National Center on Accessible Educational Materials

AEM Navigator

By National AEM Center at CAST

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Overview of the AEM Navigator

The AEM Navigator is a tool that facilitates the process of decision-making around accessible formats of educational materials for individual students. It assists teams in making informed, accurate decisions. Note that it is not a screening or diagnostic tool that results in a prescriptive report. Rather, it is a process facilitator that guides the work of a collaborative team as they work through the AEM-related needs of individual students.

Throughout the AEM Navigator, the term “educational materials” refers to text-based materials, which are materials with static or fixed text and images. Textbooks and supplemental text materials are common examples. Both print and digital materials can be text-based. For example, a digital textbook that replicates a standard print textbook is considered a text-based material.

The four major steps in the decision-making process around accessible formats of educational materials include:

1. Determination of need
2. Selection of accessible format(s)
3. Acquisition of materials
4. Determination of supports needed for effective use

The AEM Navigator facilitates decision-making by presenting a step-by-step series of guiding questions and providing options from which to choose. If more information is needed at any decision point, a robust set of frequently asked questions (FAQ) is provided on the AEM Center website. Additionally, for further study, AEM Center resources specifically related to each decision point are made available.

The following supplemental components support implementation of the team decision-making process facilitated by the AEM Navigator:

- **Student Summary Worksheet.** This is designed to be used in conjunction with the AEM Navigator to document decisions as the team works through the step-by-step process. The worksheet can be used to enter information, evidence, and rationales upon which decisions are based.
- **Sample Student Summary.** This is an example of a worksheet completed for a specific student.
- **To-Do List.** This is basically an action plan to ensure timely provision and effective use of accessible formats. Team members record who is responsible for each action and by what date it is to be accomplished.

Introduction to Accessible Formats

Both the Elementary and Secondary Education Act (ESSA) and the Individuals with Disabilities Education Improvement Act (IDEA) include compelling requirements for State and local education agencies (SEAs and LEAs) to ensure that all students, including those with disabilities, receive the supports and services they need to access, participate, and achieve in the general educational curriculum.

For some students with disabilities, text-based educational materials present a barrier to their participation in the general education curriculum. Some students may have visual disabilities that make it difficult for them to see text and images. Other students may be unable to hold educational materials because of a physical disability. Still others may be unable to read or derive meaning from static or fixed text in print or certain digital educational materials because of a learning disability.

These students require another way to gain the information needed to participate and achieve in the general curriculum. For many students, this need can be addressed by providing them with the identical information in one or more accessible formats, such as braille, tactile graphics, large print, audio, or digital text that conforms to accessibility standards. When accessible formats, supports for use, and effective instruction are well-matched to a student's individual needs, the result can mean the difference between exclusion and achievement across the curriculum.

Federal statutes, including civil rights legislation and statutes in several States, require SEAs and LEAs to ensure that students with disabilities access, participate, and achieve in the general educational curriculum and receive accessible educational materials (AEM). To learn more about the legal context and the statutory requirements for the provision of AEM, visit the Coordinating K-12 Systems page on the AEM Center website at http://aem.cast.org/coordinate/k-12.

The Decision-Making Process

If a student is able to understand the content presented in textbooks and related educational materials that are used by other students across the curriculum but is unable to perceive or use them, the student will need another way to access the information contained in the materials. Barriers to perceiving and using the materials include print-based formats and/or the text-based presentation of the information in either print or certain digital educational materials. In such cases, the student may need accessible formats of curricular materials.

The most effective way to consider the issues related to the provision of accessible formats is through a team decision-making process. Basically, there are four major decision points that decision-making teams address in order to ensure that students who need materials in accessible formats have them in a timely manner for educational participation and achievement. The AEM Navigator assists teams through a four-step process by providing options at each of the following decision points:

1. Determination of need
2. Selection of accessible format(s)
3. Acquisition of materials
4. Determination of supports needed for effective use

Each decision point includes an overview of the decision options. A robust set of FAQs and AEM Center resources are provided on the AEM Center website at https://aem.cast.org. References to these are included throughout the AEM Navigator.

Step 1: Determination of Need

Determining a student's need for accessible formats is the first step of the decision-making process. Examples of decision-making teams include IEP teams, 504 plan teams, and teams related to a school's multi-tier system of supports (MTSS). Parents and caregivers are key members of the team and the student is an active participant.

The team uses a variety of student data in the decision-making process. This can include reading assessment scores, diagnostic evaluations, achievement, teacher observations, and conversations with the student and parents/caregivers.

The team considers three possibilities when determining a student's need for accessible formats:

Option 1: Evidence shows that the student can read and access information from the same text-based educational materials in the same format used across the curriculum by all students. The team determines that accessible formats are not needed at this time.

Option 2: Evidence shows that the student is experiencing difficulty reading or accessing some or all text-based materials due to the formats used in the curriculum. The team anticipates that the student will make adequate progress if exactly the same information is presented in one or more accessible formats. In this case, one or more accessible formats are needed at this time.

Option 3: Evidence shows that the student needs modified content, such as a lower reading level or a change in what the student is expected to learn. In some cases, a student may need modified content in an accessible format(s). The team determines whether the student needs modified content only, or a combination of modified content and accessible format(s).

Appendix A has frequently asked questions (FAQ) on Step 1 of the decision-making process, which provides guidance for choosing among the three options.

If the team determines that the student needs one or more accessible formats, the next step is to select the most appropriate format for that student. Proceed to Step 2, Selection of Formats.

Step 2: Selection of Formats

Selecting appropriate accessible formats for students who need them is a team decision-making process. Examples of decision-making teams include IEP teams, 504 plan teams, and teams related to a school's multi-tier system of supports (MTSS). Parents and caregivers are key members of the team and the student is an active participant.

After the team determines that the student needs accessible formats, they select which format or formats are needed. The selection process includes five checkpoints. Use the **Student Summary Worksheet** to document the results of the team's discussion after each checkpoint.

Checkpoint 1: The team considers the full learning context.

The team considers multiple factors to understand the full context of how, where, and for what varied purposes the student uses educational materials, including:

- The student's skills, needs, and preferences
- The environments in which the student will be learning
- The tasks for which accessible formats will be needed

See **Appendix B-1 for an FAQ on Checkpoint 1 of Step 2**.

Checkpoint 2: The student trials a range of formats.

Information collected from Checkpoint 1 will inform the nature of the accessible format(s) that the student needs. Under the guidance of a special education or AT professional, the student tries a variety of options. Examples include:

- Tactile formats, such as braille (hard copy and digital) and raised images
- Large print formats, which are hard copy materials with large text size
- Audio formats, such as human-narrated audio recordings
- Accessible digital formats such as
- Accessible EPUB documents
- Accessible web-based (HTML5) documents
- Accessible Word documents
- PDF/Universal Accessibility (UA)
- Accessible documents with MathML

See **Appendix B-2 for an FAQ on Checkpoint 2 of Step 2**.

Checkpoint 3: Select the format or combination of formats the student needs.

The team considers information collected from Steps 1 and 2. The outcome of this process may result in the need for more than one format. The following questions can guide the consideration process:

- What formats and specific features are most useful to the student?
- Does the usefulness of certain features vary by subject matter?
- How might different learning environments impact the usefulness of certain formats?
- The outcome of this process may result in the need for more than one format.

See **Appendix B-3 for an FAQ on Checkpoint 3 of Step 2**.

Checkpoint 4: List the text-based educational materials used across the curriculum.

The team gathers information about the text-based educational materials that the student needs for access to all subjects across the curriculum. This includes print materials and digital materials with static or fixed text and images. In addition to the current curriculum, the team collects information about known materials that the student will need in the next six months.

See **Appendix B-4 for an FAQ on Checkpoint 4 of Step 2**.

Checkpoint 5: Match formats to materials.

For each text-based educational material needed by the student, the team selects the appropriate format.

See **Appendix B-5 for an FAQ on Checkpoint 5 of Step 2**.

Step 3: Acquisition of Materials

After establishing that a student needs accessible formats, and selecting which formats are needed for what materials, the decision-making team determines how and where to acquire the materials. A variety of sources for accessible formats exist; however, not all students are eligible to receive materials from each of the different sources. Keep in mind that a student may need more than one accessible format, in which case more than one source may be needed.

Accessible formats of materials can be acquired through three general means, each of which is described in this section:

- Accessible Media Producers (AMPs)
- Publishers
- Local Conversion

The following student eligibility criteria apply to the process of selecting sources of accessible formats:

- Student meets the criteria for “eligible person” for receiving accessible formats under copyright and is served in special education under IDEA.
    - This student is eligible for accessible formats acquired from all sources, including materials derived from the NIMAC.
- Student meets the criteria for “eligible person” but is not served under IDEA.
    - This student is eligible for accessible formats acquired from all sources. Any NIMAC-derived materials produced by those sources, however, are not available to this student.
- Student does not meet the criteria for “eligible person.”
    - This student is eligible for accessible formats from commercial sources, free sources, and, under some circumstances, locally created.

An FAQ on student eligibility and all the sources of accessible formats listed below is provided in Appendix C.

Once it has been determined what sources can be used for acquiring the materials a student needs, the team proceeds to Step 4: Determination of Supports for Use.

Accessible Formats from Accessible Media Producers

Accessible media producers (AMPs) are services that convert materials, including textbooks and related curriculum materials, to one or more student-ready accessible formats.

AMPs are permitted to provide accessible formats to qualified individuals without publisher permission under a U.S. copyright exemption commonly known as the Chafee Amendment. Details about the Chafee Amendment can be found on the AEM Center website at https://aem.cast.org/acquire/chafee-amendment.

Following the allowances of the Chafee Amendment, each of the following AMPs has its own procedures for permitting access to its files. In addition to technical assistance available from the AEM Center, each AMP has excellent support teams to answer your questions about the format(s) provided and student eligibility criteria.

Bookshare: Bookshare is the largest accessible ebook library in the world. Funded by the U.S. Department of Education, Bookshare membership is free for qualifying U.S. students. While NIMAS-sourced materials in Bookshare's collection are restricted for use by students who are eligible under the Chafee Amendment and also have IEPs, versions of the same materials are available for qualifying students who do not have IEPs. To learn about NIMAS, visit the AEM Center website at https://aem.cast.org/nimas-nimac/nimas-nimac.

Visit Bookshare at http://bookshare.org.

Learning Ally: Learning Ally is a non-profit organization with an extensive library of human-read audiobooks. Browse or search audiobooks by grade, Lexile level, subject, category, or curriculum.

Visit Learning Ally at http://learningally.org.

Louis Database: The American Printing House for the Blind (APH) maintains the Louis Database of Accessible Materials. Materials include books in braille, large print, audio, and digital file format.

Visit the Louis Database at https://louis.aph.org/catalog/CategoryInfo.aspx?cid=152.

AMPs in Your State

The National Library Service (NLS) compiles a State directory of producers of accessible formats, specifically audio, braille, and large print. The directory includes information supplied by producers and therefore does not represent every State. Determine if the NLS directory of producers includes your State: https://www.loc.gov/nls/resources/custom-books-transcription-services/

In addition to the NLS directory, your State has an AEM State Contact who can assist you with resources available to students who need accessible formats. Reach out to your State AEM Contact: https://aem.cast.org/coordinate/state-contacts

Accessible Formats from Publishers

Communicating accessibility requirements and expectations to publishers is the best way to minimize access barriers for students with disabilities. When accessible ebooks and related digital materials are purchased directly from publishers, the need to acquire accessible formats for individual students can be significantly reduced. People in positions of selecting and purchasing educational materials from publishers should follow the AEM Center's best practices for vetting accessible digital materials and technologies: https://aem.cast.org/acquire/vetting-accessibility

When a copyrighted textbook or other curriculum material - whether in print or digital - is not accessible for a student who qualifies for accessible formats under the Chafee Amendment, an accessible format can be requested from the publisher. However, if you haven't already, see if the material is available from an AMP, such as Bookshare or Learning Ally. Using AMPs is the most direct and efficient means of acquiring accessible formats.

Before making a request of a publisher, determine if the original purchase order for the material includes what is known as a NIMAC clause. Every State currently coordinates with the NIMAC, an online repository of NIMAS files established under IDEA 2004. NIMAS files are used by AMPs to expedite the production of accessible formats. Using language in purchase orders, States and districts direct publishers to deposit the NIMAS files of their textbooks and related materials in the NIMAC. If a purchase order for a material has a NIMAC clause, its NIMAS file should be available for download from the NIMAC. For guidance on what to include in a NIMAC clause, visit the AEM Center at https://aem.cast.org/nimas-nimac/nimas-purchase-orders-contracts.

Anyone can search for NIMAS files in the NIMAC. Only individuals and organizations known as Authorized Users (AUs), however, are permitted to download NIMAS files. For example, Bookshare, and Learning Ally are AUs for many States. Contact your State's NIMAC Coordinator to learn about your State's AUs and the process for acquiring accessible formats from the NIMAC. The AEM Center maintains a list of NIMAC State Coordinators at https://aem.cast.org/nimas-nimac/nimac-state-coordinators.

Accessible Formats from Local Conversion

Some educational materials are not available in accessible formats from AMPs or publishers. Accessible versions of these materials need to be created by local staff or volunteers. Audio recording and scanning materials with optical character recognition (OCR) software are common methods of converting materials using local means.

Accessible versions of free, open, or teacher-developed materials can be provided to any and all students. Giving all students choice in format means they can independently make their own selection, whether based on need or preference. Providing options for accessing materials is foundational to Universal Design for Learning (UDL). Developed by CAST, UDL is recommended in federal education policies that span K-12, higher education, and career training. Learn more about UDL from CAST: https://www.cast.org/impact/universal-design-for-learning-udl.

Teachers can build accessibility into the materials they develop for use by all students. Creation tools for websites, documents, slide decks, and video all include the features teachers need to make content accessible from the beginning. This reduces the burden of locally creating accessible formats for students who require them, while at the same time promoting UDL.

Learn the basics of designing for accessibility on the AEM Center website: https://aem.cast.org/create/designing-accessibility-pour

Build your skills for creating accessible digital documents and videos by completing the activities in Modules 2 and 3 of the AEM Center's Online Learning Series: https://aem.cast.org/learning-series/online-learning-series-accessible-materials-technologies

Step 4: Determination of Supports Needed

After a decision-making team selects the accessible format(s) that the student needs and has identified where to acquire them, the team considers what types of supports

are needed for a student to use the accessible materials for school, at home, at work, or in the community. To be successful with using accessible formats, students will need a range of supports.

An FAQ on all of the supports listed is provided in Appendix D.

Technology to use accessible formats

Many accessible formats are provided through a digital medium, including accessible digital text, audio, and digital braille. Technology is needed to deliver these digital materials to the student. For example, accessible digital text files are commonly used with an accessible reading software program or an app. Students use audio players - either software or hardware - to listen to audio books. And digital braille is accessed through digital braille displays, such as notetaker devices.

After a team has selected what features and accessible format(s) a student needs, decisions are made regarding what type of technology will be the best match. Known information about the student, the features and accessible format(s) needed, along with how and where the student will use the accessible materials will be helpful in making decisions.

Training for the student, personnel, and family

The complexity of the technology selected for use with accessible formats will inform the type, intensity, and frequency of training needed. For example, use of a large print book does not require technology training but may require accessible reading instruction. Use of text-to-speech software or a screen reader for using accessible digital text requires specific technological skills, in addition to reading supports the team may determine are needed.

Personnel (teachers, therapists, counselors, job coaches, etc.) should be trained on how to support the student at school, work, home, or in the community. Students may also need training on when to use a particular format or tool for a specific task, and how and whom to ask for assistance when needed.

Instructional strategies

Educators may need to use various instructional strategies to support students using accessible formats and supporting technologies. Multiple opportunities for the student to understand the purpose, benefits, and outcomes of using the tools can lead to engagement and confidence. For example, start by having the student use the tools to

successfully complete familiar learning tasks in a familiar environment. Gradually build on early successes by increasing the functional complexity of the tasks in various environments. This scaffolded approach will enable the student to build skills with mastery and independence. The team should ensure that personnel are coordinating assistance for the student, as well as monitoring the effectiveness of the student's experience with the accessible format(s) and technologies.

Support services

A student's service plan (e.g., IEP or 504) should describe any support services needed for effective use of accessible formats and who is responsible for providing them. Different support services may be needed for different formats. For example, a student using braille may require accessible instruction from a teacher of the visually impaired (TVI). An apprentice with a physical disability may need the support of an occupational or physical therapist. Additional supports such as case management, classroom organization and arrangement, equipment management and maintenance, and file acquisition may be needed.

The AEM Center website has a video series that illustrates the implementation of support services. Although the context is specific to supporting the use of accessible materials by students with vision impairments, the practices for building skills and independence apply across the range of student variability. Access the video series at https://aem.cast.org/use/supporting-students-visual-impairments-tvi.

Accommodations and/or modifications

The use of accessible formats and supporting technologies may require accommodations and/or modifications to a student's educational or career training program. For example, a student may need extended time to complete tasks, particularly while learning a new tool. Frequent breaks may be needed to avoid fatigue. Some students may need to provide responses orally rather than in writing. The team should consider which accommodations and/or modifications are needed when developing a service plan.

Assessment and progress monitoring of the supports provided to students who use accessible formats should be ongoing. In addition to service plans, supports are documented in transition plans (by secondary school) and summaries of performance (SOP) upon high school completion.

Appendix A. FAQ - Step 1

The following questions and answers are provided to support teams as they navigate the three options under Step 1, Determination of Need.

Don't see your question? Contact the AEM Center team at aem@cast.org.

What already-existing data and information can be used to decide among the three options?

Some of the specific types of information that can be used to help teams decide a student's need for accessible formats include but are not limited to

- Sensory abilities
- Physical abilities
- Cognitive abilities
- Reading level, including formal and informal reading diagnostic information
- Indications in an Individualized Education Program (IEP) or 504 Plan
- Academic achievement scores and grades
- Curriculum-based assessments
- Statewide and districtwide assessment participation and proficiency

What methods can be used to gather additional information?

Some of the methods used to gather additional information include

- Trials with materials in accessible formats
- Formal measures conducted by a psychologist, a reading specialist, an audiologist, a vision teacher, a physical therapist, an occupational therapist, etc.
- Learning media assessments conducted by vision specialists

Could a student without an identified disability benefit from using an accessible format?

Yes. Many students without disabilities may prefer and could benefit from multiple formats of materials; however, the provision of accessible formats for those students is not required by law.

What information or data would indicate that a student can read and access information from the same text-based educational materials in the same format used across the curriculum by all students?

If a student is making adequate progress and spending a reasonable amount of time on tasks that require obtaining information from text-based educational materials, then the team can determine that there is no need for accessible formats. Data and information can be collected through any of the following

- Informal observations by teachers and parents
- Interviews with students, parents, and teachers
- Classroom-based assessments
- Curriculum-based assessments
- Academic progress
- Statewide and districtwide assessment results

What are some questions a team may explore to determine if a student may not be able to make effective use of text-based educational materials?

There are many reasons why a student may have difficulty using text-based educational materials, whether print or digital. Examples of questions a team might explore include

- Can the student see the material well enough to read the information?
- Can the student physically manipulate the material without undue effort?
- Does the student have the necessary physical stamina (e.g., sitting upright, alertness) to read for extended periods of time?
- Can the student decode letters and words at or near grade level?
- Can the student read with fluency at or near grade level?

Is there a general indicator that a student could use or learn to use an accessible format effectively?

A primary indicator would be that the student understands the content of the educational materials when the information is presented in another format. For example, when the material is read aloud to the student, the student understands the content and can use the information.

What if the team knows that the student already uses one or more accessible formats?

If accessible formats are currently being used by the student, the team can indicate that the student needs one or more accessible formats and can justify the decision by noting a continuing need for the accessible formats currently provided. The student's use of the formats should be monitored over time to consider whether currently used formats are sufficient or if additional or different formats are needed.

What is the difference between an accessible format and a modified or alternative material?

An accessible format includes exactly the same content as the original material. The accessible format does not change the content, only the way in which the content is presented to the student. The accessible format neither adds nor changes any information. An alternative material may address the same goals, but the content of the material is modified or changed in some way (usually made less complex) so that it can be understood by the student.

What are some indications that a student may require modified content or an alternative material?

If content typically presented to a student has to be changed or modified for this student to understand the information, it is possible that the student would not be able to make use of the material in an accessible format.

What sources of information can a team use to determine that a student is currently unable to master the same content as provided in the general curriculum?

Sources of information or data may include

- Trials with materials in accessible formats using the same content and trials using alternative or modified materials
- Reading diagnostic information
- Informal observations by teachers and parents
- Indications in an individualized education program (IEP) or 504 plan
- Formal measures conducted by a psychologist, psychological associate, or educational diagnostician
- Determination by the IEP team that the student requires alternative statewide or districtwide assessments

- Determination by the IEP team that the student requires an alternative educational curriculum

Appendix B. FAQ - Step 2

Appendix B-1. FAQ for Checkpoint 1

Checkpoint 1 of Step 2 of the decision-making process, Selection of Accessible Formats, is to consider the full learning context of the student who needs one or more accessible formats. Thinking about the student, environments, and tasks helps the team understand how materials are used across relevant contexts. With this comprehensive understanding, the team decides which accessible format, or combination of formats, will work for the student under various circumstances.

In this FAQ, we address questions related to each in turn:

- Student
- Environment
- Tasks

Don’t see your question? Contact the AEM Center team at aem@cast.org.

About the Student

What aspects of a student's current skills should the team consider?

- Vision and visual skills: Students who are blind or visually impaired who cannot read text-based materials will need alternative ways to access educational materials. Additionally, some students who are not visually impaired as defined by IDEA may have visual field or visual tracking deficits which affect their ability to use printed text.
- Reading skills: Students with reading disabilities, such as dyslexia, experience barriers to reading text-based materials without supports or alternative means for accessing the content.
- Motor skills and physical stamina: A student's ability to hold books and turn pages should be considered, as well as strength and physical stamina to read for long periods of time.
- Expressive and receptive language skills: A student's language skills affect his/her ability to understand text-based materials and should be considered.

- Listening skills: A student's ability to listen and remember what is heard through listening should be considered. Formal and informal tests of listening comprehension, auditory memory, and other listening skills may be used.
- English skills: Considerations for a student with a disability who is learning English include the extent to which the student comprehends information through varied formats and media.
- Memory: A student's short-term and long-term memory abilities should be considered by the team.

What aspects of a student's current performance should the team consider?

In reviewing information about a student, the team should review past student performance and address questions such as "What aspects of the student's performance will change as a result of the use of accessible formats in the curriculum?" All areas of the curriculum should be considered. For example, the team may want the student to access information more quickly, to understand the information with more accuracy, or to gain information more independently.

What aspects of a student's previous experience should the team consider?

If the student has a history of using one or more accessible formats, performance data related to that use can help the team decide if the same or different formats are needed. Additionally, the student's background knowledge of the content should be considered. If the content is complex or entirely new to the student, it may present multiple learning challenges.

What aspects of the student's preferences should the team consider?

Students should always be consulted about their preferences. Whenever feasible, the team selects formats that the student prefers. In some cases, students should be required to try a new format for an extended trial period in order to determine whether it has benefits that the preferred format does not offer. Students often need to have experience with a variety of accessible formats before they can make an informed decision about the one(s) they most prefer.

Does the age of a student impact the format(s) that the team should consider? At what age can a child start using talking books?

Children who are blind, visually impaired, and/or have physical disabilities develop an interest in reading the same way all children do. Rich experiences and explorations of a

variety of reading materials are essential to early literacy development. There is no set minimum age at which children should begin using accessible formats.

What specific aspects of a student's ability to listen should be assessed when considering accessible formats?

A listening assessment may include factors such as the student's level of understanding and comprehension when text is read aloud, the student's ability to repeat specific words or phrases heard, and the length of time the student can listen with understanding.

About the Environments

How does the way that instruction is delivered in various environments impact the selection of accessible format(s) for a student?

The team considers the following variables

- Materials that will be needed in more than one environment (e.g., home, school, community, multiple classes)
- Portability and flexibility of various formats and the technology the student will need to access them
- Types of required reading tasks (e.g., independent and shared reading in various environments at school, reading at home, reading for community activities)
- Types of visual representations in the content (e.g., maps, charts, diagrams, and math notation)

What aspects of the environments in which accessible formats will be used should the team consider?

The team considers the following variables:

- Environments where the student will need access to the curricular content (e.g., school, home, or community-based educational programs or apprenticeships)
- Lighting in the environment
- Noise in the environment
- Availability of needed technology and power sources

About the Tasks

What aspects of the tasks for which accessible formats will be used should the team consider?

The team considers the following variables:

- Nature of the task
- Complexity of the task
- Length of the task
- Type of response expected (e.g., annotation, multiple choice, fill in the blank, written response)

What aspects of the educational materials for which accessible formats will be used should the team consider?

The team considers the following variables:

- Length and complexity
- Genre (e.g., fiction or nonfiction, math, science)
- Visual representations (e.g., photos, charts, or other graphics)

Appendix B-2. FAQ for Checkpoint 2

Checkpoint 2 of Step 2 of the decision-making process, Selection of Accessible Formats, is to have the student trial a range of formats. Information collected from Checkpoint 1 will inform the nature of the accessible format(s) that the student needs. Under the guidance of a special education or AT professional, the student tries a variety of options under Checkpoint 2.

Don't see your question? Contact the AEM Center team at aem@cast.org.

What does "accessible format" mean?

The term "accessible format" is technically defined in copyright law. For a comprehensive overview and definition, visit the AEM Center website at https://aem.cast.org/acquire/accessible-formats. Simply put, an accessible format is an alternative way of presenting the information in a material. The purpose of an accessible format of a material is to provide access to an individual with a disability who would otherwise be unable to gain information from the material in its original format.

What is the range of accessible formats a team should consider?

By definition, "accessible format" is an inclusive and functional term. While no specific formats are listed under the definition, customary formats for consideration are braille, tactile graphics, large print, audio, and digital text.

What are sources of accessible formats for the purpose of student trials?

Reach out to your State AEM Contact for suggestions on how to access accessible format files for the purpose of student trials. The AEM Center maintains a list of State AEM Contacts at https://aem.cast.org/coordinate/state-contacts.

What aspects of the student's performance during trials should the team consider?

Teams can evaluate a student's performance during trial periods and instruction in the use of an accessible format. Information collected can help a team decide which accessible formats are most effective for student use in a particular task. Data that might be collected during instruction in the use of a format or during trial periods might include the amount of time it takes the student to use each format option and the student's level of independence in the use of each format.

Appendix B-3. FAQ for Checkpoint 3

Checkpoint 3 of Step 2, Selection of Accessible Formats, is to consider the formats available. Understanding the range of accessible formats, the characteristics of each, and the considerations for student use are essential to the successful selection process. Here, we offer a series of Q&A for the customary accessible formats:

- Braille
- Tactile graphics
- Large print
- Audio
- Accessible digital text

Don't see your question? Contact the AEM Center team at aem@cast.org.

Braille

What is braille?

Braille is a tactile system of reading and writing made up of raised dot patterns for letters, numbers, and punctuation marks. This format is used almost exclusively by people with visual impairments. Braille may be either embossed (a permanent printed document) or refreshable (digitally generated and accessed via a braille display device). Considered a code, any language can be conveyed in braille. Visit the American Foundation for the Blind to learn more braille basics: https://www.afb.org/blindness-and-low-vision/braille/what-braille

How do people read braille?

The process of learning to read in braille is similar to learning to read and write print, yet people use the fingers of both hands to read from left to write over a line of braille using very little pressure with their fingers to touch the braille dots. Tactile perception and discrimination skills are important for efficient braille reading. So too are smooth, coordinated hand tracking motions.

Why would decision-makers consider the braille format for a student?

When braille provides a student with a visual impairment with the best means to develop literacy skills in order to access information, communicate efficiently and independently, and participate in all educational activities, then braille is selected as the student's primary learning medium. This decision is based on a systematic and objective evaluation process. Sources of information include a clinical low vision

evaluation, a functional vision assessment, a learning media assessment, and the student's progress in the educational program. The team analyzes and considers the information in a variety of contexts, including the student's current and future needs.

What characteristics of the braille format should decision-makers think about when considering this format for a student?

Once a team determines that braille is the primary learning medium for a student, the team needs to consider all aspects of providing access to textbooks and other educational materials. For example, with a beginning braille reader it must be determined if the student will initially learn braille in an uncontracted form (letter-by-letter representation) or in contracted form (use of special characters to make words shorter). The team should also be aware of the braille codes that exist, and the relationships between them. The National Center on Educational Outcomes (NCEO) published a useful brief for teams: https://nceo.umn.edu/docs/OnlinePubs/NCEOBrief19.pdf

What output features of the braille format are important?

Students usually begin reading embossed braille. This is commonly referred to as "paper braille" (also "hard copy braille") versus "refreshable braille." Refreshable braille is a digital or digital braille output. As students become proficient in reading textbooks and other materials in paper braille, refreshable braille is frequently included as another effective way to read braille. Refreshable braille displays represent what is visually displayed on a computer screen one line at a time. Braille output is created with small plastic pins in the shape of a typical braille cell that move up and down from a flat surface to display the braille characters. Refreshable braille displays can be attached to computers, tablets, and smartphones. They are also integrated with dedicated note taking devices and portable multi-function computers.

What characteristics of the braille format influence which outputs are selected?

Both paper and refreshable braille formats have benefits to students. Paper braille is an excellent format for representing graphic materials, math content, and assisting in the student's comprehension of spatial concepts. Refreshable braille provides the student with increased access to information and independence in a variety of environments such as school, home, work, and community because of greater flexibility and portability. Students usually learn to choose a preferred braille format depending on the literacy task and the environment. For example, a student may prefer a geography textbook in hard copy embossed braille to access maps and related tactile graphics but prefer reading literature using a refreshable braille format. Another feature of refreshable braille formats that may influence student choice is the additional output of

speech available in digital formats. Speech access can work in combination with refreshable braille access to increase a student's efficiency. For example, students may increase their reading rate and comprehension through the combined outputs of refreshable braille and speech.

What are the considerations for the use of braille in multiple environments and for multiple tasks?

It is important to consider braille formats in the context of multiple purposes in order to provide access to a variety of tasks. For example, both paper and refreshable braille can be used for tasks such as reading books and using additional braille codes. With a portable digital braille device, a student can easily use braille in multiple environments such as school, home, and community events to engage in additional tasks such as word processing, calculating, web browsing, using email, and checking spelling.

How do people who use braille communicate with others who do not read braille?

Because braille is not widely known or used by the general population, communication between people who use braille and people who use print for literacy tasks needs special consideration when braille is selected as a student's primary learning medium. To facilitate this communication, braille formats that contribute to independent communication and access are important to consider, such as the use of digital braille tools with refreshable braille access. Features of digital braille tools that integrate and interface with other access devices and "mainstream" devices can give print readers access to braille and braille readers access to print.

Tactile graphics

What are tactile graphics?

Tactile graphics are images, such as maps, charts, and graphs that are designed to be interpreted by touch. Perkins School for the Blind provides extensive resource information on the design and production of tactile graphics: https://www.perkinselearning.org/scout/blog/tactile-graphics-students-who-are-blind-or-visually-impaired

Why would decision-makers consider tactile graphics as a format for a student?

Braille users need to develop proficiency in interpreting tactile graphics in order to understand visual illustrations used in teaching and learning activities. The availability of tactile graphics for mathematics and science is especially important for students who need this format. The website Teaching Students with Visual Impairments has useful

information about tactile graphics instruction:
https://www.teachingvisuallyimpaired.com/tactile-graphics-instruction.html

Large print

What is large print?

Large print is generally defined as print that is larger than the print sizes commonly used by the general population (8 to 12 points in size). Some use a guideline for defining large print as 18-point or larger. A document rendered in large print format usually has more white space and may or may not look like the original document but contains the same information. Large print may be printed on pages that are the same size as a standard textbook page or on pages of a larger size.

How do people use large print?

Large print can be an effective reading medium for students with low vision who are unable to use typical print size for efficient reading. Many students who have low vision, however, use typical print formats with greater efficiency than large print. Medical conditions that cause low vision in children are varied and affect how a person uses vision in many different ways. The evaluation process is essential to assist a team in making appropriate decisions about print media for students with low vision.

Why would decision-makers consider the large print format for a student?

For a student with low vision who uses print for reading and writing, the team considers the use of large print through an evaluation process to determine the print media the student will use to develop literacy skills. This objective evaluation process (which is similar to the process used to determine the use of braille) includes information from a variety of sources, such as a clinical low vision evaluation, a functional vision assessment, and a learning media assessment emphasizing print media and efficient reading skills. A variety of factors are included in the decision-making process such as eye condition, type of vision loss, reading speed, comprehension, print size, and individual student goals. Large print may be a student's primary or secondary learning medium depending on task and context. For example, large print may be most appropriate for a print textbook, but not necessary for access to digital text where many print features can be adjusted and customized to student preferences.

What characteristics of the large print format should decision-makers think about when considering this format for a student?

When a team determines that large print is the most appropriate method for a student to read, the team needs to consider all aspects of providing this format. For example, in the early grades, print material is generally provided in a larger print size, which may be sufficient for the student's access. As the student progresses through the grades, ongoing monitoring of print characteristics and reading efficiency needs to occur to ensure appropriate use of large print materials. Other factors affecting visual access need to be considered for a student using large print, such as contrast, clutter, and spacing in print presentation. Students also need to know how illustrations (e.g., photos, maps, graphs, and charts) should be presented for efficient visual access and the most effective way to access graphic information.

What output features of the large print format are important?

Students read printed text on paper and digital text on digital screens. Some people refer to text on paper as large print and text displayed on screens as enlarged text. Students requiring large print or enlarged text need to become proficient in reading materials in a variety of media and output features. Magnification devices also provide access to print. Computer-based tools such as software and hardware solutions enable large text. Other tools such as digital magnifiers, both portable and desktop (commonly referred to as CCTVs or video magnifiers), enlarge print. In addition, the accessibility features built into computer platforms have many options that students can use to increase the size of visual presentation and readability of text on a screen.

What characteristics of large print and large text formats influence which outputs are selected?

For hard copy, using large print in textbooks gives the student immediate access to the same materials classmates are using and allows the student to participate in teaching and learning activities in the same manner as all students. Use of magnification devices to view print can provide additional visual access to materials, such as maps that contain detailed and embedded graphics. Viewing text on a computer screen gives a student the option to personalize text size and other features using accessible software or accessibility features. Another benefit to using digital tools for viewing text is the ability of some software programs to provide the additional output of speech. Similar to using speech with braille, speech access with large print can work in combination to increase a student's reading efficiency.

What are the considerations for the use of large print in multiple environments and for multiple tasks?

Typical large print textbooks have a history of being sizable and heavy. Many current large print textbooks, however, are produced in a size typical of all textbooks, making them portable and student friendly. Hand-held portable magnification devices give students the flexibility and independence to access print in an enlarged format in multiple environments, such as school, home, and in the community. The use of digital devices to enlarge print also provides the flexibility to view print for multiple tasks, such as word processing or digital communication.

Audio

What is audio?

Audio formats render content as speech to which a student listens. Audio formats include recorded human voice and synthesized digital speech.

How do people use audio as an alternative to text?

People who use an audio format receive information by listening. Audio formats have no visual component.

Why would decision-makers consider an audio format for a student?

By listening to content, students can reduce the cognitive load of trying to read text or braille and can focus on comprehension of the information. Decisions are made based on a student's needs, the environments in which tasks will be completed, and the nature of tasks the student needs to accomplish.

What output features of audio formats are important?

The major features that decision makers should focus on are voice, navigation within an audio file, and supported study skills. For audio format, output means how the voice sounds to the listener. Output features describe the ways that speech can be adjusted or modified when using audio format. Audio output may be a recorded human voice or synthesized speech. There are many ways in which the speech output can be adjusted, whether the speech is recorded human voice or synthesized speech. Adjustments can be made in the pitch, the volume, and the speed at which speech is presented.

What characteristics of audio formats influence which outputs are selected?

The team considers if the student needs or prefers the audio to be a recorded human voice or whether a synthesized or computer-generated voice is acceptable. Output is selected depending on the personal characteristics of the student, such as age, level of experience with the format, and tasks to be completed with the educational materials.

What navigation features of audio formats are important?

Navigation features should allow users to move around the recorded audio files easily. Navigation is similar to a table of contents and allows users to jump to elements such as chapters, sections, pages, paragraphs, and sentences. Bookmarking and inserting audio notes are additional features to consider.

What are the considerations for the use of audio in multiple environments and for multiple tasks?

Some students use different audio formats for different reading tasks. For example, a student may find it acceptable for a science book to be read with a synthesized voice. When a literary work is studied for a literature class, however, a human voice may be more useful.

Accessible digital text

What is accessible digital text?

Digital text is a common format that is delivered on a computer or mobile device. While many digital text formats exist, here we are referring specifically to accessible digital text formats. Accessible digital text is malleable and can be easily transformed in many different ways depending upon student needs and the technology being used to display the content. Various features of the technology control how the content is presented, such as text size, fonts, colors, contrast, highlighting, text-to-speech, etc. An accessible digital text file may contain both audio and visual output depending upon the way the content is developed, and the technology being used.

What are examples of accessible digital text formats?

Many format types can be used to create accessible digital text, including HTML, DOC, EPUB, PDF, DAISY XML, etc. Frequently, however, digital materials in these formats (e.g., ebooks and websites) are not designed to be accessible for students with disabilities. Accessible digital text is based on the Web Content Accessibility Guidelines

(WCAG). Information about WCAG is available on the W3C Web Accessibility Initiative website at https://www.w3.org/WAI/standards-guidelines/wcag/.

Schools can purchase digital materials that conform to WCAG directly from publishers. When a print material or a digital material that does not conform to WCAG is procured, a student who needs accessible formats may need the material in accessible digital text. Learn more about procuring accessible digital materials on the AEM Center website at https://aem.cast.org/acquire/communicating-accessibility-requirements

How do people use accessible digital text formats?

There are three main categories of accessible digital text. The first is software and some stand-alone hardware devices that read text aloud using synthetic speech or text-to-speech. The second category is digital talking books (DTBs) that conform to the DAISY standard or Digital Audio Information SYstem. Depending on how the DTB is created, text-to-speech, human recorded audio, or both may be available to the user. The third category consists of commercial digital texts or ebooks, some of which may offer embedded read-aloud functionality.

Why would decision-makers consider an accessible digital text format for a student?

Accessible digital text is often displayed on computers and mobile devices with text-to-speech software that has the ability to easily provide text and audio simultaneously or separately. This format not only provides flexible access to the information, but many text-to-speech software programs also have built-in learning supports that can increase learning and literacy for some students.

What output features of accessible digital text formats are important?

Output is what a user hears and sees on the screen, and the available features are related to the technology being used. The following are some of the features that may be manipulated:

- Font size/type/color
- Background color
- Synchronized highlighting as text is read
- Text-to-speech
- Voice speed
- Navigation

What are supported reading programs and apps?

When learning supports are designed into a program or app that renders accessible digital text, the software is often referred to as supported reading software. Learning support features may include

- Find/search
- Bookmarking
- Note taking
- Text highlighter
- Generation of an outline from highlighted text
- Audio notes
- Dictionary/thesaurus
- Links to multimedia

What are the considerations for the use of accessible digital text formats in multiple environments and for multiple tasks?

When digital materials are created that meet standards for accessibility, the digital files can be manipulated to meet the student's multiple needs depending on the technology that is used.

Appendix B-4. FAQ for Checkpoint 4

Checkpoint 4 of Step 2 of the decision-making process, Selection of Accessible Formats, is to list the educational materials the student needs. The team gathers information about the text-based educational materials that the student needs for access to all subjects across the curriculum. This includes print materials and digital materials with text and images. In addition to the current curriculum, the team collects information about known materials that the student will need in the next six months.

Don't see your question? Contact the AEM Center team at aem@cast.org.

What are some examples of materials that might be listed in this section?

The team should take a systematic approach by listing the student's subject areas or classes. For each, identify and list the print and digital materials used. Examples include textbooks, trade books, websites, magazines, newspapers, and teacher-created materials.

What information should be provided for each material listed?

For each material listed, categorize according to:

- Copyright with an ISBN (record for Step 3, Acquiring Accessible Formats). To learn about ISBNs, visit the International ISBN Agency at https://www.isbn-international.org/content/what-isbn.
- Licensed under Creative Commons, which means the material can be converted to another format for any student, following the license information. These materials are commonly known as Open Educational Resources (OERs). To learn about OERs, download an AEM Center website article on the topic at https://aem.cast.org/get-started/resources/2021/open-educational-resources-oers.
- In the public domain, which means it can be converted to another format for any student, following any possible restrictions. To learn about public domain, visit a page on the topic at Stanford Libraries at https://fairuse.stanford.edu/overview/public-domain/welcome/.
- Teacher-created, which means accessibility errors can be corrected or the material can be re-created to be accessible.

Appendix B-5. FAQ for Checkpoint 5

Checkpoint 5 of Step 2, Selection of Accessible Formats, is to match formats to the materials the student needs. The decision-making team uses the information gathered about the student, learning context, and accessible formats to select which materials are needed in which accessible formats.

Don't see your question? Contact the AEM Center team at aem@cast.org.

Under what circumstances might a student need a material in two or more formats?

Students may need one primary accessible format for many tasks, but a variety of factors—including environments and tasks—may indicate a need for the same material in more than one accessible format. For example, a student may need one format for use in classrooms and another for homework at home. While a student may be able to use audio to listen to a novel while commuting, the student may also need an accessible digital text format to see and hear text simultaneously while writing answers to questions at home. In addition, if a student is in the initial stages of learning how to use a format such as braille, the student may need to use the newly learned format for some tasks while using a more familiar format for other tasks.

What should happen if the student disagrees with the format(s) selected by the rest of the team?

As with any other educational decision, the best means to determine which educational strategy is most beneficial for a student is to try both and collect data about the results of its use. Data-based decisions about accessible formats should take into account the specific tasks a student needs to perform and the change in student performance that the team hopes to see as a result of the use of accessible formats. Also, it may be that a student needs different formats for different tasks.

Appendix C. FAQ - Step 3

The following questions and answers are provided to support teams as they navigate the sources of accessible formats under Step 3, Acquisition of Materials.

Don't see your question? Contact the AEM Center team at aem@cast.org.

What is the NIMAC?

IDEA mandated the establishment of the National Instructional Materials Access Center (NIMAC) as a national repository for publisher-sourced filesets of textbooks and related educational materials that are created according to the technical specification included in the National Instructional Materials Accessibility Standard, commonly known by the acronym NIMAS. The NIMAC is part of the American Printing House for the Blind (APH).

When a publisher creates a NIMAS fileset for a textbook or other educational material and deposits the fileset in the NIMAC, that fileset can be converted into student-ready accessible formats, such as braille, tactile graphics, large print, audio, or digital text.

It must be remembered that NIMAS filesets have to be converted to student-ready accessible formats and that accessible formats created from filesets housed in the NIMAC can only be used by dually qualified students. A student must be served under IDEA and meet copyright criteria for accessible formats to use materials created from NIMAS source files from the NIMAC.

Learn more at the NIMAC website at http://www.nimac.us/. The AEM Center website has a FAQ about NIMAS and the NIMAC at http://aem.cast.org/nimas-nimac/nimas-faq.

What are AMPs?

Accessible media producers are known as AMPs. These are agencies, organizations, or companies that produce educational materials in accessible formats such as braille, tactile graphics, large print, audio, or digital text.

Most materials produced by AMPs are available to students or others who meet copyright criteria for accessible formats. Only those students who are dually qualified (meet copyright criteria *and* are served under IDEA*)* are eligible for accessible formats created from NIMAS filesets obtained from the NIMAC.

Two AMPs—Bookshare and the American Printing House for the Blind—receive federal funding that enables them to provide accessible formats free of charge or at a very low cost to qualified students. A third AMP, Learning Ally also provides materials across the country for a fee.

- Visit Bookshare at http://bookshare.org
- Visit the Louis Database at APH at https://louis.aph.org/catalog/CategoryInfo.aspx?cid=152
- Visit Learning Ally at http://learningally.org

What is the "locally created" option?

"Locally created" production refers to the means used by special education teachers and assistive technology personnel to make printed materials accessible by scanning, recording, or otherwise transforming them into formats that can be used by students with disabilities. Although this was the primary means of providing accessible formats for many years and is still the only way to provide some materials (e.g., non-published, teacher-created materials) this should be the means of last resort. Local creation of materials on a student-by-student basis is extremely time intensive and does little to encourage the systemic change needed to provide materials effectively and efficiently to all students who require specially formatted educational materials to achieve positive educational outcomes. There is every expectation that as the market model strengthens and more accessible materials are available for purchase there will be markedly less need to use this option for textbooks and other published related materials.

It is important to keep in mind that local creation of accessible formats does not relieve anyone from observing copyright law as it relates to educational materials. If copyrighted materials are being used as a source, the restrictions are the same as those for AMPs and other sources. In other words, if an accessible format of a copyrighted material is created for one student who needs it, that material cannot be shared with another student who may simply prefer it (or even need it) if that child does not meet copyright criteria—except possibly under the Fair Use exception to copyright statute. To learn more, download an AEM Center guide on fair use for persons with disabilities at https://aem.cast.org/get-started/resources/2020/fair-use-and-accessibility-for-persons-with-disabilities.

What is NIMAS?

The National Instructional Materials Accessibility Standard or NIMAS includes a technical specification used by publishers to produce source files (in XML) that may be used to develop multiple accessible formats (such as braille or audio books) for

qualifying students. It is mandated in the Individuals with Disabilities Education Improvement Act of 2004 (IDEA) for textbooks and related educational materials. A NIMAS-conformant source file is not a student-ready format but must be converted into an accessible format (i.e., braille, tactile graphics, audio, digital text, large print) for student use.

The NIMAS outlines and defines what a set of consistent and valid XML-based source file(s) and other component files consist of, and these are typically created by K–12 curriculum publishers or other content producers. These well-structured source filesets can be used to create student-ready, accessible formats of educational materials. A complete NIMAS fileset includes an XML content file, a package file, images, and a PDF file of the title page (or whichever page contains ISBN and copyright information). More detailed information about NIMAS is available at the AEM Center website at https://aem.cast.org/nimas-nimac/nimas-nimac.

Special education statutes apply to State and local education agencies, not to publishers. There is no statutory requirement placed on publishers to create NIMAS source files and deposit them in the NIMAC. To be sure that NIMAS source files are created and deposited in the NIMAC so they are available for conversion to accessible formats when needed, all contracts for the purchase of educational materials need to include the requirement that these files be created and deposited along with a date by which this must be done. Sample NIMAS contract language can be found on the AEM Center website at https://aem.cast.org/nimas-nimac/nimas-purchase-orders-contracts.

Who can use accessible formats created from NIMAS source files from the NIMAC?

IDEA specifies that a student must meet two criteria in order to receive an accessible format rendered from a NIMAS fileset from the NIMAC:

- The student must receive special education services under IDEA
- The student must be certified by a competent authority as having a disability as specified in the Act to Provide Books for the Adult Blind (approved March 3, 1931, 2 U.S.C. 135a) [34 CFR 300.172(e)(1)]. The Marrakesh Treaty Implementation Act created changes to the criteria for eligibility.

More detailed information is available at the AEM Center website:

- The Chafee Amendment: https://aem.cast.org/acquire/chafee-amendment
- NIMAS Terms Clarified Post Marrakesh: https://aem.cast.org/nimas-nimac/nimas-terms-marrakesh

Who is eligible to receive accessible formats?

As a result of the Marrakesh Treaty Implementation Act (2018), the term “eligible person” rreplaced “blind persons or other persons with print disabilities” in section 121 of the U.S. Copyright Act, also known as the Chafee Amendment. An eligible person is defined as someone who is either blind, has a “visual impairment or perceptual or reading disability” rendering them unable to read printed works “to substantially the same degree as a person without an impairment or disability,” or has a physical disability making them unable to hold or manipulate a book or focus or move their eyes to read. A condition making one an “eligible person” must be “determined by a competent authority possessing experience in making such determinations.”

Who is a competent authority?

As a result of the Marrakesh Treaty Implementation Act (2018), the list of professionals who can certify a person’s eligibility to receive accessible formats, defined by Library of Congress regulations, was revised. The revision was posted in the Federal Register on February 12, 2021 and states:

Eligibility must be certified by one of the following: doctor of medicine, doctor of osteopathy, ophthalmologist, optometrist, psychologist, registered nurse, therapist, and professional staff of hospitals, institutions, and public or welfare agencies (such as an educator, a social worker, case worker, counselor, rehabilitation teacher, certified reading specialist, school psychologist, superintendent, or librarian).

Who is an authorized user?

An authorized user (AU) is an agent of a State department of education who has access to the NIMAC database in order to download or to assign NIMAS fileset(s) for conversion to accessible formats in accordance with established agreements with the NIMAC. An AU can be a nonprofit organization or a governmental agency. Accessible Media Producers, such as Bookshare and State Instructional Materials Centers, are examples of AUs.

What is the Chafee Amendment to Copyright Law?

The 1996 Chafee Amendment to Copyright Law, Public Law 104-197, adds Section 121, establishing an exception to copyright infringement for the reproduction of works for use by eligible persons. The definition of eligible person refers to the definition in the Act to Provide Books for the Adult Blind approved March 3, 1931, which was revised as a result of the Marrakesh Treaty Implementation Act (2018). IDEA also points to this

definition of “eligible person.” Visit the AEM Center for more information about the Chafee Amendment at https://aem.cast.org/acquire/chafee-amendment.

Can the same law be interpreted in different ways?

Yes, there are ambiguities in the laws that are subject to interpretation. When questions arise, district personnel are urged to contact their district administrators and/or State AEM contact designee. Refer to our State AEM Contacts page to find your designee: https://aem.cast.org/coordinate/state-contacts.

What about teacher-made materials?

Teacher-made materials include worksheets, assessments, and other materials created by a teacher that are not part of published educational materials and are not available in accessible formats from other sources. If a student requires accessible formats of published educational materials, it logically follows that materials produced by a teacher will also need to be made accessible via a “locally created” process.

Ideally, teacher-made materials are created using accessibility best practices so that they are usable by all students, including those who need accessible formats. In cases where a material cannot be recreated in a timely manner to be accessible, conversion will be necessary. Options include scanning with Optical Character Recognition (OCR) software or creating an audio recording.

Creating accessible materials from the start is the most effective way to avoid the need for time-consuming and often burdensome local conversion processes. The AEM Center website offers the following resources to support teachers in building accessibility best practices:

Learn the basics of designing for accessibility: https://aem.cast.org/create/designing-accessibility-pour. Build your skills for creating accessible digital documents and videos by completing the activities in Modules 2 and 3 of the AEM Center’s Online Learning Series: https://aem.cast.org/learning-series/online-learning-series-accessible-materials-technologies

What other major provisions in IDEA related to accessible formats need to be addressed?

IDEA requires State education agencies (SEAs) and local education agencies (LEAs) or school districts to provide educational materials in accessible formats to all qualifying students ([34 CFR 300.172(3)]).

If a student receiving services under IDEA needs accessible formats but does not meet copyright criteria or if needed materials are not available from the NIMAC, the SEA and LEA remain obligated to provide needed accessible materials in a timely manner [34 CFR 300.210(3)] by making use of other sources.

Appendix D. FAQ - Step 4

The following questions and answers are provided to support teams as they navigate the supports that may be essential for a student to effectively use accessible formats. We address questions related to each in turn:

- Technology
    - General Questions
    - For use with Braille
    - For use with
    - For use with
    - For use with
- Training
- Instructional Strategies
- Support Services
- Accommodations and Modifications

Don't see your question? Contact the AEM Center team at aem@cast.org.

Technology

General Questions

After a team has determined what features and accessible format(s) a student will need, how should the team make decisions regarding what technology may be needed to deliver the accessible format(s)?

When the team has identified the important factors about the student, the environments where the student needs access to educational materials, the tasks the student is expected to accomplish, and the specific educational materials in the curriculum, team members can then match the identified student needs to the features of various technology tools that might be used to deliver the accessible format(s). It is important to keep in mind that technology is often needed to deliver student-ready, accessible formats.

The provision of accessible materials via appropriate technology enables students to develop literacy skills, access information, communicate independently and efficiently, and participate in all educational activities.

What factors about a student and the instructional context should be considered when matching the needs of a student with the features of available technology?

There are many variables regarding the student and their learning context that need to be considered as part of the tool selection process. The educational assessment process will yield valuable information about the student's individual needs in the learning environment when making tool selections. All the information collected about the student, the environment, and the tasks that were gathered by the team in Checkpoint 1 of Step 2, Selection of Accessible Formats, is considered and used to match the student's needs with features of the technology.

The IEP team considers characteristics of the student, such as the student's age, and the learning tasks required to achieve literacy skills. For example, an early childhood student may need hard copy braille embossed on paper to acquire essential literacy concepts, while a high school student may need portable braille tools with a refreshable braille display for use in school and at a work site. A similar example for large print is that an early childhood student may benefit from a handheld magnifier to enlarge print, enhancing portability and providing ease of use, particularly when children are in settings where they frequently sit on the floor.

Choosing tools also depends on a student's goals and the amount of reading and visual access required for tasks the student wants to accomplish. A computer-based method of accessing print materials may offer a student the most efficient path to managing a large amount of text and provide a variety of ways to view text in an enlarged format. It is also important to know the student's goals regarding learning subject matter such as music and higher-level mathematics because there may be a need to use a specific technology or feature to achieve those goals. The student's future learning and living situations also affect choices because of the need to use accessible formats in a variety of work and learning environments.

What general factors should a team consider when matching features of technology to deliver accessible formats tailored to the needs of a student? How should the team choose a specific technology system?

The overall purpose, complexity, and design of tools are important considerations. Tools used for accessible formats have a range of capabilities, methods, and features through which they provide access to text. Each of these feature options is considered in relation to a student's needs and abilities. For example, using large print in textbooks does not require the additional knowledge and skills needed to access large print using manual and digital devices. The design of tools, such as ergonomics, size, and weight may influence when and how a tool should be used.

The features of tools that provide portability and flexibility may influence choice due to greater independence and efficiency in using accessible formats in a variety of environments including home, school, work, and the community.

Once technology for the student's use is chosen, what general questions about it should the team consider when planning for use in the educational environment?

When determining the technology that the student will need in order to use an accessible format, the team may consider questions such as the following:

- Is the technology already available in the school environment?
- Does the available technology have the needed specifications (e.g., memory, speed, operating system) for the applications the student will use?
- Will new devices or computers need to be purchased in order for the student to use the accessible format(s) the team has selected?

Technology for Use with Braille

What tools are traditionally used with text in braille formats?

Tools traditionally used to provide text in braille include hard copy embossed paper braille textbooks and a manual braille writer. There are a variety of digital tools that provide text in braille to support braille and tactile literacy skills for students. Tools such as digital braille writers provide multi-sensory access (both braille and speech) and portable digital braille note takers with braille displays also provide multi-sensory capabilities (both braille and speech) in interactive environments. A student can use these tools for reading and writing braille.

Digital braille displays with "refreshable braille" interface with computers, allowing braille access to the information sighted people see on a computer screen. Tactile graphics makers and digital drawing tablets (touch tablets) are used to provide access to graphical information such as illustrations and maps. Braille embossers are used to emboss (print) hard copy paper braille from digital files and braille translation software provides the translation of digital text into braille files. Scanners are used to support this process if print is not available digitally.

What features of tools need to be considered for using braille formats?

The overall purpose, complexity, and design of braille tools are essential considerations. Braille tools have a range of capabilities, methods, and features by which they provide access to text and information. Tools may be specifically designed for blind people who read braille, or they may be created to provide access to information that was originally

designed for sighted people who use print. A student's age, individual needs, and goals may influence the choice of tool. For example, a younger student may need a tool specifically designed for blind users of braille in order to easily operate the device and develop beginning skills in using digital tools and programs. An older student may need access to mainstream computer programs commonly used by sighted people and need greater portability and independence, especially in a work environment. This student may require tools that increase efficient communication with computer programs used in a work setting.

Other important features are the overall purpose of the tool and its physical design. Braille tools can vary in how information is accessed and shared and in ergonomics, size, and weight. Some braille tools are designed to be used with a keyboard that enables six-key entry (input is written in braille) and others are designed with a standard QWERTY keyboard. Braille tools that are smaller than computers but are capable of performing many of the same functions are commonly called braille note takers. They have features that influence portability, flexibility, efficiency, and independence and can be effective in a variety of environments, such as school, home, work, and in the community.

Are there other ways to supplement braille with other outputs?

There are a variety of ways for students who read and write using braille tools to supplement braille with other outputs. Some tools provide braille output in refreshable braille and other tools and methods provide braille output in hard-copy embossed braille. Other braille tools supplement tactile access with speech, which provides increased flexibility and choices that may influence a student's access and learning.

It is also important to consider other devices that integrate with braille tools that foster communication with people who use print. This is an essential consideration when people are communicating using two different reading mediums, such as braille and print. Some braille tools integrate with devices that allow print output on paper and print output on digital devices such as LCD displays and computer screens. This allows braille users to communicate in print with sighted people.

What features allow the braille format to be usable in multiple environments and for multiple tasks?

It is important to consider tools with multiple purposes that can provide access through a variety of tasks. Braille needs to be used for word processing, reading books, calculating, web browsing, using email, checking spelling, and using additional braille

codes. Tools with many of these features need to be selected based on the individual needs of a student and their goals.

Additional features of braille tools that are important considerations are how the braille tools integrate and interface with other access devices. To facilitate communication with others, some braille tools interface with devices that allow visual access by a sighted person to the braille text and information the student is using. Some braille tools may also interface with other devices, such as a typical QWERTY keyboard, to allow a sighted person to provide “real-time” access to displayed text. Additionally, how braille tools integrate with standard “mainstream” devices may influence the process of access to text and communication. Connectivity with other devices can facilitate working with sighted people using print and access to the Internet.

Technology for Use with Large Print

What tools are traditionally used with large print formats?

There are a variety of tools used to provide large print. There are traditional large print books created by publishers and a variety of other tools used to access textbooks and educational materials in large print. Low-tech tools commonly used to view print in an enlarged format are optical devices (typically prescribed by a low vision specialist), such as handheld and stand magnifiers and telescopes. Digital tools may include hand-held portable pocket magnifiers for near and distance viewing, video magnification systems including portable and desktop models (previously referred to as CCTVs), and digital imaging systems to view text in large print.

Computers offer a variety of methods of providing a large print format. Hardware, such as a larger monitor and screen-magnifying lenses, enlarge content. The operating systems of many computers offer built-in accessibility features providing personal settings for displaying text, including large text. Screen magnification software also enables the viewing of large text.

What features of tools need to be considered for using large print formats?

Specific features that should be considered depend on the purpose of using a tool. For example, if a student needs immediate access to print in educational materials that are on an object (rather than in a textbook or on a typical printed hand-out), use of a tool such as a hand-held magnifier may be the most appropriate solution. If a student needs immediate access to one page of text providing directions to a learning task, then a student may prefer to use a digital magnifier. If a student needs immediate access to a book that is not in large print, the student may choose to download the text (if available)

from a digital library using a computer that enables the text to be customized or viewed using large print software.

Are there ways to supplement large print with other outputs?

Some students benefit from a multi-sensory approach to accessing large print through software programs that integrate large print with speech output, commonly known as audio-assisted reading. A student who benefits from supplemental auditory supports may increase their rate of reading, learning, and, consequently, their level of independence and efficiency in a variety of reading tasks. When students who read using large print are required to read a large amount of text, multi-sensory access can provide the flexibility needed to sustain reading for an extended period of time.

What features allow large print formats to be usable in multiple environments and for multiple tasks?

It is important to consider tools with multiple purposes that can provide access to a variety of tasks. Selecting the most appropriate tool for large print access may depend on the reading and writing skills needed for a variety of tasks and in different environments. Multi-purpose digital tools may increase a student's ability to access large print for word processing, reading books, calculating, web browsing, communicating with email, checking spelling, and using a digital dictionary. Using a portable digital magnifier for both near and distance viewing may increase a student's efficiency in interacting with print for all of these tasks in a variety of environments. Additional features of tools that are important considerations are how the tools integrate and interface with other access devices. The ability of large print devices to integrate with other tools can be essential for access and independence. For example, a video magnifier that integrates with a laptop computer can increase a student's access to all literacy tasks and in "real-time" learning contexts. The student can view information in large print as it is being written and simultaneously view additional large print material in any learning environment with tools that provide portability through integration with a laptop computer.

Technology for Use with Audio

What tools are traditionally used with audio formats?

DAISY playback devices are specifically designed to provide powerful navigation features, and computer software also exists which can be used to play audio files. The DAISY Consortium website provides information about many digital talking book (DTB) playback devices and has links to vendor websites: http://www.daisy.org/

Conversion from a source file to a DAISY audio file may be required. AMPs convert NIMAS and other source files to audio files that are available for eligible students. Learning Ally is an AMP that provides accessible audio books for a fee to eligible students across the country. Visit Learning Ally at http://learningally.org.

What features of tools need to be considered for using audio formats?

The primary features of audio are output, navigation, and supported study skills. It is important to select technology that provides students with ways to change features quickly and easily so that they can work as independently as possible.

An audio file can be played on stand-alone devices or with playback software programs. Selecting the player is important, and there has to be a match between the features a student needs and the features of the player. Audio can be rendered in different ways and each way may require a different type of player.

Output is what a student hears or the way that audio material is presented to the student. Output features that a team thinks about when selecting a player include voice selection, speed, volume, and pitch of voice. Voice can be either recorded human voice or synthesized, computer-generated speech. Many technology tools offer a choice of gender—male or female—that are understandable, easily heard, and match the needs and preferences of the student.

Navigation is another feature of audio formats to consider. Navigation means moving about within the material being read and varying levels of navigation are designed into audio files and playback devices. In an audio format robust navigation features are extremely important. It is critical to think about the level of navigation a student needs to be sure that the selected reader supports it. Some navigation features the team will want to look at include capability to—

- Fast forward or immediately navigate to a specific chapter, section, or page in the document
- Rewind incrementally by word, sentence, or paragraph to hear something again
- Stop at any place in the document and continue later in the same place (known as “bookmarking”)
- Link to a glossary or other sections or locations

Some audio players support study skills through links to glossaries or other references included in the educational materials. Some offer the features of bookmarking sections or adding text notes and voice notes so the student can annotate content as they are

listening to it. Later, when studying, they can easily locate their annotations for review or even extract their annotations so they essentially have a study guide or file of their notes.

What features allow audio formats to be usable in multiple environments and for multiple tasks?

It is important to consider tools with multiple features that can provide access to a variety of tasks. Some player technologies enable speech to be presented in different ways which may be needed in different environments and for different tasks. If it has been determined that a student needs audio as recorded human voice, it is important to select technology that will support that feature. If a student will be hearing a synthesized or computer-generated voice, then technology that will process and present that voice is critical. Many users of audio formats use synthesized and recorded voices, depending on tasks and other factors. In such cases, the selected technology would need to support both. Portability is also a consideration if the student needs access in different environments such as school, home, and community.

Technology for Use with Digital Text

While all students commonly receive digital text educational materials, such as ebooks and websites, the accessible format of digital text is produced specifically for use by qualifying students. It is worth repeating here, however, that schools can purchase or select accessible digital text educational materials for use by all students by following guidance from the AEM Center.

Visit Vetting for Accessibility at https://aem.cast.org/acquire/vetting-accessibility and Communicating Accessibility Requirements at https://aem.cast.org/acquire/communicating-accessibility-requirements.

What tools are traditionally used with digital text formats?

There are three main ways the digital text format can be rendered and provided to a student in a student-ready format. The first way involves computer software and some stand-alone hardware that reads text aloud using synthetic speech, often referred to as text-to-speech or TTS. There are both free and commercially available products that provide TTS. The ability to turn TTS on is also included in the operating systems of most devices. Some TTS software programs also included learning supports and are referred to as supported reading software. Image files are typically included with digital text.

Many of the accessibility tools that previously required the purchase and installation of accessible software are now included as standard options on many of the devices provided to students. This makes the process of finding a good feature match for a student that much easier (and less costly). Visit the AEM Center's Personalizing the Reading Experience page at https://aem.cast.org/use/personalizing-reading.

The second way digital text is rendered is as digital talking books (DTBs). These conform to the DAISY standard or Digital Audio Information SYstem, a multimedia format that combines robust navigation with either synthetic speech or recorded human voice. The DAISY DTB platform has been used successfully to support blind and low vision users for quite some time and is also considered very useful for students with other print-related disabilities. When DAISY files are opened by computer software programs, the user can typically hear text read aloud and simultaneously view it on-screen depending on the technology being used.

The third way consists of commercial digital texts or ebooks. Some offer embedded read-aloud functionality. There are many features of the extremely flexible digital formats that can be changed to meet the needs of the student depending on how the ebook is designed. Most can be manipulated to increase the font size or customize style. Text and background color can be changed. Digital text can include hyperlinks to add additional content such as definitions, background information, or prompts.

Using digital text files to learn mathematics is another important consideration for students who use this format. Visit the AEM Center's Teaching with Accessible Math page for tools that support accessible math notation: https://aem.cast.org/use/teaching-accessible-math. Additionally, be sure to ask publishers to use the MathML3 Structure Guidelines when requesting that NIMAS files be deposited in the NIMAC. Visit the AEM Center's NIMAS in Purchase Orders and Contracts page: https://aem.cast.org/nimas-nimac/nimas-purchase-orders-contracts

What features of tools need to be considered for using digital text formats?

When digital materials are created from source files that meet the NIMAS or the DAISY standard for accessibility, auditory and visual components, navigation, and other features are included. Categories of features of the tools may include navigation elements, visual supports, reading supports, and learning supports.

What features allow digital materials to be usable in multiple environments and for multiple tasks?

Files in the digital text format can be used with a large variety of technology-based delivery systems. Digital files are flexible and, depending on the technology being used, can be utilized in a wide variety of environments to accomplish different instructional tasks.

Are all digital files accessible?

No. For example, many digital files that are provided by publishers are locked, non-editable, read-only PDF files. Consequently, assistive technology devices and readers do not have the capacity to process the text that is seen on the screen or to make other changes.

How does audio-supported reading (ASR) relate to the use of digital text?

ASR is a technology-based approach for reading in which students simultaneously read digital text displayed on a computer screen or with refreshable braille while listening to an auditory version of the text such as with text-to-speech. With sufficient practice using ASR, both braille readers and magnified print readers can greatly increase the rate at which they move through text. This approach also holds great promise for students with learning disabilities who use text-to-speech. For more information about using ASR, download a related AEM Center article at httpss://aem.cast.org/get-started/resources/2021/audio-supported-reading.

Training

What type of training related to selected tools is needed for the student, educators, and parents for the materials to be used effectively?

Training for the use of accessible formats and related technology should be appropriate to the level of need for each team member. While some people will need extensive knowledge about a particular format or the technology needed to deliver that format, others will need less intensive training that helps them to understand what the format is, how it works, and how it can be expected to benefit the student.

While training about the technology is important, consideration should also be given to providing a wide variety of information about the use of the accessible format(s). Training content should include the operation of the technology, the goals for student learning that are addressed by the use of the accessible format(s), the situations when

each format or accommodation will be needed, and the ways that the use of the format(s) can be integrated into the student's educational program.

Various different types of training resources are provided on the AEM Center website. Examples include:

- AEM Online Learning Series on Accessible Materials and Technologies: https://aem.cast.org/learning-series/online-learning-series-accessible-materials-technologies
- Creating Accessible Documents: https://aem.cast.org/create/creating-accessible-documents
- Creating Accessible Math with MathML: https://aem.cast.org/create/creating-accessible-math-mathml
- Free live and recorded webinars: https://aem.cast.org/get-started/events

What are operational skills? How should the team plan for training that includes operational skills that the student needs in order to use the accessible format(s)?

Operational skills are skills that a user of assistive technology (AT) needs in order to operate the AT device. Skills may be very simple—such as understanding how to press a single switch—or they may be more complicated—such as typing on a computer keyboard. Operational competence may include not only the skills needed to operate the device, but also those skills that are needed to use access methods such as text-to-speech and screen readers. Operational skills are the ones we most often think of when teaching a student to use AT.

What are functional skills? How should the team plan for training that includes functional skills that the student needs in order to use the accessible format(s)?

During the selection process, the team focuses on the use of accessible format(s) for learning. They plan for the ways the student will use the format(s) and the technology that will deliver it to do specific, identified learning tasks. It is important for the team to be aware that the student may require help with knowing how to learn. Training in this area may include strategies for remembering, for identifying key points, for noting important information, or for responding to questions about educational material once information has been provided through the use of the accessible format.

In some cases, the act of reading has been so difficult for a student that the student has not had the opportunity to know how to learn from educational materials. Students who have had other kinds of supports and accommodations in the past may need direct

instruction on independent learning strategies. This instruction should be included in the training plan.

What are strategic skills for the use of accessible format(s)? How should the team plan for training that includes strategic skills that the student needs in order to use the accessible format(s)?

Strategic skills involve the ability to determine when to use the accessible format; and, if multiple formats are available to the student, which format to use for a specific task. Students may also need to be able to identify times when an accommodation or modification other than the use of an accessible format may be more effective for learning.

What are social skills for the use of accessible format(s)? How should the team plan for training that includes social skills that the student needs?

Students who use accessible formats need to understand and explain to others the reasons they are using the format and the support it provides them. In addition to learning when and how to use the device, students may need to learn to ask for the accessible format supports they need when those supports are not automatically provided.

Social skills that address the use of accessible formats also include knowledge of how to use the accessible format in an environment where others are using the standard format with continuity in the learning environment.

Are there specific skills that families and educators need to know in order to support the student's use of accessible format(s)?

Families and educators need the same knowledge and skills that the student needs—operation, function, strategic, and social.

If families and educators are not proficient in using braille code, how much training do they need to support a student who is using a braille tool?

The support of a collaborative team is usually necessary for a student to integrate the use of the braille format with accessible braille tools in learning environments. For team members who may not be proficient in braille, there are many ways the student can be supported when the TVI may not be available. For example, many digital braille tools operate in ways very similar to other common digital tools. If the student is proficient in braille, team members with knowledge about other aspects of technology can assist in

guiding the learning process. For example, many aspects of using a book in a digital format on a braille note taker are similar to using digital files on other devices. However, gaining a basic understanding of braille code can improve communication and the teaching and learning process for everyone. Gaining a basic understanding of braille can be achieved in a short period of time.

Instructional Strategies

What are general considerations that the team should address about a student's instructional needs when using the accessible format?

It is important for students to quickly understand the benefits of using accessible formats and associated technologies.

Initially, instruction should focus on helping the student learn the basic functions needed to get started using the formats and technologies effectively. Next, the accessible formats and technologies should be used for authentic tasks within learning environments. For example, the student would use the accessible formats and technologies to read a book in language arts class. Initial success with the tool is critical, and the next step is to build on that success by gradually introducing more features of the technology that enable the student to accomplish additional tasks.

When a team is supporting a student in using new accessible format(s) and technologies in general education classes, what is the best way to get started?

Once a student becomes proficient in using accessible formats and technologies in the classroom, instruction should focus on the process of learning the steps necessary to be independent with all aspects of gaining information in this manner. This may include tasks such as downloading a book from a web site, organizing files to use a particular book, conducting any file transfers that are necessary, and using more features of the technology.

What instructional content is needed when braille has been chosen as the accessible format?

After access to braille is provided, the most essential support is the accessible instruction that is critical to mastering braille and tactile literacy skills and the application of braille literacy skills in everyday learning and life experiences. Students require instruction in braille literacy skills to meet their individual needs and goals and in all areas of braille reading and writing, which may include gaining meaning from tactile

graphics; learning varied braille codes; and independently applying these skills in the educational curriculum.

To apply these skills, students need accessible instruction in braille technology tools to access information and communicate with others, instruction in the integration of tools with braille literacy skills, and deliberate and systematic strategies for integrating both the tools and braille literacy skills into the educational curriculum. This requires an additional support system of collaborative co-teaching by all team members, especially classroom teachers. This involves teachers and staff working together (often on a daily basis) to acquire and manage all of the braille/tactile materials and to monitor the use of the materials and student results.

This may include monitoring the student's access, participation, and progress in all teaching and learning activities and the integration of braille formats and tools in the instructional environment, enabling the student to make expected progress.

What instructional content is needed when large print has been chosen as the accessible format?

After appropriate access to large print is provided with tools, accessible instruction is also needed to ensure that the student is mastering print literacy skills and the application of print literacy skills in everyday learning and life experiences. Students may require instruction in print literacy skills to meet their individual needs and goals and in all areas of reading and writing, which may include gaining meaning from graphics, appropriately using tools to access print for near and distance viewing tasks, and independently applying these skills in the educational curriculum.

Ensuring high-quality and consistent access to the print environment may require a support system of collaborative co-teaching by the student's educational team with the classroom teachers. This involves teachers and staff working together to acquire and manage the student's visual access in all teaching and learning environments, monitoring the student's access, and monitoring the student's results in literacy skills through the use of accessible formats.

What instructional strategies are needed when audio has been chosen as the accessible format?

Learning through listening requires skills such as

- Listening with the attention and intensity necessary to gain meaning from educational materials

- Listening for extended periods of time (listening target is approximately 55 minutes at a time—the length of a typical secondary class)

In planning for a student's instruction, the team can provide direct instruction in listening skills that is similar to the instruction provided to students who use standard materials regarding study skills.

What instructional strategies are needed when digital text has been chosen as the accessible format?

When a student uses digital text and supported reading technologies, instruction is provided in a manner similar to that provided to students who use standard materials since all need to learn study skills such as identifying the main idea and summarizing the text.

In addition, instruction is likely to be needed in the same listening skills as those for the audio format. Students need to be able to attend to the digital text on the screen and, when audio is used, listen to the audio output with attention and intensity sufficient to gain meaning from the educational materials over extended periods of time.

When a student is experiencing an ongoing vision loss and is beginning to use the large print format along with magnification tools while learning braille, how can the team help the student get started?

It is not unusual for students to be reluctant to use the large print format and magnification tools for a variety of reasons, so it is important to initially convey to the student the benefits of using large print. Along with an orientation to using large print and magnification tools, consider an incentive program that encourages the student's independence using large print and the tools to access information and continue to make progress in the curriculum. Consider incremental steps such as the following: first, learning to use large print in a separate setting; then, with a few peers from the classroom; then, in the classroom with a small group; and then in multiple settings. Make a plan with the student along with choosing incentives.

Support Services

What supports are needed when a team has determined that a student will use an accessible format?

When the team has determined that a student will use a specific accessible format, team members plan which supports will be needed, how the supports will be provided,

and who will be responsible to ensure that supports are available to the student. Supports may include

- Services of accessible personnel to support the student and educators
- Case management and coordination
- File acquisition and format delivery to student
- Equipment management and maintenance
- Learning environment organization for accessibility, visibility, and access
- Procedures for use of accessible format(s) in specific environments where they are needed
- Evaluation of effectiveness of the use of the accessible format(s)
- Daily/frequent support of student use of the format(s)
- Communication with and support for all members of the student's educational team
- Communication with and support for family members

What should a team consider in order to ensure that all accessible format materials that the student will need are provided in a timely manner?

Initially, the team develops a list of materials in accessible formats needed and initiates acquisition of these materials. In addition, plans should be made for regular reviews of the educational materials required in the classroom to ensure that, if changes in plans for instruction occur, the student has timely access to the materials that other students use. A process for acquiring accessible formats of newly identified related educational materials should be developed so that the student's teachers know what to do if plans for classroom instruction change and new materials are identified.

For more information on sources for acquiring accessible formats, see Step 3, Acquisition of Materials.

What supports are needed when braille has been chosen as the accessible format?

Effective support for students who use braille for literacy begins with personnel who are well trained in the accessible knowledge and skills around braille. This includes a certified TVI and certified braille transcribers to prepare braille embossed materials. It also includes personnel who understand complex assistive technology and district instructional technology and can work collaboratively with teachers to integrate accessible braille access tools in the educational settings.

Support of braille formats is important, and schools need access to “student-ready” braille/tactile materials. There is a need for national, State, and local educational agencies to put in place systems for the acquisition, transcription, and/or adaption of educational materials into appropriate braille/tactile formats. This includes the provision of simple braille/tactile books for beginning braille readers. This process may begin with researching and acquiring a digital file that needs “value added” content from a braille transcriber in order for the book to be accessible to the student—what is referred to as “student-ready.”

Other important supports are tools needed to provide access to braille/tactile reading and writing in a variety of settings, as previously discussed.

What supports are needed when large print has been chosen as the accessible format?

Effective support for students who use large print for literacy begins with personnel who have the accessible knowledge and skills needed to teach print literacy skills to students with low vision. This includes a certified TVI and may include other teachers with accessible knowledge of reading skills. It also includes personnel who understand assistive technology and district instructional technology and can work collaboratively with teachers to integrate accessible large print access tools in educational settings. Supports are needed to access print educational materials with the student’s individual print presentation styles. This may include access to digital files and ensuring they are presented in the student’s most appropriate presentation for visual access.

What supports are needed when audio has been chosen as the accessible format?

As with other accessible formats, effective support for students who use the audio format begins with personnel who are well trained in literacy instruction and the use of the format. It also includes personnel who understand assistive technology and district instructional technology and can work collaboratively with teachers to integrate audio format tools into educational settings.

Supports are needed to access educational materials with the student’s individual audio presentation styles. This may include access to digital files and ensuring they are offered in the most appropriate audio format for the specific instructional task.

What supports are needed when digital text has been chosen as the accessible format?

Supports needed to access digital text files with the student's individual digital presentation tools are focused on the use of the technology. Support activities may include ensuring access to digital files and to the needed technology as well as troubleshooting technical difficulties and coordination of the activities of multiple supporters.

What supports will be needed if a team determines that some materials provided in the accessible format(s) will need to be created using the "locally created" strategy?

Class notes, handouts, teacher-made assessments, and other materials often need to be made accessible for students. The "locally created" strategy for providing accessible formats can require intensive support from school staff who work with the student on a daily basis. For example, teachers or other support staff may need to save files in DAISY or other formats. If materials are available only in print, they may need to scan content into a digital file that can be used by the student.

When this method of providing accessible formats is selected for some of the student's materials, the team should determine the specific materials needed and assign each activity to a specific team member for completion. This is particularly important in order to provide the student with needed materials in a timely manner.

It is important to comply with copyright law provisions and to obtain publisher permission to scan copyrighted works.

When a student needs materials in two or more accessible formats, how might needed supports differ?

If a student needs AEM in two or more accessible formats, the team initially considers the supports for each format separately as described above. Once needed supports have been identified for each format, the team may be able to consolidate some tasks, such as file acquisition, in order to ensure the most efficient plan for supporting the student.

Accommodations and Modifications

Do all students who use accessible formats of educational materials need additional accommodations and/or modifications to use accessible formats effectively?

When a student is unable to read or use text-based materials and needs an accessible format, the use of that format is an accommodation. The materials are presented in a different mode, but the content is the same as the standard materials used for the curriculum. If the use of the accessible format provides access to the materials and the student is successful academically, then no further accommodations are needed. However, additional accommodations often are needed, especially when use of the accessible format is new.

What is the difference between an accommodation and a modification?

Accommodations are instructional practices that allow changes in timing or scheduling, setting, response, or presentation that do not change the content or requirements of the task(s). Modifications are changes in the content or requirements of the task(s). As a general rule, it is better to accommodate when possible and to modify only when an accommodation does not remove the barriers to participation and learning for the student.

The word *accommodation* indicates changes to how the content is taught, made accessible, or accessed. Accommodations do not change what a student is expected to master; rather, they provide access. The objectives of the course remain intact.

The word *modification* indicates that what is being taught, the content, is modified or that the learning expectations are changed, typically lowered or reduced. The student is expected to learn something different than the general education standard. For example, the instructional level, general education benchmarks, or number of key concepts to be mastered may be changed.

What kinds of accommodations and modifications might a team consider for students who will be using accessible formats in instructional programs?

There are four main types of changes that can be made in any instructional program. They include changes in timing and scheduling, setting, student response mode, and presentation of instruction.

What kinds of changes in timing and scheduling might the team consider as accommodations or modifications in a student's educational program?

Changes in timing or scheduling may be needed for any student who uses accessible formats. These changes may be needed because the student needs additional time to use a format or because of scheduling concerns that arise. The team can consider accommodations such as

- Extended time
- Multiple or frequent breaks
- Division of long-term assignments
- Provision of additional time in order to learn tools
- Provision of time to accommodate needed transitions in school environment

Modifications might include changing expectations by adjusting the challenge of learning objectives or shortening written assignments to the extent that the end product or outcome is different than what is expected of other students.

What kinds of changes in setting might the team consider as accommodations in a student's educational program?

Changes in setting may be needed for any student who uses technology-based accessible formats. These changes may be needed because of the location of the technology in the school environment or the student's need for additional support for some aspects of the use of the accessible formats. The team can consider accommodations such as

- Preferential seating
- Changes in the setting, such as lighting
- Reduction of distractions
- Changes in location
- Changes in the location of the technology used to access the accessible format(s)

What additional changes in a student's response mode might the team consider as accommodations in a student's educational program?

Changes in a student's response mode may be needed for a student who uses accessible formats. Just as the student needs a different format for accessing educational materials, a different mode of response may be needed in order to

demonstrate learning and accomplish activities. The team can consider accommodations such as

- Use of assistive technology to provide responses and complete activities
- Alternatives to written responses such as dictation or spoken response
- Adaptations to test booklets or scoring sheets

What additional changes in the presentation of instruction might the team consider as accommodations in a student's educational program?

Presentation changes are changes in how the information is presented to the student. It logically follows that a student who requires accessible formats may also require additional presentation changes in instruction and classroom materials. Alternative modes of presentation of instruction (e.g., braille, tactile graphics, large print, audio, or digital text) may be needed to reduce barriers and increase participation and achievement. A student may need additional support for some aspects of the accessible format. The team can consider accommodations such as

- Accessible classroom and teacher-made materials
- Verbal, graphic, multimedia, or other modes of presentation of instruction
- Assistive technology to provide access and alternative means of presentation
- Supports for studying/learning and note taking