who are blind, are visually impaired, or have a specific learning disability or other disability affecting reading, shall have access to instructional materials in alternative formats that are appropriate to their disability and educational needs.*

- (3) A publisher shall, upon fulfillment of the requirements of subsections (6) and (7) of this section, provide to a postsecondary education institution or to the State Repository for Alternative Format Instructional Materials, at no cost:*
- (a) Printed instructional material in an electronic format; and*
  - (b) Nonprinted instructional material in an electronic format, when the technology is available to maintain the material's structural integrity.*
- (4) Instructional material provided by a publisher in electronic format shall:*
- (a) Maintain the structural integrity of the original instructional material, except as provided for in paragraph (b) subsection (3) of this section;*
  - (b) Be compatible with commonly used braille translation and speech synthesis software;*
  - (c) Include corrections and revisions as may be necessary; and*
  - (d) Be in a format that is mutually agreed upon by the publisher and the requesting institution or the State Repository for Alternative Format Instructional Materials. If good faith efforts fail to produce an agreement as to an electronic format that will preserve the structural integrity of the instructional material, the publisher shall provide the instructional material in XML (Extensible Markup Language), utilizing an appropriate document-type definition suitable for the creation of alternative format materials, and shall preserve as much of the structural integrity of the original instructional material as possible.*
- (5) The publisher shall transmit or otherwise send an electronic format version of requested instructional material within fifteen (15) working days of receipt of an appropriately completed request. Should this timetable present an undue burden for a publisher, the publisher shall submit within the fifteen (15) working day period a statement to the requesting entity certifying the expected date for transmission or delivery of the file.*
- (6) (a) To receive an electronic format version of instructional material, a written request shall be submitted to the publisher that certifies:*
- 1. The instructional material has been purchased for use by a student with a disability by the student or the institution the student attends or is registered to attend;*
  - 2. The student has a disability that prevents the student from using the standard instructional material; and*
  - 3. The instructional material is for use by the student in connection with a course in which he or she is registered or enrolled.*
- (b) A publisher may also require a statement signed by the student, or if the student is a minor, the student's parent or legal guardian, agreeing that the student will:*
- 1. Use the electronic copy of the instructional material solely for his or her own educational purposes; and*

- 2. Not copy or distribute the instructional material for use by others.*
- (7) The request for an electronic format version of instructional material shall be prepared and signed by:*
- (a) The coordinator of services for students with a disability at the institution;*
  - (b) A representative of the Department for the Blind;*
  - (c) A representative of the Department of Vocational Rehabilitation; or*
  - (d) A representative of the State Repository for Alternative Format Instructional Materials.*
- (8) The Council on Postsecondary Education may, to the extent funds are available, establish or otherwise designate a consortium to be called the State Repository for Alternative Format Instructional Materials to serve as a state repository for electronic files and alternative format materials for the purpose of facilitating the timely access of appropriate alternative instructional materials by postsecondary students with a disability.*
- (9) The Council on Postsecondary Education may promulgate administrative regulations governing the implementation and administration of this section.*
- (10) The council shall work with representatives of each postsecondary institution to develop policies and procedures designed to ensure to the maximum extent possible that students with disabilities have access to instructional materials in appropriate alternative formats within the first week of class.*
- (11) The council, in consultation with appropriate entities, including but not limited to the Department for the Blind, the Kentucky Assistive Technology Service Network, Recording for the Blind and Dyslexic, and the Kentucky Association on Higher Education and Disability, shall include within its annual status report on postsecondary education in Kentucky a continuing assessment of the need for statewide technical assistance, training, and other supports designed to increase the availability and effective use of alternative format instructional materials.*
- (12) The State Repository for Alternative Format Instructional Materials or the council may receive electronic files and alternative format materials from:*
- (a) Publishers;*
  - (b) Postsecondary education institutions that have created alternative materials for use by a student with a disability;*
  - (c) The Kentucky Department of Education, receiving electronic files from publishers under the requirements of KRS 156.027; or*
  - (d) Other sources.*
- (13) The repository or the council shall, upon receipt of documents as set forth in subsection (6) of this section, provide at no cost copies of electronic files and alternative format materials to:*
- (a) Postsecondary education institutions in Kentucky; and*
  - (b) The Kentucky Department of Education, to assist in the implementation of the requirements of KRS 156.027.*
- (14) The repository shall provide to a publisher, upon request:*

- (d) *A summary of all electronic or alternative format versions of instructional material from that publisher provided to students, postsecondary education institutions, and the Kentucky Department of Education from its holdings; and*
- (b) *Copies of requests and related certification documents received for instructional materials from that publisher.*
- (15) *The repository or the council may submit requests for electronic files to publishers on behalf of institutions.*
- (16) (a) *A postsecondary education institution or an educational instructor, assistant, or tutor may assist a student with a disability by using the electronic format version of instructional material as provided by this section solely to transcribe or arrange for the conversion of the instructional material into an alternative format, or to otherwise assist the student.*
- (b) *If an alternative format version of instructional material is created, an institution may, for the purpose of providing the version to other students with disabilities, share that version with:*
1. *The repository;*
  2. *A Kentucky postsecondary education institution serving a student with a disability; and*
  3. *An authorized entity as defined under 17 U.S.C. sec. 121 that commonly provides alternative format materials for use by students in Kentucky institutions.*
- (17) *The disk or file of an electronic format version of instructional material used directly by a student shall be copy-protected, or reasonable precautions shall be taken by the institution to ensure that the student does not copy or distribute the electronic format version in violation of the Copyright Revisions Act of 1976, as amended, 17 U.S.C. secs. 101 et seq.*
- (18) *Nothing in this section shall be deemed to authorize any use of instructional materials that would constitute an infringement of copyright under the Copyright Revision Act of 1976, as amended, 17 U.S.C. secs. 101 et seq.*
- (19) ~~*Nothing in this section shall absolve covered entities from the obligation to provide equivalent access to information technology and software as set forth in KRS 61.982.*~~
- (20) *A publisher shall be considered a place of public accommodation for the purposes of KRS 344.130. Failure to comply with the requirements of this section shall be an unlawful practice of discrimination on the basis of disability for the purposes of KRS 344.120.*

Section 2. This Act may be cited as the Kentucky Postsecondary Textbook Accessibility Act.

Approved March 12, 2003

(CALIFORNIA)

BILL NUMBER: AB 422 CHAPTERED  
BILL TEXT

CHAPTER 379  
FILED WITH SECRETARY OF STATE SEPTEMBER 15, 1999  
APPROVED BY GOVERNOR SEPTEMBER 15, 1999  
PASSED THE ASSEMBLY AUGUST 26, 1999  
PASSED THE SENATE AUGUST 23, 1999  
AMENDED IN SENATE JUNE 30, 1999  
AMENDED IN SENATE JUNE 16, 1999  
AMENDED IN ASSEMBLY MAY 25, 1999  
AMENDED IN ASSEMBLY APRIL 5, 1999

INTRODUCED BY Assembly Member Steinberg  
(Coauthors: Assembly Members Aroner, Corbett, Kuehl, and Thomson)

FEBRUARY 12, 1999

An act to add Section 67302 to the Education Code, relating to instructional materials.

LEGISLATIVE COUNSEL'S DIGEST

AB 422, Steinberg. Instructional materials: disabled students.

Under existing law, a publisher or manufacturer of instructional materials offered for adoption or sale in California is required to comply with specified requirements, including providing to the state, at no cost, the right to transcribe, reproduce, and distribute the material in braille, large print, recordings, or other accessible media for use by pupils with visual disabilities. This right includes computer diskette versions of instructional materials if made available to any other state, and those corrections and revisions as may be necessary.

This bill would require every individual, firm, partnership or corporation publishing or manufacturing printed instructional materials, as defined, for students attending the University of California, the California State University, or a California Community College to provide to the university, college, or particular campus of the university or college, for use by students at no additional cost and in a timely manner, any printed instructional material in unencrypted electronic form upon the receipt of a written request, provided that the university or college complies with certain conditions.

*Applies to public universities only printed instructional materials in electronic format*

This bill would require that the computer files or electronic versions of printed instructional material maintain their structural integrity, as defined, be compatible with commonly used braille translation and speech synthesis software, and include corrections and revisions as may be necessary.

*Computer files or electronic versions*

*- maintain structural integrity*

*- be compatible Braille translation & speech synthesis software*

*- include corrections & revisions as necessary*

This bill would authorize the Chancellor of the California Community Colleges, the Chancellor of the California State University, and the President of the University of California to each establish one or more centers within their respective segments to process requests for electronic versions of instructional materials, as prescribed.

This bill would also require an individual, firm, partnership or corporation that publishes or manufactures nonprinted instructional materials for students attending the University of California, the California State University, or a California Community College to

provide computer files or other electronic versions of the nonprinted instructional materials for use by students, subject to the same conditions for printed instructional materials, when technology is available to convert these nonprinted instructional materials to a format that maintains the structural integrity of the nonprinted instructional material that is compatible with braille translation and speech synthesis software.

Nonprinted  
- when technology available  
to convert to electronic format  
that maintains structural  
integrity

This bill would provide that willful failure to comply with these requirements would be subject to sanctions under the law relating to full and equal access of disabled persons to public accommodations.

Subject to public accommodations  
law

THE PEOPLE OF THE STATE OF CALIFORNIA DO ENACT AS FOLLOWS:

SECTION 1. Section 67302 is added to the Education Code, to read:

67302. (a) An individual, firm, partnership or corporation that publishes or manufactures printed instructional materials for students attending the University of California, the California State University, or a California Community College, shall provide to the university, college, or particular campus of the university or college, for use by students attending the University of California, the California State University, or a California Community College, any printed instructional material in an electronic format mutually agreed upon by the publisher or manufacturer and the college or campus. Computer files or electronic versions of printed instructional materials shall maintain the structural integrity of the printed instructional material, be compatible with commonly used braille translation and speech synthesis software, and include corrections and revisions as may be necessary. The computer files or electronic versions of the printed instructional material shall be provided to the university, college, or particular campus of the university or college at no additional cost and in a timely manner, upon receipt of a written request that does all of the following:

\* Publisher shall provide  
printed instructional material  
in electronic format mutually  
agreed to by publisher & school

(1) Certifies that the university, college, or particular campus of the university or college has purchased the printed instructional material for use by a student with a disability or that a student with a disability attending or registered to attend that university, college, or particular campus of the university or college has purchased the printed instructional material.

\* Files & electronic versions shall  
- maintain structural integrity  
- be compatible w/ Braille  
& speech synthesis software  
- corrections & revisions

(2) Certifies that the student has a disability that prevents him or her from using standard instructional materials.

\* No additional cost, timely  
manner

(3) Certifies that the printed instructional material is for use by the student in connection with a course in which he or she is registered or enrolled at the university, college, or particular campus of the university or college.

\* Written request  
- certify printed material  
purchased by school or  
student  
- " student has disability  
- " for use in class  
- Signed ...

(4) Is signed by the coordinator of services for students with disabilities at the university, college, or particular campus of the university or college or by the campus or college official responsible for monitoring compliance with the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) at the university, college, or particular campus of the university or college.

(b) An individual, firm, partnership or corporation specified in subdivision (a) may also require that, in addition to the conditions enumerated above, the request shall include a statement signed by the student agreeing to both of the following:

the Publisher may also  
require student to agree -

(1) He or she will use the electronic copy of the printed instructional material in specialized format solely for his or her own educational purposes.

- solely for own ed.  
purposes  
- not copy for others

(2) He or she will not copy or duplicate the printed instructional material for use by others.

(c) If a college or university permits a student to directly use the electronic version of an instructional material, the disk or file shall be copy-protected or the college or university shall take other reasonable precautions to ensure that students do not copy or distribute electronic versions of instructional materials in violation of the Copyright Revisions Act of 1976, as amended (17 U.S.C. Sec. 101 et seq.).

*Ensure student does not violate copyright law*

(d) An individual, firm, partnership or corporation that publishes or manufactures nonprinted instructional materials for students attending the University of California, the California State University, or a California Community College shall provide computer files or other electronic versions of the nonprinted instructional materials for use by students attending the University of California, the California State University, or a California Community College, subject to the same conditions set forth in subdivisions (a) and (b) for printed instructional materials, when technology is available to convert these nonprinted instructional materials to a format that maintains the structural integrity of the nonprinted instructional materials that is compatible with braille translation and speech synthesis software.

*Nonprinted - when technology available*

(e) For purposes of this section:

(1) "Instructional material or materials" means textbooks and other materials written and published primarily for use by students in postsecondary instruction that are required or essential to a student's success in a course of study in which a student with a disability is enrolled. [The determination of which materials are "required or essential to student success" shall be made by the instructor of the course in consultation with the official making the request pursuant to paragraph (4) of subdivision (a) in accordance with guidelines issued pursuant to subdivision (i).] "Instructional material or materials" does not include nontextual mathematics and science materials until the time software becomes commercially available that permits the conversion of existing electronic files of the materials into a format that is compatible with braille translation software or alternative media for students with disabilities.

*"required or essential to student's success"*

*- determined by instructor in consultation w/ coordinator according to guidelines*

(2) "Printed instructional material or materials" means instructional material or materials in book or other printed form.

*Printed*

(3) "Nonprinted instructional materials" means instructional materials in formats other than print, and includes instructional materials that require the availability of electronic equipment in order to be used as a learning resource, including, but not necessarily limited to, software programs, video disks, and video and audio tapes.

*Nonprinted - e.g. audio, video, software*

(4) "Structural integrity" means all of the printed instructional material, including, but not limited to, the text of the material, sidebars, the table of contents, chapter headings and subheadings, footnotes, indexes, glossaries, and bibliographies. "Structural integrity" need not include nontextual elements such as pictures, illustrations, graphs, or charts. If good faith efforts fail to produce an agreement pursuant to subdivision (a) between the publisher or manufacturer and the university, college, or particular campus of the university or college, as to an electronic format that will preserve the structural integrity of the printed instructional material, the publisher or manufacturer shall provide the instructional material in ASCII text and shall preserve as much of the structural integrity of the printed instructional material as possible.

*Default if can't agree - ASCII*

(5) "Specialized format" means braille, audio, or digital text that is exclusively for use by blind or other persons with disabilities.

= Convert electronic file to specialized format

(f) Nothing in this section shall be construed to prohibit a university, college, or particular campus of the university or college from assisting a student with a disability by using the electronic version of printed instructional material provided pursuant to this section solely to transcribe or arrange for the transcription of the printed instructional material into braille. In the event a transcription is made, the campus or college shall have the right to share the braille copy of the printed instructional material with other students with disabilities.

May use electronic versions to transcribe to Braille

(g) The Chancellor of the California Community Colleges, the Chancellor of the California State University, and the President of the University of California may each establish one or more centers within their respective segments to process requests for electronic versions of instructional materials pursuant to this section. If a segment establishes a center or centers, each of the following shall apply:

May establish centers for processing requests

(1) The colleges or campuses designated as within the jurisdiction of a center shall submit requests for instructional material made pursuant to paragraph (4) of subdivision (a) to the center, which shall transmit the request to the publisher or manufacturer.

(2) If there is more than one center, each center shall make every effort to coordinate requests within its segment.

(3) The publisher or manufacturer of instructional material shall be required to honor and respond to only those requests submitted through a designated center.

(4) If a publisher or manufacturer has responded to a request for instructional materials by a center, or on behalf of all the centers within a segment, all subsequent requests for these instructional materials shall be satisfied by the center to which the request is made.

(h) Nothing in this section shall be deemed to authorize any use of instructional materials that would constitute an infringement of copyright under the Copyright Revision Act of 1976, as amended (17 U.S.C. Sec. 101 et seq.).

© Infringement not authorized

(i) The governing boards of the California Community Colleges, the California State University, and the University of California shall each adopt guidelines consistent with this section for its implementation and administration. At a minimum, the guidelines shall address all of the following:

Guidelines

(1) The designation of materials deemed "required or essential to student success."

(2) The determination of the availability of technology for the conversion of nonprinted materials pursuant to subdivision (d) and the conversion of mathematics and science materials pursuant to paragraph (4) of subdivision (e).

(3) The procedures and standards relating to distribution of files and materials pursuant to subdivisions (a) and (b).

(4) Other matters as are deemed necessary or appropriate to carry out the purposes of this section.

(j) Failure to comply with the requirements of this section shall be a violation of Section 54.1 of the Civil Code.

Public Accommodations

ARKANSAS

Stricken language would be deleted from and underlined language would be added to the law as it existed prior to this session of the General Assembly.

1 State of Arkansas  
2 83rd General Assembly  
3 Regular Session, 2001  
4  
5 By: Senator D. Malone  
6  
7

# A Bill

Act 758 of 2001  
SENATE BILL 537

## For An Act To Be Entitled

AN ACT TO PROVIDE INSTRUCTIONAL MATERIALS TO DISABLED STUDENTS IN A FORMAT THAT IS COMPATIBLE WITH COMMONLY USED BRAILLE TRANSLATION AND SPEECH SYNTHESIS SOFTWARE, AND TO AUTHORIZE INSTITUTIONS OF HIGHER EDUCATION TO ESTABLISH CENTERS WITHIN THEIR SEGMENTS OF RESPONSIBILITY TO PROCESS REQUESTS FOR ELECTRONIC VERSIONS OF INSTRUCTIONAL MATERIALS; AND FOR OTHER PURPOSES.

## Subtitle

AN ACT TO PROVIDE INSTRUCTIONAL MATERIALS TO DISABLED STUDENTS IN A FORMAT THAT IS COMPATIBLE WITH COMMONLY USED BRAILLE TRANSLATION AND SPEECH SYNTHESIS SOFTWARE.

BE IT ENACTED BY THE GENERAL ASSEMBLY OF THE STATE OF ARKANSAS:

SECTION 1. (a) For purposes of this act:

(1) "Institution of higher education" means any accredited post secondary education institution, college, or university in this state;

(2) "Instructional material or materials" means textbooks and other materials written and published primarily for use by students that are required or essential to a student's success in a course of study in which a student with a disability is enrolled. The determination of which materials are "required or essential to student success" shall be made by the instructor of the course in consultation with the official making the request

1 pursuant to subdivision (b)(4) in accordance with guidelines issued pursuant  
2 to subsection (i). "Instructional material or materials" includes nontextual  
3 mathematics and science materials to the extent that software is commercially  
4 available to permit the conversion of existing electronic files of the  
5 materials into a format that is compatible with braille translation software  
6 of alternative media for students with disabilities;

7 (3) "Nonprinted instructional materials" means instructional  
8 materials in formats other than print, and includes instructional materials  
9 that require the availability of electronic equipment in order to be used as  
10 a learning resource, including, but not limited to, software programs, video  
11 disks, and video and audio tapes;

12 (4) "Printed instruction material or materials" means  
13 instructional material or materials in book or other printed form;

14 (5) "Specialized format" means braille, audio, or digital text  
15 that is exclusively for use by blind or other persons with disabilities; and

16 (6) "Structural integrity" means all of the printed  
17 instructional material, including, but not limited to, the text of the  
18 material sidebars, the table of contents, chapter headings and subheadings,  
19 footnotes, indexes, glossaries, and bibliographies. "Structural integrity"  
20 need not include nontextual elements such as pictures, illustrations, graphs,  
21 or charts. If good faith efforts fail to produce an agreement pursuant to  
22 subsection (b) between the publisher or manufacturer and the official making  
23 the request pursuant to subdivision (b)(4) in accordance with guidelines  
24 issued pursuant to subsection (i), as to an electronic format that will  
25 preserve the structural integrity of the printed instructional material, the  
26 publisher or manufacturer shall provide the instructional material in ASCII  
27 text and shall preserve as much of the structural integrity of the printed  
28 instructional material as possible.

29 (b) An individual, firm, partnership or corporation that publishes or  
30 manufactures printed instructional materials for students attending any  
31 institution of higher education in the State of Arkansas, shall provide to  
32 the accredited institution of higher education, for use by students of that  
33 school, any printed instructional material in an electronic format mutually  
34 agreed upon by the publisher or manufacturer and the school. Computer files  
35 or electronic versions of printed instructional materials shall maintain the  
36 structural integrity of the printed instructional material, be compatible

1 with commonly used braille translation and speech synthesis software, and  
2 include corrections and revisions as may be necessary. The computer files or  
3 electronic versions of the printed instructional material shall be provided  
4 to the institution of higher education, at no additional cost and in a timely  
5 manner, upon receipt of a written request that does all of the following:

6 (1) Certifies that the institution of higher education has  
7 purchased the printed instructional material for use by a student with a  
8 disability, or that a student with a disability attending or registered to  
9 attend that school has purchased the printed instructional material;

10 (2) Certifies that the student has a disability that prevents  
11 him or her from using standard instructional materials;

12 (3) Certifies that the printed instructional material is for use  
13 by the student in connection with a course in which he or she is registered  
14 or enrolled; and

15 (4) Is signed by the coordinator of services for students with  
16 disabilities at the institution of higher education and by an official  
17 responsible for monitoring compliance with the Americans with Disabilities  
18 Act of 1990 (42 U.S.C. 12101 et seq.). The Division of State Services for  
19 the Blind of the Department of Human Services, or the Department of Workforce  
20 Education may, at the request of the institution of higher education, prepare  
21 and sign the certification.

22 (c) An individual, firm, partnership or corporation specified in  
23 subsection (b) may also require that, in addition to the conditions  
24 enumerated above, the request shall include a statement signed by the  
25 student, or if the student is a minor, the student's parent or legal  
26 guardian, agreeing to both of the following:

27 (1) The student will use the electronic copy of the printed  
28 instructional material in specialized format solely for his or her own  
29 educational purposes; and

30 (2) The student will not copy or duplicate the printed  
31 instructional material for use by others.

32 (d) If an institution of higher education permits a student to  
33 directly use the electronic version of an instructional material, the disk or  
34 file shall be copy-protected or reasonable precautions shall be taken to  
35 ensure that students do not copy or distribute electronic versions of  
36 instructional materials in violation of the Copyright Revisions Act of 1976,

1 as amended (17 U.S.C. Sec. 101 et seq.).

2 (e) An individual, firm, partnership or corporation that publishes or  
3 manufactures nonprinted instructional materials for students attending any  
4 accredited institution of higher education in the State of Arkansas shall  
5 provide computer files or other electronic versions of the nonprinted  
6 instructional materials for use by students attending such institution,  
7 subject to the same conditions set forth in subsections (b) and (c) for  
8 printed instructional materials, when technology is available to convert  
9 these nonprinted instructional materials to a format that maintains the  
10 structural integrity of the nonprinted instructional materials that is  
11 compatible with braille translation and speech synthesis software.

12 (f) Nothing in this section shall be construed to prohibit a school or  
13 any educational assistant, instructor or tutor from assisting a student with  
14 a disability by using the electronic version of printed instructional  
15 material provided pursuant to this act solely to transcribe or arrange for  
16 the transcription of the printed instructional material into braille or to  
17 otherwise assist the student. In the event a transcription is made, the  
18 school shall have the right to share the braille copy of the printed  
19 instructional material with other students with disabilities.

20 (g) The president of each institution of higher education may each or  
21 in combination with others, establish one or more centers to process requests  
22 for electronic versions of instructional materials pursuant to this section.  
23 If a center or centers is established, each of the following shall apply:

24 (1) The student and the educational institution shall submit  
25 requests for instructional material made pursuant to subdivision (b)(4) to  
26 the center, which shall transmit the request to the publisher or manufacturer  
27 with the appropriate certification;

28 (2) If there is more than one (1) center, each center shall make  
29 every effort to coordinate requests within its segment;

30 (3) The publisher or manufacturer of instructional material  
31 shall be required to honor and respond to only those requests submitted  
32 through a designated center; and

33 (4) If a publisher or manufacturer has responded to a request  
34 for instructional materials by a center, or on behalf of all the centers  
35 within a segment, all subsequent requests for these instructional materials  
36 shall be satisfied by the center to which the request is made.

1       (h) Nothing in this section shall be deemed to authorize any use of  
2 instructional materials that would constitute an infringement of copyright  
3 under the Copyright Revision Act of 1976, as amended (17 U.S.C. Sec. 101 et  
4 seq.).

5       (i) The institution of higher education or any center which requests  
6 instructional material pursuant to this act shall each adopt guidelines  
7 consistent with this section for its implementation and administration. At a  
8 minimum, the guidelines shall address all of the following:

9           (1) The designation of materials deemed "required or essential  
10 to student success";

11           (2) The determination of the availability of technology for the  
12 conversion of nonprinted materials pursuant to subsection (e) and the  
13 conversion of mathematics and science materials pursuant to subsection (e);

14           (3) The procedures and standards relating to distribution of  
15 files and materials pursuant to subsections (b) and (c); and

16           (4) Other matters as are deemed necessary or appropriate to  
17 carry out the purposes of this section.

18       (j) Failure to comply with the requirements of this act shall be an  
19 act of discrimination pursuant to Arkansas Code 16-123-107(a)(2).

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APPROVED: 3/13/2001

# The Promise of Accessible Textbooks: Increased Achievement for All Students

Prepared by Skip Stahl  
National Center on Accessing the General Curriculum

## Just Beyond Reach-Appropriate Materials for All Students

Today's classrooms house an increasingly diverse student population, including not only students with widely different social, economic, cultural and language backgrounds, but also students with a wide range of physical, cognitive, and sensory disabilities. The federal No Child Left Behind Act of 2001 and the Individuals with Disabilities Education Act (IDEA) of 1997 mandate increased expectations and accountability for this diverse range of students to access, participate, and progress in the general curriculum. In order to ensure that all of these students are able to achieve in the general curriculum, particularly in light of such disparate strengths and needs, teachers must individualize instruction.

One critical barrier to individualizing instruction is the curriculum itself. Rather than offering multiple gateways to learning and understanding, the "one size fits all" printed textbooks and other resources that make up the general curriculum often serve as barriers. While conventional materials are reasonably accessible to many students, they clearly present significant barriers for students with sensory or motor disabilities; they also present a challenge to students with low cognitive abilities, those with attentional and organizational problems, and more subtle, yet equally pervasive, barriers for the largest population of identified special education students – those with learning disabilities.

With fixed, uniform learning materials, teachers are left with the burden of individualizing instruction by providing supplementary adaptations or accommodations. Unfortunately, few teachers have either the time or expertise to adequately adapt the curriculum materials to meet the diverse needs of their students (Ellis & Sabornie, 1990; Moon, Callahan & Tomlinson, 1999). Moreover, while some teachers are able to adapt materials for accessibility, it is a different matter to adapt them for instruction. Doing so requires careful attention to ensure that the goals for instruction are preserved in spite of the adaptations and to ensure that adequate learning progress has been achieved (Rose & Meyer, 2002; Edyburn, 2004). Further, teachers' efforts sometimes are ineffective because students perceive the adaptations as "different," feel stigmatized by them, and are therefore reluctant to use them (Ellis, 1997).

Teachers left to individualize

## The Scope of the Challenge

In the majority of the Nation's approximately 100,000 public and private K-12 schools, textbooks are the primary curriculum material. Eighty to ninety percent of grades 4 - 12 math and science classrooms use textbooks (Hudson, S.B. & McMahon, K.C., 2002), and that figure is similar for reading and language arts instruction (NCREL, 2000). The average yearly expenditure for textbooks and related materials in each of these 100,000 schools is approximately \$10,000 per school per year (Li, P., 2002).

textbooks }  
principal instructional material

In addition to being the principal learning resource for general education students, the use of textbooks by students with disabilities increases steadily as these students progress through the educational system. As reported from the National Longitudinal Transition Study-2 (NLTS2):

Students with learning disabilities, emotional disturbances, or speech, sensory, or other health impairments are among the most likely to use textbooks often (61% to 72% do so, compared with 41% of students with autism,  $p < .001$  for most comparisons), at least in part because they also are the most likely to have experiences reported for academic subject classes (Levine, P. & Wagner, M., 2004)

If the achievement of students with disabilities is to be assessed by the same instruments that chart the progress of general education students, these instruments need to be accessible and flexible enough to accurately chart these students' skills. Concomitantly, the curriculum resources – textbooks – that these students are provided with to acquire these skills also need to be accessible and appropriate from the outset.

= materials must be accessible by students w/ disabilities

### Accountability Raises the Bar

The preface to Section 1 of No Child Left Behind succinctly frames the purpose of the legislation: "To close the achievement gap with accountability, flexibility, and choice, so that no child is left behind."<sup>1</sup> In the four years since its enactment, the majority of teachers, school administrators and school boards have focused on its accountability mandates while parents and advocates have attended to its provisions for choice, especially as regards school placement. Surprisingly, NCLB's third keystone component, flexibility, received significantly less attention in the months immediately following the bill's passage. In many cases, it wasn't until the annual reporting mechanisms of the legislation's Adequate Yearly Progress (AYP) requirements were implemented that the issue of flexibility increased in importance.

Adequate Yearly Progress is the annual benchmark against which schools are measured. All schools must provide achievement data in four separate areas: reading/language arts, mathematics, and either graduation rate (for high schools and districts) or attendance rate (for elementary and middle/junior high schools). Schools that do not meet annual progress goals (as established by individual states) in each of these three areas may be identified as "needing improvement". Finally, AYP is also dependent upon a dis-aggregation of student achievement data by economic background, race, ethnicity, English proficiency and disability. The intent of separately assessing the progress of students in these sub-categories is to assure an eventual parity in achievement for students perceived as disadvantaged – the "achievement gap" students.<sup>2</sup>

The combination of annual progress monitoring with a deliberate emphasis on students with disabilities quickly caught the attention of school, district and state level education personnel. Between 2001 and 2004 most states had moved towards some form of large-scale assessment in order to gather the achievement data that the AYP process required; very few of these assessment initiatives adequately addressed the needs of students with disabilities, despite the fact that NCLB was specific in its intent that the majority of enrolled students were expected to participate.

<sup>1</sup> The No Child Left Behind Act of 2001, United States Department of Education, Washington, DC, 2001  
<http://www.ed.gov/policy/elsec/leg/esea02/beginning.html#sec1>

<sup>2</sup> The No Child Left Behind Act of 2001, United States Department of Education, Washington, DC, 2001  
<http://www.ed.gov/nclb/accountability/ayp/yearly.html>

Further, NCLB clearly required these large-scale assessments to be designed, from the outset, to accommodate these students:

§200.2 State responsibilities for assessments

(b) The assessment system required under this section must meet the following requirements:

...

(2) Be designed to be valid and accessible for use by the widest possible range of students, including students with disabilities and students with limited English proficiency.<sup>3</sup>

Many educators presumed that the majority of students with disabilities would qualify for “alternate” assessments, and this perception led to a qualification from the U.S. Department of Education in December of 2003. The Department clarified that NCLB limits participation in alternate assessment to 1% of the total student population<sup>4</sup> (approximately 9% of identified special education students) and that the majority of special education students were expected to participate in the same assessments as their non-disabled peers.

In contrast to previous statutes (PL94-142; IDEA; Section 504; ADA) which mandated either unique services or equal access but left compliance to be shaped by the complaints or litigation of the very individuals these laws sought to protect, accountability under NCLB was designed to reflect the responsiveness and quality of the educational system itself. As a consequence, classrooms, schools, districts and states must pay as much attention to the achievement of students identified as “disadvantaged” (including those with disabilities) as they pay to any other student.

Not surprisingly, the accountability mandates of NCLB have increased consideration of large-scale assessments that are designed from the beginning to be accessible to appropriate for students with disabilities (Thompson & Thurlow, 2002; Dolan & Hall, 2001; Dolan & Hall, 2003; Abell, M., Bauder, D. & Simmons, T., 2004). These investigations have in turn prompted a re-analysis of classroom practices (Bowe, F., 1999; Orkwis, 2003), the achievement standards on which they are based (McDonnell, L., McLaughlin, M. & Morison, P., 1997; Gloeckler, L., 2001; Thurlow, M., 2002b), and with intense scrutiny, the textbooks that create the foundation for instructional materials in the majority of the nation’s schools (Orkwis R., 1999; Gordon, D., 2002; Perl, E. & Gordon, D., 2003; Dalton, B., 2003).

### Existing Solutions

#### The Materials

Alternate format materials are commonly provided to students with disabilities in one of four categories: Braille, audio, large print, and etext. An overview of how materials in each of these four categories are created, made available to and used by students is presented below.

*Braille.* For over one hundred years the American Printing House for the Blind (APH) has created books in alternate accessible formats, including Braille, supported by an annual federal appropriation. In the early 1900s Congress began requiring that copies of embossed books be provided to the Library of Congress, and in the early 1930s, concurrent with the

Alternate format materials

- Braille

- Audio

- Large print

- e text

(electronic)

<sup>3</sup> Federal Register: December 2, 2002 (Volume 67, Number 231)

<sup>4</sup> Federal Register: December 9, 2003 (Volume 68, Number 236)

establishment of a uniform system of Braille, Congress established the National Library Service for the Blind and Physically Handicapped (NLS) at the Library of Congress. One of the purposes of establishing NLS was to provide federal coordination of the process of Braille production and distribution<sup>5</sup>. In addition to these large national Braille production and distribution centers, additional regional and state Braille distribution systems have been evolved in an effort to keep Braille editions current and readily available. A number of private Braille production companies have also been established to augment government-supported efforts.

Fed. coordination  
state & regional  
private

For the majority of the past century, the process of creating Braille has been one of retrofitting existing print works into embossed versions. Of necessity this has involved obtaining, storing and transcribing the print versions, re-creating the work in an embossed format, validating and proofing the embossed version, and mailing these versions to the Braille readers who have requested them. In addition to the complexity and time required to complete this process, the ratio of embossed Braille pages to pages of print is approximately 6:1; a 500-page print book would require nearly 3,000 pages of embossed Braille.

During the past three decades, refreshable Braille displays (RBDs) have evolved to create temporary print-to-Braille transformations. RBDs receive digital information – Braille-formatted ASCII text, for example -- and transform it into Braille characters which are then displayed on a flexible membrane via a series of movable pins. RBDs offer considerable improvements over embossed Braille in their portability and ability to create “Braille on the fly,” but their high cost limits their widespread use.

Regardless of limitations, RBDs highlight the incredible potential of digital media to revolutionize the Braille creation process. As more curriculum publishers adopt a digital workflow – creating digital source files at the beginning of the production process rather than at its end – the potential of creating Braille-ready digital versions without having to retrofit existing print works becomes technologically feasible. This possibility, with its attendant elimination of the inefficiencies and inaccuracies associated with the creation of Braille as an afterthought in the book production process, provides the foundation for the National Instructional Materials Accessibility Standard (NIMAS) detailed in section 6 below.

Digital Braille

**Audio.** In the early 1930's the American Foundation for the Blind (AFB) and its collaborating research partners pioneered the “Talking Book.” Originally created on acetate and vinyl records, this new audio format provided print disabled users with recorded human narration and some rudimentary navigation, and it quickly became popular. This new format steadily evolved into four-track cassettes, and, for the past thirty years, has been the primary format of both NLS and Recording for the Blind and Dyslexic.<sup>6</sup>

Talking Books  
- digital too

Concurrent with the development of digital source files as the preferred medium for the efficient creation of Braille, digital versions of audio books have also evolved. Research and development during the past fifteen years led to the approval of the “Digital Talking Book” standard by National Information Standards Organization (NISO) and the American National Standards Institute (ANSI) as ANSI/NISO Z39.86-2002. Synonymous with “DAISY 3”, a “Digital Audio-based Information System” format developed by the international DAISY Consortium, this ANSI/NISO standard provides the foundation elements of the recently endorsed National Instructional Materials Accessibility Standard (NIMAS). Regardless of which “flavor” of the

<sup>5</sup> National Library Service, “That All May Read”, [http://www.loc.gov/nls/about\\_history.html](http://www.loc.gov/nls/about_history.html)

<sup>6</sup> National Library Service, “History”, [http://www.loc.gov/nls/about\\_history.html](http://www.loc.gov/nls/about_history.html)

standard is applied, Digital Talking Books hold enormous potential. This format supports recorded human audio either as a stand-alone medium or synchronized to onscreen text, extensive navigation, support for additional media (images, charts and graphs, even video), and, by design, well-formatted Braille.

While these broad-based initiatives have been evolving at the national and international levels, special educators, assistive technology vendors and students have also capitalized on readily-available and cost effective digital solutions. The use of text in electronic formats (etext) by students with disabilities has increased exponentially in the past ten years, and students with visual, learning and attentional disabilities have experienced enormous benefits from the flexibility these formats have offered. Students with visual impairments may use screen readers such as JAWS or WindowEyes to have any onscreen text spoken aloud, while students who do not need to have the entire computer interface read aloud may use supported readers like WYNN, Kurzweil, Read & Write, ReadPlease and eReader to have text spoken aloud by synthetic speech. The majority of these assistive technologies will auditorize files created in Microsoft WORD, RTF, ASCII or HTML, yielding a high degree of flexibility. Many of these software applications are presently being expanded to accommodate the emerging Digital Talking Book (DAISY) formats as well.

*Large Print.* Many of the libraries and production houses that produce or distribute Braille and Talking Books also produce large print books. The National Library Service maintains a listing of large print production and distribution facilities in the United States. The use of large print materials, while fairly common among older adults with vision loss, is less common in schools. The American Printing House for the Blind does produce large print textbooks, and a number of commercial publishers routinely produce large print versions for sale, although the use of these materials in the nation's classrooms is limited.

Large print  
- not commonly  
used

*etext.* As summarized previously, the use of etext as a primary alternate format in today's classrooms has expanded exponentially in during the past ten years. With the exception of Braille, etext formats such as WORD, RTF, ASCII and HTML can provide each of the accommodations that are singly offered by audio-only and large print. etext can be highlighted (selected with a mouse or key combination) and read aloud by synthetic speech on almost any computer. While the tonal quality of computer-generated speech is not as good as recorded human voice, it is far more flexible, and continuing research in this area has resulted in increasingly high quality pronunciation. etext can be instantly increased in size, preferential color schemes can be applied, and letters, words, phrases, sentence, paragraphs and sections can be sequentially highlighted as the text is read aloud.

Etext - wave of  
the future  
- better in large  
print or audio

In the past ten years, the cost of desktop computer technology has steadily decreased while its capabilities have steadily increased. Digital scanning equipment and software, required to transform print into digital text, ten years ago cost thousands; today it costs hundreds. Once a rarity, this technology is not uncommon in schools, and it provides educators with the ability to themselves transform inaccessible print works into accessible digital formats. Faced with the mandates of federal special education and civil rights laws, special educators have turned to this solution.

Scan print to  
digital

While this approach to providing accessible versions of print curriculum materials is pragmatic and effective, it also diverts the available educational resources to product retrofitting and file format production – neither of which is an efficient use of instructional resources. These local solutions also result in materials of varying quality and usability, and often end up meeting the

But still is  
retrofitting  
- better to create  
digital at  
outset

needs of an individual student, with no potential of scalability. Clearly, the acknowledged efficiencies offered by digital tools and formats need to be combined with a national agenda in order to eliminate redundancies and allow educators to return to the task of instruction.

### Copyright Law and Efforts to Increase Widespread Availability

As part of the 1966 revisions to the Copyright Act, Section 121 – known as the “Chafee Amendment” – was enacted to allow alternate format creation by “a nonprofit organization or governmental agency that has a primary mission to provide specialized services relating to training, education, or adaptive reading or information access needs of blind or other persons with disabilities”<sup>7</sup>, without seeking permission from the copyright holder. The purpose of the Chafee Amendment was to institutionalize a process by which these specialized organizations could provide alternate format materials and to clarify the ambiguities inherent in existing “Fair Use” requirements.<sup>8</sup> The Chafee exemption was designed to expedite the creation and availability of accessible versions of selected print works (“non-dramatic literary works”) in “specialized” formats to “qualified” individuals.

= Fair Use under  
© law to create  
alternate formats

While this exemption has significantly facilitated the capacity of educational institutions, both K-12 and postsecondary, to meet the needs of students with disabilities, its requirements have also emerged as ambiguous. As a consequence, many education personnel who provide services to students with disabilities have come to assume that any “special” educator or disability support specialist may obtain or create an accessible version in any format for any disabled student struggling with access to print. Discrepancies in the interpretation of Chafee constraints are not limited to educators, however, since even widely acknowledged “authorized entities” such as Recording for the Blind and Dyslexic and the National Library Service for the Blind apply differing interpretations.

Regardless of whether the Chafee exemption is interpreted narrowly or broadly, its enactment set a precedent in its affirmation of the right of “print disabled” individuals to be provided timely access to the same information as is available to their non-disabled peers, and, pursuant to Section 504 of the Rehabilitation Act, that access should be provided in a format most appropriate to their needs<sup>9</sup>. The fact that some students with Learning Disabilities may not qualify under existing Chafee guidelines, or that students with attentional, cognitive or hearing disabilities are, in fact, excluded collides with the “Access, Participation and Progress” requirements of IDEA and the “Equal Access” requirements of the Rehabilitation Act and the ADA. It is precisely this collision that has motivated educators and disability service providers to err on the side of civil rights legislation and federal special education law when determining which students receive accessible materials and when.

Must provide to  
students w/  
disabilities  
who qualify

In the long run, the current Chafee exemption provides an inadequate foundation for the large scale provision of alternate format materials for students with print disabilities, simply because it was designed to meet the needs of a small subset of individuals on a case-by-case basis. In order to address the ever-increasing national demand for accessible instructional materials while simultaneously maintaining compliance with intellectual property law, new enterprise-level solutions need to be created.

But Chafee  
intended for  
case by case

<sup>7</sup> Public Law 104-197; Chapter 1 of Title 17, *United States Code*, SEC.121. Library of Congress <http://www.loc.gov/nls/reference/factsheets/copyright.html>

<sup>8</sup> 17 USC Sec. 107, Title 17, Chapter 1 – Subject Matter and Scope of Copyright, Sec. 107. Limitations on exclusive rights: Fair use (2002)

<sup>9</sup> OCR Letter: Los Rios Community College District, Office for Civil Rights (OCR), U.S. Department of Education, September, 1993. Case No. 09932214. Retrieved from <http://www.dlrp.org/html/topical/FAPSI/OCR/losrios.html>

Need  
“enterprise-level”  
solution

At the present time, thirty-one states have alternate format requirements specifically relating to the provision of files for the creation of Braille versions of print textbooks (AFB, 2003). In addition, a smaller but expanding number of states (Arizona, California, Georgia, Kentucky, New Mexico, and New York) either require publishers to provide accessible versions of textbooks, require publishers to provide digital versions, or give preference to publishers who provide accessible versions (Perl et al., 2003).

While the Braille laws are longstanding the expanded state legislation requiring accessible or digital versions of textbooks for a broader category of "print disabled" students has been enacted in the past seven years, primarily as the result of a Section 121 copyright exemption, the Chafee Amendment.

expand beyond  
Braille into  
accessible or  
digital for  
students w/ other  
disabilities

The Chafee Amendment enlisted "authorized entities" to provide permission to "blind or other persons with disabilities" with accessible versions of print materials in "specialized formats". Originally intended as a means of providing print disabled individuals with accessible versions, Chafee has come to be used by special education personnel in schools, and content transformation organizations (Recording for the Blind and Dyslexic, BookShare, etc.) as the basis for the large-scale creation and distribution of accessible textbooks, without compensation to either publishers or rights holders. This widespread application of Chafee has generated considerable concern among publishers and copyright holders (Adler, 2002), some of whom believe that many current initiatives exceed the Chafee restrictions.

The current system of creating and distributing alternate format instructional materials to print-disabled students is a patchwork of national and local efforts. Conversion entities and repositories who perceive themselves to be "Chafee-compliant" offer a range of alternate formats. Recording for the Blind and Dyslexic produces audio versions, BookShare produces digital text versions in the Digital Talking Book format, American Printing House for the Blind produces both embossed and electronic Braille, and large print, American Foundation for the Blind produces Digital Talking Books, the National Library Service for the Blind produces Digital Talking Books and Braille. For-profit commercial entities such as Duxbury Braille Systems and ghBraille and others also contribute their expertise to the other providers or directly to states and districts. Finally, with the advent of cost-effective and efficient digital scanning technology, local districts and schools have significantly increased their capacities to digitize books directly into more accessible digital formats.

Current system  
a patchwork

While this array of efforts reflects both the importance of alternate format materials and the deep commitment of alternate format providers, it is also rife with redundancy, inefficiency and inaccuracy. The current options for acquiring alternate formats also results in the creation of materials that vary widely in quality, and perpetuates a process of localized and highly "disability-specific" solutions where efforts to support one sub-group of students with disabilities often do little to support the needs of the other groups.

### Working Towards a National Approach

On July 27, 2004, the United States Department of Education officially endorsed the National Instructional Materials Accessibility Standard (NIMAS). This voluntary file format reflects the consensus of disability advocacy groups, publishers, technology experts, and production and distribution experts. Version 1.0 of NIMAS details the baseline technological specifications for the creation of valid digital source files of preK-12 textbooks and related instructional materials. NIMAS Version 1.0 is sufficiently flexible to create multiple student-ready versions (Contracted Braille, Digital Talking Book, etc.) from the same publisher-provided source file package,

NIMAS  
NATE std.  
for digital  
source files  
creation of  
multiple formats  
from digital source

eliminating the need for repetitious and inefficient transformations (print-to-Braille; print-to-ebook, etc.). The current standard codifies the minimum requirements for a subset of students with disabilities, particularly those with blindness/low vision and other print disabilities.

NIMAS marks a major step toward ensuring that the ubiquitous textbook will be within reach of students with disabilities at the critical point of instruction in an accessible and usable form. NIMAS will therefore begin to serve the needs of states and local authorities as they endeavor to provide students with disabilities with the opportunity to learn, a prerequisite for participation in standards-based reform and accountability. (Elmore, R.F. & Fuhrman, S.H. 1995; Guiton, G. & Oakes, J., 1995). NIMAS 1.0 is an essential first step that provides the foundation for the subsequent creation of a variety of alternate format versions designed to meet the needs of students with a range of disabilities.

The Department of Education has recently awarded two cooperative agreements to CAST to continue the NIMAS initiative. The NIMAS Development Center will continue the refinement of the NIMAS standard and the NIMAS Technical Assistance Center will provide support to states, publishers and other stakeholders in implementing the standard nationwide.

### The Benefits of Accessible Textbooks

What instructional realities underlie the exponential increase in national, state and local attention that is being paid to accessible instructional materials, and how will the increased availability and quality of these materials increase student achievement?

*For students with visual impairments.* Approximately 94,000 blind/low vision students are provided special education support under IDEA, and for the vast majority of these students, access to alternate format materials is essential (source: American Foundation for the Blind, <http://www.afb.org/Section.asp?SectionID=8> ). For a subset of this population, Braille versions of textbooks are the preferred format, and on a daily basis in every state the timely provision of quality Braille textbooks is dependent upon the seamless cooperation of a dispersed network of publishers, textbook adoption entities, alternate format providers, Braille transcribers, teachers of the visually impaired and students. Even when this network of support and provision works efficiently, the time and money required to produce Braille is staggering.

Braille expensive  
time consuming

“A book the size of the biology text I have with me today will take approximately nine months to transcribe.” Most transcribers work on several books at one time - and regularly provide volumes of Braille to stay ahead of the class syllabus. A book like this - 1,183 pages - would translate into 4,732 pages in Braille. The average cost to produce this Braille book would be \$16,562.

*(Barbara McCarthy, Director, Library and Resource Center, Department for the Blind and Vision Impaired, Richmond, VA 23227. Testimony before the Health, Education, Labor, and Pensions Committee United States Senate hearing on S.2246. The Instructional Materials Accessibility Act: Making Materials Available to All Students, June 28, 2002.)*

Thirty-one states with “Braille Laws” require textbook publishers to provide digital files compatible for Braille transcription. These required formats include ASCII, ICADD-22, SGML, .brf, WORD, and RTF. In addition, the majority of states require these files to be provided free of charge. As a consequence, publishers must generate multiple files in multiple formats for multiple jurisdictions, with no financial incentive to produce anything beyond the baseline requirements.

multiple  
formats  
for different  
states

*A unified national approach would eliminate many of the current file format incongruities while simultaneously meeting the requirements of individual states, It would increase the quality of Braille-compliant digital files and significantly accelerate the delivery of alternate format materials to students with visual impairments.*

= Need un. form approach

*For students with physical disabilities.* Approximately .8% of the population of students receiving services under IDEA and Section 504 of the Rehabilitation Act of 1973, or 188,000 K-12 students are identified with orthopedic or physical disabilities. While not all of these students experience challenges with print materials, a significant number of them do. The provision of alternate format materials to students with physical disabilities, while not as multi-layered nor as time-consuming as the provision of alternate formats to students with visual impairments, is nevertheless fraught with complexities.

First and foremost, the digital files that are provided to many states for conversion into Braille are generally unsuitable for students whose primary print disability is physical. Since the required digital files are designed primarily to be transformed into a specific "student ready" format (in most cases, Braille) they are not developed with direct display or direct use by students with limited dexterity in mind. It is possible to apply layout and navigation structure (unit, chapter, section, head, subhead, paragraph etc.) or emphasis (bold for glossary terms, for example) as well as validate page number correspondence, but this is a time-consuming process and it is often easier and less costly to scan the print version into a digital format. For the majority of students with physical disabilities, navigation through the text becomes a significant issue since students unable to physically manage a print book are generally unable to use a mouse.

Once supplied with usable structure, the digital file becomes inherently more navigable using voice control, eye gaze, head pointer, single-switch access or keyboard. Unfortunately, the majority of alternate format materials created for students with physical disabilities do not contain images or graphics, so these students are often forced to alternate between the on-screen display of text and the graphical elements in the textbook.

*A more unified approach will allow for the creation of varied, well structured and complete student-ready versions, including easily navigable digital files with images, from the same source file, eliminating redundancies and simultaneously improving the accuracy of the alternate version and aligning it with the print work.*

*For students with learning disabilities.* As of 2001, students with specific Learning Disabilities (such as dyslexia, ADHD, etc.) comprised slightly over 45% of all K-12 students with disabilities. (NCES <http://nces.ed.gov/programs/digest/d02/tables/dt052.asp> ). While not all of these students struggle to extract meaning from print, and while not all of them may qualify for alternate format materials under the Section 121 copyright exemption, they all evidence unique and challenging learning needs of varying degrees of intensity. A large majority of Learning Disabled students do struggle with print materials, however, and, setting aside for the moment the issue of who does or who does not qualify for alternate format materials under existing copyright law, both special education legislation (IDEA) and civil rights laws (ADA, Section 504) have repeatedly reinforced the rights of students with disabilities to equal learning opportunities, including access to appropriate and accessible textbooks.

Much in the same way that students with visual impairments cannot read a standard 7th grade Social Studies textbook because they cannot see it, students with learning disabilities cannot keep pace in the same class – not because they find the Social Studies content too challenging – but because they cannot read sufficiently to keep pace with their non-disabled peers. In these circumstances, if these students have access to alternative representations of the printed work (audio versions, for example, via synthetic speech or recorded human voice); they will then not be denied access to educational achievement opportunities like Social Studies solely on the basis of their print disability.

The debilitating impact of print disabilities continually emerged through the data compiled from the National Longitudinal Transition Study-2 (NLTS2). Of Learning Disabled students on IEP or Section 504 plans, 41.2% had test read to them as an accommodation, a percentage higher than for students with visual impairments (35.5%)<sup>10</sup>. Similarly, the percentage who required “additional time required to complete assignments” (65%) the highest of any population of special education or Section 504 students with the exception of Traumatic Brain Injury<sup>11</sup>. Clearly the reliance on print materials in the process of education has a profound and compromising impact on Learning Disabled students.

*The availability of textbooks in accessible alternative formats suitable for representation via human or synthetic speech would significantly increase the independent use of these core curriculum resources by students with Learning Disabilities.*

*For students who are Deaf or hard of hearing.* Students with hearing impairments are not routinely considered to be “print disabled.” However, young children with hearing impairments either have little or no exposure to the prosody, vocabulary, syntax and semantics of spoken language and it is this foundation upon which the literacy skills of reading and writing are based. Hearing impaired students who acquire sign language as their primary medium of communication internalize a linguistic structure that is marked different from standard English; as a consequence, few Deaf students develop beyond a fifth grade reading level, and this factor alone becomes a significant limitation as these students attempt to progress through school. In fact, some of the most recent research on the literacy level of 17- and 18-year-old Deaf students yielded a median reading grade level score of 4.0 on the Stanford 9<sup>12</sup>.

b/c never  
heard spoken  
word  
& first language  
is sign language

During the past decade, research has emerged which documents a strong causal relationship between proficiency in sign language (specifically, ASL) and proficiency in standard English (Strong & Prinz, 1997; Prinz & Strong, 1998; Padden & Ramsey, 2000). Researchers who have found promise in this “bilingual” approach to improving Deaf literacy also note that providing signed equivalents to standard English (or English equivalents for sign) has generally relied upon the sequential display of information – first sign, then English, for example, primarily because the logistics of creating an accurate, efficient and practical approach to creating a simultaneous display – both sign and English available at the same time – have been daunting. There is wide spread agreement, however, that technologies such as the Signing Avatar and the use of

= bilingual  
approach  
Sign + English

<sup>10</sup> Levine, P. & Wagner, M. *Secondary School Students' Experiences in Secondary Education Classrooms, National Longitudinal Transition Study-2 (NLTS2)*, SRI, Menlo Park, CA, 2004  
<http://www.nlts2.org/search/tables/7/NPR1D3afm.html>

<sup>11</sup> Ibid

<sup>12</sup> Holt, Judith A., Traxler, Carol B., & Allen, Thomas E. 1997. *Interpreting the Scores: A User's Guide to the 9th Edition Stanford Achievement Test for Educators of Deaf and Hard-of-Hearing Students. Gallaudet Research Institute Technical Report 97-1.* Washington, DC: Gallaudet University.) <http://gri.gallaudet.edu/Literacy/#reading>

concatenated video recordings of human interpreters can increasingly be combined with ever-increasing power of computers to create instantaneous onscreen translations from one language to another.

*The increased availability of digitally-based standard textbooks provides the necessary foundation elements for the subsequent creation of learning resources that contain both signed and text versions of the same instructional content.*

*For students with mental retardation, traumatic brain injury and other cognitive impairments.* This subset of students with IEP's or Section 504 plans, though ineligible for alternate format materials under the "Chafee" copyright exemption, often find their educational opportunities limited by the inflexibility of instructional materials. In contrast to the drill and practice approach to basic "sight word" development that permeated the reading instruction of students with cognitive disabilities for many years, recent findings (Gurry, S. & Larkin, A. (1999); National Reading Panel) indicate a shift in awareness towards a research-based approach. Koppenhaver, Erickson & Skotko, (2001) and their colleagues at the Center for Literacy and Disabilities Studies suggests that students with mental retardation benefit from the same research-based instructional approaches that work for other students who are learning to read (National Reading Panel, 2000). That is, reading instruction that:

- Focuses on reading for meaning
- Provides direct instruction in reading skills such as decoding
- Offers appealing print and electronic texts.

The type of reading instruction envisioned by the National Reading Panel contributors and by other researchers is readily facilitated by the availability of flexible, adjustable versions of core instructional materials.

Media that can be transformed from one modality to another (text-to-speech, for example) or used to customize the display of a page into discreet and manageable chunks can help to focus the attention of distractible students or help differentiate salient from less important information. Students with mental retardation often experience difficulty with motivation and attention<sup>13</sup>. These students clearly benefit from engaging and adjustable displays, or displays that support constrained presentations of information. Further, research has shown that students with mental retardation have difficulty understanding abstract concepts, especially when the abstractions cannot be effectively concretized or represented as an aid to understanding<sup>14</sup>.

*Accessible, flexible alternate versions of core curriculum materials can increase engagement, attention and achievement by offering adjustable levels of complexity, novelty and mixed media.*

### **Challenges to Be Overcome**

**Technological Challenges.** The initiative to establish version 1.0 of the National Instructional Materials Accessibility Standard (NIMAS) is designed to provide the foundation for the subsequent creation of a variety of alternate format versions designed to meet the needs of students with visual, physical, hearing, learning and cognitive disabilities. The NIMAS file

Create alternate formats from NIMAS

<sup>13</sup> Hickson, L., Blackman, L.S. & Reis, E.M. (1995). *Mental retardation: Foundations of educational programming*. Boston: Allyn & Bacon

<sup>14</sup> Beirne-Smith, M., Ittenbach, R. & Patton, J.R. (1998). *Mental retardation (5th ed.)*. Upper Saddle River, NJ: Prentice Hall.

package will consist of an XML (eXtensible Markup Language) source file and associated PDF (Portable Document Format) files that contain the graphical elements included in print textbooks. One proposed workflow involves the distribution of the NIMAS file package to centralized repository for validation and subsequent distribution to third-party content conversion organizations (Recording for the Blind and Dyslexic, BookShare, American Printing House for the Blind, etc.) who will in turn create a variety of student-ready versions for distribution to schools and states. Alternatively, the NIMAS file package might be distributed directly to states that have established digitally-based alternate format distribution mechanisms (e.g., Texas Braille Production Center, the Kentucky Digital Text Network, etc.). Regardless of the distribution established, a number of technological challenges need to be addressed.

\*  
- Require publisher  
to distribute  
NIMAS package  
repository

**Legislative Challenges.** As mentioned previously, six states have extended the scope of their existing Braille laws to encompass broader requirements for accessible textbooks. While these state-level mandates are progressive in their intent and designed to facilitate the state's capacity to meet its obligations under existing federal special education and civil rights laws, they are also duplicative, and, in some cases, divisive. Only three of the six states (Kentucky, Arizona and New Mexico) specifically reference an alignment with a "national file format" (NIMAS) once endorsed by the United States Department of Education; without this acknowledged alignment with a unified national format, some existing and emerging state legislation threatens to perpetuate redundancies and inefficiencies.

\*  
Must align/ NIMAS

In order to prevent this effect, curriculum publishers, third-party content transformation organizations, and disability advocacy groups have proposed and supported first the Instructional Materials Accessibility Act of 2002 (IMAA) and, more recently, the inclusion of a mandated NIMAS compliance in the reauthorization of IDEA. Both of these federal legislative efforts are designed to achieve the same goal: a federal mandate for both states and publishers to adopt a unified approach to address this issue.

**Commercial Challenges.** The systematic provision of accessible alternate format versions of print materials began with the invention of Braille in the early 1800s<sup>15</sup>. The institutionalization of this effort in the United States occurred in the early 1930s with the establishment of the National Library Service for the Blind at the Library of Congress<sup>16</sup>. Government-supported organizations like Recording for the Blind and Dyslexic and American Printing House for the Blind were created to address an expanding and differentiated need. The steady emergence of additional non-profit and for-profit alternate format organizations during the past fifty years has attested to the sustained need for these materials.

Inherent across all of these initiatives has been an acknowledgement that the provision of alternate format versions of print materials is an expensive and time-consuming process. Historically, practice has dictated that individuals with "print disabilities" be provided with these versions at reduced or no charge, and, concomitantly, that print publishers not be expected to produce this content, but to facilitate its production at little or no cost to the consumer. Since the passage of the first Elementary and Secondary Education Act (ESEA) in 1965 and the

<sup>15</sup> Roblin, J. (1952) *The Reading Fingers: The Life of Louis Braille*. Translated from the French by Ruth G. Mandalian. (Original in English, 1955) New York: American Foundation for the Blind. (Reprinted, 1993)

<sup>16</sup> Perl, E. (2002). Federal and State Legislation Regarding Accessible Instructional Materials. National Center on Accessing the General Curriculum, CAST, Inc. Wakefield, MA. Retrieved from <http://www.cast.org/publications/index.html>

subsequent evolution of state departments of education as distribution points for “categorical” aid (Title I, Title IV, Title VI, etc.)<sup>17</sup>, these state-level requirements have steadily increased.

Concurrent with this increased systemic demand, the local (site-based) transformation of print textbooks into accessible digital versions -- WORD or HTML or RTF files, for example -- has also increased exponentially. As previously mentioned, special education personnel at the state, local and district level interpret the Chafee copyright exemption as providing them with a legal means of creating accessible versions of textbooks to students identified as print disabled. While this approach offers a pragmatic solution to meeting the needs of students in a timely manner, very few of these local efforts include any embedded security (digital rights management) to ensure their limited distribution and use. Further, there is nothing in the Chafee exemption that requires the purchase of a print version of the textbook for students who are eligible for alternate format versions, although in practice the print version is purchased as an artifact of a site’s purchasing policies.

Finally, as these localized accessible format creation efforts become more widespread, the determination of which students are actually eligible to receive these versions is often left to special education personnel who may or may not be fully aware of the constraints imposed by the Chafee exemption. Even when special educators are aware of the requirements, the division of students into “haves” and “have-nots” may appear arbitrary and capricious, and fundamentally inequitable. Faced with providing some students with accessible materials and not others, most educators will decide to support the equal access provisions of federal special education and disabilities law in favor of abiding by copyright constraints. This, in turn often begs the question of why these materials should not be made available to students who can certainly benefit from them, but who fall well outside the population sanctioned by Chafee (English Language Learners, for example).

This cluster of challenges – the cost to publishers of responding to a myriad of state requirements with no compensation; the widespread increase in unmonitored localized solutions that may negatively impact textbook sales, and increased pressure to extend the provision of these materials to an ever-widening circle of students – has created a significant challenge to the creation of a commercial solution.

A commercial solution offers one of the most compelling scenarios for the timely provision of high quality accessible textbooks to students with, or without, print disabilities. Many textbook publishers are now routinely acquiring the rights to reproduce materials digitally as well as in print. If states, districts, schools and classrooms were willing to purchase these materials in addition to or as an alternative to traditional print textbooks, it would eliminate the need to perpetuate ad hoc local solutions. Accessible commercial versions of textbooks could benefit from cooperative arrangements between existing third-party alternate formats organizations – experts in designing to meet the needs of their constituents – and commercial publishers, who themselves would be incented to invest in research and development to insure the high quality of these products. In order for commercial publishers to envision the viability of this type of “market” solution, they will need to perceive the willingness of states, districts and schools to purchase these materials.

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<sup>17</sup> Ravitch, D. (2000). The reauthorization of the federal Elementary and Secondary Education Act: An Introduction, *Brooking Papers on Educational Policy*. Brookings Institute, Washington, DC.

In order to address each of the three challenges listed above – technological, legislative and commercial – each stakeholder group will be required to shift and adapt its current practice.

### **Adjustments by Each Stakeholder Group Will Benefit All**

**Publishers.** Textbook publishers will need to develop the capacity to create properly formatted XML files. Some of the major publishing houses have already or are in the process of migrating to a digital (XML) workflow, and for these companies the creation of the agreed-upon source files will be an extension of an existing process. For publishers who do not have XML file creation capabilities or for whom that process would be cost prohibitive (smaller, supplemental publishers, for example), the creation of these files will be more problematic and will likely require new and innovative partnerships. All publishers will need to be provided with technical assistance, guidelines and models in order for them to create valid and properly-structured XML files. Finally, publishers will need to be convinced that the technological investment will contain their current costs, facilitate their ability to respond to multiple state and local requirements, maintain quality, and align with intellectual property law.

Develop XML files

**Third-Party Conversion Organizations.** Existing “Chafee Compliant” non-profit alternate format conversion organizations like Recording for the Blind and Dyslexic, BookShare, American Printing House for the Blind, and others will need to envision strategic partnerships that place their expertise at the beginning of a publisher’s product cycle rather than just at the end of it. If publishers produce only print-based materials then the primary work of third-party organizations is the transformation of those print works into accessible formats. Once publishers are able to routinely produce digital files, however, the need for third-party conversion will diminish incrementally, while the opportunity to incorporate accommodations and alternatives directly into curriculum materials – a universal design approach – will concomitantly increase. A collaborative approach pairing the disability and alternate format expertise of the third-party conversion organizations with the editorial and instructional expertise of curriculum publishers will likely result in more innovative and accessible products than either organization could independently create.

Help publishers develop XML files

**States, Districts and Schools.** Educators who teach and support students with disabilities will need to assess the benefits of embracing a more proactive and systemic approach to acquiring alternate format materials for their students. While existing district or school-level solutions may address the immediate needs of individual students, in most instances these solutions are neither scalable nor cost-efficient, they often yield curriculum materials of inferior quality, and, in some circumstances, these initiatives may violate copyright law. Further, and perhaps of most importance, these local content transformation efforts divert the efforts of education personnel away from the process of instruction.

States that have enacted accessible textbook legislation (Braille and beyond) are most likely to have also established centralized accessible textbook distribution systems to support those mandates. The purpose of these centralized approaches is to insure copyright compliance, quality, and timeliness and to minimize redundancy and inefficiency. In many circumstances the management and oversight of these systems by states also frees district and school education personnel from the process of retrofitting materials and allows them to redirect their time to instruction.

\* Create centralized distribution system

To further institutionalize the expectation that students with print disabilities will be provided with accessible and appropriate alternate format versions some states have added an additional consideration to their Individual Education Plan (IEP) and Section 505 Plan documents. Asking

the site-based teams who best know the needs of individual students to document whether or not the student is eligible to receive accessible alternate format curriculum materials reinforces the expectation that these materials will be provided.

Finally, as the requests (or, in some cases, the requirements) for accessible materials from states, districts and schools increase, these entities need to express their willingness to purchase these products. Textbooks and associated instructional materials can be made accessible by design, and the availability of these versions as market alternatives will only occur if the market is perceived as viable.

### **Accessible Textbooks: Reaching Every Student, Then Teaching Every Student**

While the primary purpose of establishing either a national alternate format distribution process or a market based solution is to ensure the timely provision of accessible materials to students with disabilities, it is important to maintain the focus that these materials will be used to support the education of these students. From that perspective, it is important to address how, and to what extent, alternate, accessible versions of textbooks enhance student achievement. This emphasis on increasing the achievement of all students, including those with disabilities and other learning needs, is a hallmark of NCLB, and needs to be an active consideration as accessible, alternate format materials become more widely available.

As previously mentioned, the existing NIMAS initiative is developing within the constraints imposed by existing copyright law, and the Section 121 exemption (Chafee Amendment) that address the needs of a specific subset of students with print disabilities. As referenced in the NIMAS version 1.0 report<sup>18</sup>:

Students who manifest a print disability as the result of a physical or sensory impairment (blind, low vision and some learning disabled students) currently qualify, while students who may struggle equally to decipher or extract meaning from print (ADHD, Deaf and hard-of-hearing, students with limited cognitive of abilities, etc.) do not. (p.36)

\* Chafee  
Blind + LD qualify  
Deaf + DD do not  
"physical or sensory impairment"

Regardless of which students are presently eligible to receive alternate format textbooks, the fact remains that the precedent-setting consensus building achieved by the National File Format Technical Panel has established both a foundation for the creation of accessible, alternate format versions and the broad-based momentum necessary to deliver these versions to students who require them. In addition to the states (Kentucky, Arizona, New Mexico) that have already referenced the adoption of NIMAS in their state-wide accessible textbook legislation, and major publishing houses (Thompson, Pearson, Houghton-Mifflin, McGraw-Hill) have pledged NIMAS adoption as well. Further, major postsecondary publishers and a number of organizations working to secure accessible versions of college textbooks have indicated that they will adopt the NIMAS standard, once formalized, in their procurement processes.

This momentum towards a standardized approach raises a significant question: since accessible versions of core curriculum print textbooks have previously not been available in sufficient quantities to measure their broad impact within the context of academic achievement, for both students with disabilities and those without, what impact do they have? It is known that students with a wide range of disabilities (including those who currently qualify as persons with print

<sup>18</sup> National File Format Technical Panel, National Instructional Materials Accessibility Standard Report – Version 1.0, National Center on Accessing the General Curriculum, CAST, July, 2004, retrieved from <http://nimas.cast.org/about/report/index.html>

disabilities and those who do not) can benefit from technology-based instructional solutions, and some of this documentation was provided in the NIMAS Version 1.0 report<sup>19</sup>.

A recent extensive summary of research in this area has been prepared by the National Center on Accessing the General Curriculum (Strangman, Hall & Meyer 2003). Among many studies in this area are the following:

- Students with language-related disabilities showed positive effects for word recognition, comprehension, and fluency when using digital texts with synthetic, syllable, or letter name-level synthetic speech transformations. (Elbro, Rasmussen & Spelling, 1996)
- Students with attentional, organizational and learning disabilities have shown increased academic gain when exposed to technology-supported concept mapping strategies. (Anderson-Inman, Knox-Quinn & Horney, 1996; Herl, O'Neil, Chung & Schacter, 1999)
- Students who are Deaf or hard of hearing show consistent academic gains when provided with the sequential text highlighting and supportive captions available with digital instructional materials. (Mcinerney, Riley & Osher, 1999; Andrews & Jordan, 1997)
- Students with low cognitive abilities demonstrate increased functional skills when exposed to flexible technologies that maximize their strengths while helping to compensate for their weaknesses. (Wehmeyer, Smith, Palmer, Davies & Stock, 2003; Carroll, 1993)

*(NIMAS Version 1.0, p. 36)*

We know that visually impaired students cannot see words or images, and that alternate format versions, specifically digital, can more easily be converted to Braille or voice with text descriptions of images. Students who cannot hold a print book or turn its pages, benefit from the virtual "pages" of a digital book can be turned with a key press or a switch. Students who cannot decode the text, can benefit from any words read aloud by a computer. Going beyond baseline accessibility, students who lack background vocabulary can benefit from definitions (in English or another language) that can be readily provided. Moving beyond accessibility, digital texts can also be embedded with supports for syntax, semantics, and comprehension (Boone & Higgins, 1993; Dalton, Pisha, Eagleton, Coyne & Deysher, 2001; MacArthur & Haynes, 1995).

The advantage of digital source files is that these alternatives, and many others, can be created from them and made available on an individual student basis. These versions then become available for students who require them, and, ultimately, an option for students who may prefer them. They enable teachers to individualize materials in previously unimaginable ways (Hay, 1997; Lewin, 2000; MacArthur et al., 1995). Customized alternatives can substantially reduce the barriers found in traditional texts, and research evidence demonstrates the benefits of using such digital materials in the classroom (Barker & Torgesen, 1995; Bottge, 1999; Dalton et al., 2001; Erdner, Guy & Bush, 1998; MacArthur et al., 1995; Wise, Ring & Olson, 1999).

### **Conclusion**

Technological advances during the past fifty years have resulted in alternate format materials, providing those with disabilities new access to a world of information and ideas that traditionally has been restricted to printed text. Consistent Braille formatting, high-quality audio versions,

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<sup>19</sup> Ibid

synthetic speech, and electronic text are just some examples. Because it offers significantly increased flexibility and enables rapid transformations from one media type to another, electronic text in particular is emerging as the foundation of a revolutionary approach to the provision of alternate format materials. As that approach is realized, students with disabilities will be provided with a wide range of accessible and individualized learning materials; materials that have been extracted from a single digital source file. The efficiency of this approach is immediately apparent, and while there are numerous legal, commercial and technological issues to be overcome, everyone stands to gain from achieving a solution.

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National Center  
on Accessing the  
General Curriculum

**NCAC**

## The Promise of Accessible Textbooks: Increased Achievement for All Students

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*Policy Brief*

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## Frequently Asked Questions Series Factsheet #243

National Center on Accessible Information Technology in Education

### **Which states have accessible textbook laws and what do they say about file formats?**

Educational entities often struggle with questions as to which file formats are best for distributing online materials. Traditionally, online documents have been delivered primarily using HTML. However, a growing number of documents in education are distributed in other formats, such as Adobe Portable Document File (PDF) and Microsoft Word. Whether these file formats are accessible is not a simple question with a yes or no answer. For guidance in making this determination, see the AccessIT Knowledge Base articles Is PDF accessible? (<http://www.washington.edu/accessit/articles?2>) and How accessible are Microsoft Word documents? (<http://www.washington.edu/accessit/articles?266>)

Additional guidance comes from the growing number of states that have passed laws or implemented purchasing policies that address textbook accessibility in both postsecondary and K-12 education. These laws have arisen from one of the key challenges faced by many students with disabilities: obtaining academic print materials in an alternate format. Students who are unable to read standard print (for instance, students with blindness, low vision, or learning disabilities) require their materials in an alternate format, such as Braille, large print, or audio. Increasingly, the medium of choice is electronic text, since students with print disabilities can read, navigate, and search the text using off-the-shelf information technology, perhaps in combination with assistive technologies such as synthesized speech.

States vary in their approach to legislating this problem. Some states simply require that publishers provide electronic versions of printed textbooks upon request (for example, see California Assembly Bill 422 ([http://info.sen.ca.gov/pub/99-00/bill/asm/ab\\_0401-0450/ab\\_422\\_bill\\_19990915\\_chaptered.html](http://info.sen.ca.gov/pub/99-00/bill/asm/ab_0401-0450/ab_422_bill_19990915_chaptered.html)) and Washington SB 6501 ([http://www.leg.wa.gov/pub/billinfo/2003-04/Senate/6500-6524/6501-s\\_sl\\_03292004.txt](http://www.leg.wa.gov/pub/billinfo/2003-04/Senate/6500-6524/6501-s_sl_03292004.txt))), while others give preferential procurement status to publishers providing alternative formats for textbooks (see Kentucky SB 243 (<http://www.lrc.state.ky.us/recarch/02rs/SB243/bill.doc>), only available as a Microsoft Word document).

For a list of accessible textbook laws in all fifty states, see the report U.S. States and Territories Accessible Curriculum Survey (<http://nimas.cast.org/about/resources/statessurvey.html>) from CAST (founded as the Center for Applied Special Technology). Also, the National Center on Accessing the General Curriculum (NCAC) at CAST has produced several research papers regarding the impact of existing policies on access to, participation in, and progress within the general education curriculum. Consult the Policy section of the NCAC Publications

(<http://www.cast.org/publications/ncac/>) website for a complete listing. A particularly relevant resource is their NCAC Policy Group White Paper for Policy, Property & Permissions ([http://www.cast.org/publications/ncac/ncac\\_whitepaper.html](http://www.cast.org/publications/ncac/ncac_whitepaper.html)), which includes detailed profiles of the accessible textbook efforts in California, New York, Massachusetts, Texas, and Kentucky.

Kentucky SB 243 and its accompanying regulations (<http://www.lrc.state.ky.us/kar/704/003/455.htm>) (704 KAR 3:455) marked the first time a state had formally documented a hierarchy of file formats based on their inherent accessibility. Prior to this, laws had documented general requirements of chosen file formats, but provided little or no guidance as to which file formats best met this requirement. One common criterion in the textbook laws for measuring the accessibility of file formats is that file formats must preserve documents' "structural integrity." A standard definition of this concept, applied with slight variation in several state laws, is this (quoted from WA SB 6501 ([http://www.leg.wa.gov/pub/billinfo/2003-04/Senate/6500-6524/6501-s\\_sl\\_03292004.txt](http://www.leg.wa.gov/pub/billinfo/2003-04/Senate/6500-6524/6501-s_sl_03292004.txt))):

"Structural integrity" means all instructional material, including but not limited to the text of the material, sidebars, the table of contents, chapter headings and subheadings, footnotes, indexes, glossaries, graphs, charts, illustrations, pictures, equations, formulas, and bibliographies.

Some laws that require "structural integrity" explicitly define a default file format to be used if the publisher and educational entity fail to agree as to which file format best supports the requirement. In California AB 422, the default is ASCII, whereas Washington SB 6501 favors "a verified and valid HTML format." The Kentucky regulations provide much more extensive guidance about the accessibility of file formats by establishing three levels of compliance:

- Level 1 ("full compliance") includes XML, XHTML, or HTML format.
- Level 2 ("provisional compliance") includes RTF or Microsoft Word.
- Level 3 ("marginal compliance") includes "unlocked PDF."

Both Kentucky's K-12 and postsecondary laws are profiled in more detail elsewhere in the AccessIT Knowledge Base:

- The Kentucky Postsecondary Textbook Accessibility Act: A Promising Practice on Textbook Accessibility Legislation (<http://www.washington.edu/accessit/articles?216>)
- Kentucky's K-12 Accessible Textbook Law: A Promising Practice on Accessibility Law for K-12 (<http://www.washington.edu/accessit/articles?267>)

New York later implemented a similar approach to Kentucky's in Chapter 219 of its Education Laws of 2003 (<http://www.vesid.nysed.gov/specialed/publications/persprep/chap219.htm>), though its order of file formats differed from that of Kentucky. New York identified full-text DAISY 3 as the preferred file format, followed by HTML, then by "structured PDF," and then by "Microsoft Word or ASCII." Notice that the order of PDF and Word is the reverse of the order in Kentucky.

DAISY 3 is a standard format for digital talking books. It is an XML language that allows human narration to be marked up so that it's easily navigable, and it optionally allows for synchronization of the narration with the full text of the document so that it's fully searchable. E-text readers can easily navigate through DAISY 3 documents with full appreciation of its

organizational structure. More information about DAISY is available from the DAISY Consortium (<http://www.daisy.org/>). With the reauthorization of IDEA in 2004, the U.S. government called for a "National Instructional Materials Accessibility Standard" (NIMAS) and subsequently charged CAST with creating the standard, which it has done and which is an extension of DAISY 3. Since this is a federal standard, publishers should be better able to systematically address the needs of students with disabilities nationwide, without the challenges associated with delivering different types of accessible documents to different states because of the variance in state laws.

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## Process of Requesting Alternative Text

1. Qualifying student completes "Books in Alternative Request Form"
  - a. The form should be completed as soon as the student registers for classes, preferable 6 – 8 weeks prior to class start date.
  - b. The completed form should include: class name, catalog #, instructor, book title, author, publisher, ISBN, edition and copyright year.
2. CSD will proceed in obtaining the Alternative text as soon as the completed form is submitted.
  - a. Resources to check before contacting publisher
    - i. Our own CSD inventory, from past request.
      1. If available, make copy for student
    - ii. Check out Recording for the Blind and Dyslexic
      1. If available, place an order
  - b. Contact publisher
    - i. Refer to completed form to determine the publisher
    - ii. Find publishers website and email address
    - iii. Check to see if it's available in an alternative text format
      1. If available, click on permissions and complete the form and indicate the format desired.
      2. Some publishers require the name of the bookstore and the date the book was purchased for proof of purchase.
      3. Other publishers will request written communication
      4. Or publishers will mail a permission form to be signed and completed.
  - c. If not available from the publisher, review other sources.
    - i. Scan the material
      1. Student will need to use WYNN, Jaws, etc
    - ii. Have the material read
      1. Hire a reader
        - a. Reader needs to complete employment & tax forms
        - b. Need to supply a 4-track cassette recorder
        - c. Need the class syllabus
3. Tracking the Alternative Text
  - a. Follow-up with publisher for the status
  - b. Follow-up with the reader regarding status
4. When Alternative Text Received
  - a. Document and list when text was received and in what format
  - b. Notify the student their text is available and a book receipt is needed
5. Give Alternative Text to Student
  - a. Proof of purchase is required, make a copy of book receipt
  - b. Have student sign applicable forms
  - c. Lend equipment to student if needed

## Books in Alternative Text Helpful Tips and Guidelines

This document was developed to familiarize our students for requesting books in alternative text procedures. Please follow the guidelines below, to help us to serve you better.

### TO DO LIST:

- ❑ Complete the "Books in Alternative Request Form". To obtain books in alternative text, you'll need to complete the form and describe each book that you will need in alternative text. Indicate which format you prefer. Return to the CSD department in the appropriate tray.
- ❑ Return the completed form 7 weeks before class begins, along with a copy of your class schedule, to increase the likelihood of receiving your alternative text in a timely manner.
- ❑ Proof of purchase is required, before CSD can supply you the text in an alternative format. A copy of your book receipt is sufficient. Some publishers require the proof of purchase prior to ordering, in this case you may be required to purchase your books in advance.
- ❑ The student will need to sign forms, agreeing to return the materials at the end of the semester and to abide by the copyright stipulations. Signatures are required for both, alternative text and for equipment, if needed.
- ❑ You must alert CSD if you decide to drop or change any classes in which alternative text was previously requested. Also alert CSD if you change your mind and no longer need your books in alternative text. Your file will be updated accordingly.

### FYI ONLY:

If the desired text is not available in the CSD inventory, we'll either order a copy through the publisher or Recording for the Blind & Dyslexic (RFB/D) in any format that is attainable. If not available, arrangements will be made to have the text read. The student will need to provide CSD a copy of the syllabus to assist the reader.

We cannot guarantee that requests submitted at the start of a class or after it begins, will be filled.

If a request for an alternative textbook cannot be filled due to time constraints or other factors, the use of scanning equipment, voice technology (WYNN), and other options may be explored.

For your convenience we have 4-track handi-cassette recorders, bookports, victor vibes and victor classics that may be borrowed for the semester, as inventory permits. You'll need to complete the required paperwork and must return this equipment in good working condition at the end of the semester.

If you need assistance or have any questions, please feel free to ask. You can contact Lynn Brunke in the CSD department in person, by email "[examcsd@ntc.edu](mailto:examcsd@ntc.edu)" or phone: 675-3331 extension 1129.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
I have read the above and will comply with the procedures and recommendations it contains