

PEPNet

Perspectives

Fall 2008

Focus Issue: Speech-to-Text Services

PEPNet FAQs on web, in print

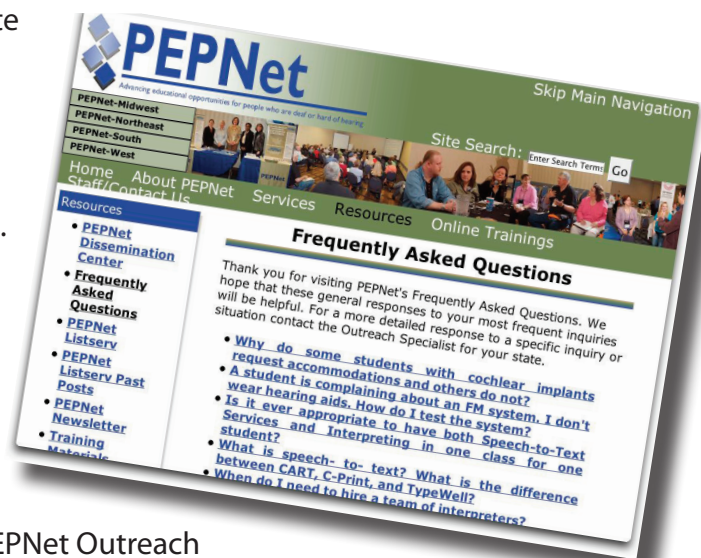
Our new Frequently Asked Questions (FAQs) page on the PEPNet website features responses to your questions about accommodations, services, and tools that provide access for people who are deaf or hard of hearing. Selected FAQs will soon be presented on the website in American Sign Language as well.

Visit the FAQ page at:
www.pepnet.org/faq.asp

Each issue of *Perspectives* will also present FAQs relevant to that issue's focus.

We welcome your questions on new topics, and requests for additional information on posted FAQs. Professionals, students, clients, parents—anyone with questions relating to deafness—are encouraged to submit their queries.

For a more detailed response to a specific inquiry or situation, contact the PEPNet Outreach Specialist for your region. Contact information is listed on p. 12.



SOME SPEECH-TO-TEXT FAQs

What is speech-to-text?

Speech-to-text services deliver spoken information such as lectures, presentations, and classes as text on a computer screen in real time or as printed documents. *Speech-to-text service is an appropriate accommodation for individuals who are comfortable receiving information via text.*

Speech-to-text services often are used for students or others who do not use sign language interpreters or when course content has vocabulary more easily presented in print (e.g. foreign languages, medical courses).

See *Speech-to-Text FAQs*, p. 2

www.pepnet.org

Speech-to-Text FAQs from p.1

What is the difference between CART, C-Print®, and TypeWell®?

CART (Communication Access Real-time Translation), C-Print®, and TypeWell® are different systems for delivering speech-to-text services.

- CART provides a verbatim output, like you see on TV or court reporting. It requires specialized stenography equipment and at least two years of training.
- C-Print® and TypeWell® provide a content-based meaning-for-meaning transcription (similar to an interpreter) rather than verbatim. Laptops are used with specialized software. Training for TypeWell® and C-Print® can be obtained online and generally requires one to two months of training.

All three systems can function either remotely or with the service provider in the classroom. The transcription can be projected for a large audience or an individual can view the service provider's laptop or a separate monitor.

Speech-to-text is considered a real-time accommodation. Some colleges and universities provide a copy of the transcript to students.

Additional resources:

- Speech-to-Text Services Network:
www.stsn.org/
- C-Print®:
www.ntid.rit.edu/cprint/

- TypeWell®:
typewell.com
- National Court Reporters Association:
www.ncraonline.org

Is it ever appropriate to have both speech-to-text services and Interpreting in one class for one student?

The dual accommodations of interpreting services and speech-to-text services for the same course are rare, but there may be specific circumstances for which an individual determination for dual accommodations might be appropriate. In some circumstances, the complexity of the content and the need for a thorough text recording of the discourse may make it appropriate and/or cost effective.

Accommodations should always be determined case by case. Speech-to-text services may not be appropriate for all students, and interpreting services will not be appropriate for all students. It is important to involve students in discussions about their communication preferences.

Recommended Reading:

"Americans with Disabilities Act: Responsibilities for Postsecondary Institutions Serving Deaf and Hard of Hearing Students Second Edition Questions and Answers" is available from the PEPNet Dissemination Center (PDC) download page, pdcorder.pepnet.org/order/download_result.aspx

www.pepnet.org

Your key to helpful resources!

Speech-to-Text Considerations

Kinds of Speech-to-Text Services

All speech-to-text services strive to quickly translate auditory information into text on a computer screen or other display device. This text provides access to verbal communication and auditory information for individuals who cannot hear.

There are three broad categories of speech-to-text services: CART, Text Interpreting (i.e., C-Print® and TypeWell®), and Automatic Speech Recognition systems (ASR). See the “Comparison of Speech-to-Text Services Chart” on p. 7 for details about each of these.

Differences and Similarities

From the consumer’s viewpoint, there are primarily three factors to consider in choosing a speech-to-text service:

- 1) verbatim-ness = percentage of exact words spoken presented in text; word-for-word
- 2) accuracy of content = percentage of ideas expressed by speaker that are clearly and accurately shown in the text
- 3) quantity of words to read = this is related to verbatim-ness, as the higher the verbatim-ness, the more words of text

Legal Aspects of Speech-to-Text

The right to communication access is guaranteed by federal and state laws. These include the Americans with Disabilities Act (ADA), Section 504 of the Federal Rehabilitation Act, and the Individuals with Disabilities Education Act (IDEA).

This access can be provided by a sign language interpreter, or by a speech-to-text service. The U.S. Department of Justice’s interpretive guidance that accompanies the Title II Regulation of ADA explicitly adds “notetakers” and “computer-aided transcription services” to the list of

auxiliary aids and services for individuals who are deaf or hard of hearing.

Read more on these federal laws at:

- **Section 504:** www.section508.gov/index.cfm?FuseAction=Content&ID=15
- **IDEA:** idea.ed.gov/
- **ADA:** www.ada.gov/
- **U.S. Department of Justice’s interpretive guidance:** www.ada.gov/taman2.html

Sign, Speech-to-Text, or Both?

If a student uses sign language, he may need to decide whether an interpreter or a speech-to-text service is best for him. Institutions rarely provide dual services for a single student.

When deciding which service is appropriate, consider the following:

- Does the student understand sign language well enough to comprehend the anticipated level of the class content?
- Will the class include extensive vocabulary or other items that the student may want to learn through permanent text rather than via fingerspelling or sign?
- Are the student’s reading skills adequate for learning quickly via text?
- Is the student comfortable using detailed class notes to study (if transcripts are available)?
- Has the student used a speech-to-text service in the past? Did he learn well with this service? Did he have any issues or problems?
- If the student does not use her voice in class, is she willing to type questions/comments for the speech-to-text service provider to voice for her?

Special thanks to the Speech-to-Text Services Network for contributions to the content of this issue of Perspectives.

Remote Speech-to-Text

When the consumer (student), the speech-to-text service provider, and the speaker (instructor) are in different locations, remote speech-to-text services may be a viable option.

Here are three situations that might be handled with remote services:

- 1) The student and instructor are in class, but no local service provider is available.
- 2) The instructor and the service provider are in class, but the student is attending from a remote site.
- 3) The instructor, the student and the service provider are all in separate locations. For example, the instructor is in the classroom; the student is viewing via video conferencing or the Internet; and the service provider is in a third location.

On October 25, 2007, PEPNet sponsored a TeleTraining titled, "An Inside Look: Providing Remote Captioning Accommodations." The full transcript, PowerPoint and handouts have been uploaded to the PEPNet website, and are available at

www.pepnet.org/training/train071025/

Some of the issues addressed in this TeleTraining:

- Questions about remote captioning services;
- Using remote captioning accommodations when a live captionist is not available;
- Technology and equipment required to use remote captioning services;
- Getting information directly from different remote captioning agencies simultaneously.



Providing Hard-copy Texts of Classroom Lectures

If your institution provides students or others hard copies of class speech-to-text transcripts, it is important to know and understand the institution's intellectual property policies regarding the sharing of notes.

Some institutions give hard copies or digital files of the notes to the student receiving the service, others do not. Here are suggestions for why an institution might consider giving hard copies to students and others:

- Transcripts of lectures can be used as complete classroom notes, preserving the entire lecture and all students' comments for subsequent review by deaf and hard of hearing students taking the course.
- Instructors may welcome the transcripts as a way of tightening their lectures and reviewing their students' questions and comments.
- Transcripts can be of value in tutoring deaf and hard of hearing students, enabling tutors to organize tutoring sessions in close accord with course content.
- Interpreters can use the transcripts to improve their signing of course-specific words and expressions.

New organization's president promotes speech-to-text services

Standards, Certification STSN Goals

Speech-to-Text Services Network is a new national organization designed to create awareness of speech-to-text services. The group's mission is to promote quality services and professional development opportunities, and to serve as a national resource for the speech-to-text community.



*STSN President
Shannon Aylesworth*

STSN's new president, Shannon Aylesworth, is Assistant Program Manager and Coordinator of Speech-to-Text Services for the Deaf/Hard of Hearing Program at the University of Wisconsin-Milwaukee. She also has been a Speech-to-Text Service Specialist for PEPNet-Midwest, training service providers and creating awareness about services to other postsecondary institutions. She began working with the University of Wisconsin-Milwaukee's Deaf/Hard of Hearing Program in 2000, and brings knowledge of both C-Print® and TypeWell® to STSN.

"As a new organization, we are working toward creating awareness of our services," Aylesworth says. "We face a

challenge in having limited financial resources, but we are working diligently to broaden our membership base."

One of STSN's highest priorities is to develop professional standards applicable to all speech-to-text systems (i.e. C-Print®, CART, TypeWell®, Voice Recognition).

STSN's Continuing Education subgroup responds to the need for professional development opportunities with innovative technological approaches, such as a resource found at www.textcaptioning.com.

"This site offers providers an opportunity for professionals to develop their real-time skills and vocabulary with audio files from a variety of educational lectures," says Aylesworth. "As there are varying speed options, the site is a great resource for both the new and the not so new service providers."

The group also coordinates STSN's Professional Development Project and oversees the Professional Development Unit

(PDU) system for members.

This group works on increasing continuing education opportunities for speech-to-text service providers and looks for opportunities to offer national and regional workshops for administrators and providers. The group will soon offer digitized training materials that offer self-guided study options (eligible for PDUs) for STSN members.

The Membership Advisory Group oversees membership (\$35 annually). STSN soon will offer online and credit card payments for yearly dues as well

as offer a calendar of speech-to-text related events around

the country.

The Professional Standards Advisory Group develops professional standards for speech-to-text service providers and is researching the process to establish state licensure and national certification. STSN's goal, according to Aylesworth, is to have a report available by June 2009.

See STSN, p. 6

STSN
Speech-to-Text Services Network

STS Professional Ethics and Conduct

Ethical and professional behaviors are especially important in professions that support basic human rights, such as the right to communication access.

The functions of a Code of Ethics are summarized well by Columbia University professor Stephen Unger:

"First, it can serve as a collective recognition by members of a profession of its responsibilities.

Second, it can help create an environment in which ethical behavior is the norm.

Third, it can serve as a guide or reminder in specific situations.

Fourth, the process of developing and modifying a code of ethics can be valuable for a profession.

Fifth, a code serves as an educational tool, providing a focal point for discussion in classes and professional meetings.

Finally, a code can indicate to others that the profession is seriously concerned with responsible, professional conduct."

Each of the three Speech-to-Text services below has developed a Code of Ethics. You can view them via these links:

CART:

ncraonline.org/aboutncra/cope/

C-Print® :

www.jsu.edu/depart/dss/terps/appendixd.pdf

Typewell®:

www.stsn.org/TWCodeEthics.html

STSN from p.5

"This group will work with the Continuing Education Advisory Group to inform members about ethical codes and guidelines," she says. "The goal of this collaborative effort is to provide the community with tools to support individual decisions (and corporate policies) to promote ethical behavior."

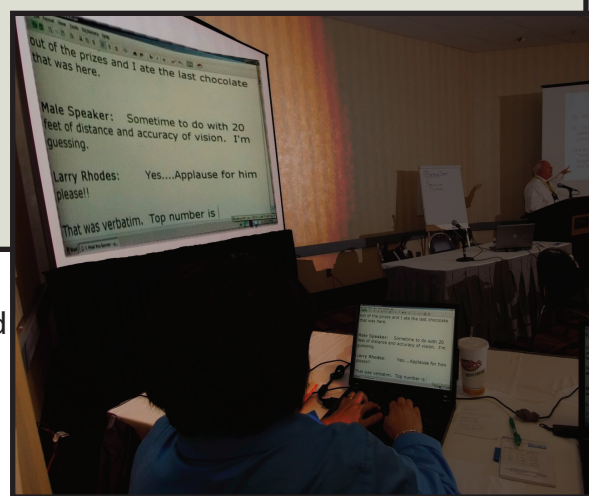
The Public Relations Advisory Group is working to increase awareness of speech-to-text services and promoting STSN as the profession's leading organization. The group has created materials for distribution

at professional conferences and workshops and is developing a calendar of national conferences and events with information about advertising costs and deadlines. This group also is looking for ways to get articles about STSN in various publications and is compiling information about publication dates, deadlines, and costs to help the group decide where to focus its efforts in the next two years.

Aylesworth would like STSN to be recognized in the

coming years as a leading professional organization in the speech-to-text community, one that promotes ethical behavior and quality services through professional development opportunities, certification, and professional standards.

To learn more about STSN and how to join the organization, visit stsn.org/Members.html.



Comparison Chart of Speech-to-Text Systems

	Description	Equipment	Training	Verbosity (pages/ hour)
CART	Provider types nearly every spoken word. This steno-based approach is described as verbatim.	Eight-key steno machine is used to record court proceedings and specialized software is used to create a real-time text display.	Requires two to four years. Associate or Baccalaureate degrees offered. List of approved reporting programs at the National Court Reporters Association website. www.ncraonline.org	15 - 20
Note: In Meaning-for-Meaning Systems (e.g., C-Print® and TypeWell®) the service provider uses a laptop computer and proprietary software to create a real-time text display on the same or a second laptop. The laptops are connected via cable or wirelessly. The service provider types only the meaning of the spoken words; repetitions, interjections and other extraneous material is ignored.				
C-Print®	Provider interprets (i.e. listens for content) what the speaker says and using a standard keyboard and phonetic-based abbreviation system delivers a meaning-for-meaning text display.	C-Print® software is used to produce text on a laptop computer or other display monitor.	Requires an initial (approximately) 60 hours of training in the abbreviation system and text-condensing strategies. Additional training is recommended for the provider to increase real-time skills before entering the classroom.	6 - 10
TypeWell®	Provider interprets (i.e. listens for content) what the instructor says and using a standard keyboard and spelling-based abbreviation system delivers a meaning-for-meaning text display.	Laptop computer is used with TypeWell® software	Requires an initial (approximately) 60 hours of training in the abbreviation system and text-condensing strategies. Additional training is recommended for the provider to increase real-time skills before entering the classroom.	6 - 10
Speech Recognition	A service option that enables a speech-to-text service provider to create a real-time text display using speech recognition software. The process often is described as voice-to-text.	Provider speaks into a microphone and the software translates the speech into text. A computer keyboard may be utilized during this process to change a word or phrase not recognized by the software or recognized incorrectly.	Requires extended voice training to achieve a high rate of accuracy. While the initial voice training may take anywhere from five to 30 minutes, it takes significantly more time to ensure quality output.	15 - 20

Same Speech, Three Different Transcripts

From dss.jsu.edu/pp/m4m_files/frame.html

(Excerpt taken from PEPNet 2008 Conference presentation by Cindy Camp, Judy Colwell and Pam Francis titled, "Meaning-for-Meaning in Speech-to-Text Services: A Better Understanding.")

Verbatim

Here is a cross section of the Great Pyramid. One of the things they did, is you have all of this work going on here. Here is a chamber cut into the bedrock. All the way down here. What people can't figure out is: How did they get the fresh air -- this is like 300 feet or more down this shaft into this big chamber that was cut into the bedrock. How did they get fresh air down in there? Because you are going to have people down there working, breathing, and exhaling. After a while, they would use up all the oxygen. So, how do they get fresh oxygen down there for those people. That is one problem.

Meaning-for-Meaning

Here is a cross section of the Great Pyramid. One of the things they did, you have all this work going on, a chamber built into the bedrock. How did they get the fresh air 300 feet or more down this shaft into this chamber? Because you will have people down there working, breathing and exhaling, and after a while use up all the oxygen.

Meaning-for-Meaning

Here is a cross section of the Great Pyramid. There is all this work going on. There is a chamber cut into the bedrock. How did they get fresh air in there? People are breathing and exhaling and they would use all the oxygen.

A Student Says:

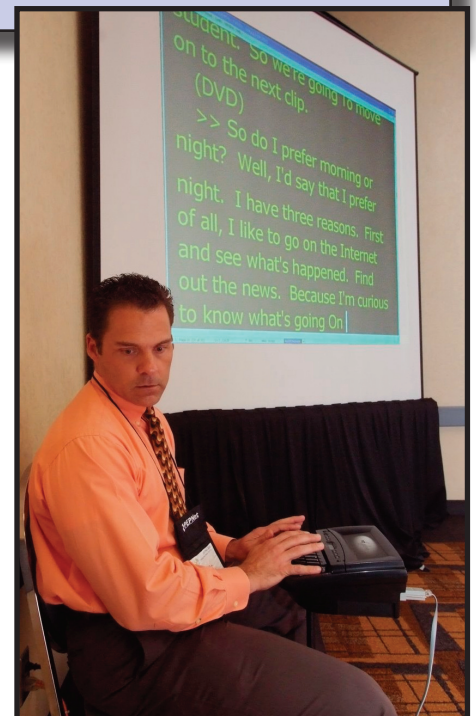
"Using C-Print® in high school had a positive impact on my performance in the classroom. C-Print® enabled me to follow more closely what was happening during class as well as seeing what comments my fellow classmates were making. This allowed me to be more involved in class discussions and enabled me to relate better to my peers. As it did in high school, C-Print® continues to do so in college, allowing me to tackle my studies with the same gusto as my hearing peers."

Alexandra Johnson, Student, Rochester Institute of Technology

Professionals Say:

"With verbatim, it is English, my native language and it is so fast! I like hearing what I can hear, but following the captions to fill in the gaps." *Pietrina Probst, deaf professional*

"I have used CART, my preferred communication access mode, from its inception. Because it is verbatim, I know that I won't miss anything." *Heidi Adams, PEPNet Outreach Specialist*



Demystifying Hearing Assistance Technology: A Guide for Service Providers and Consumers

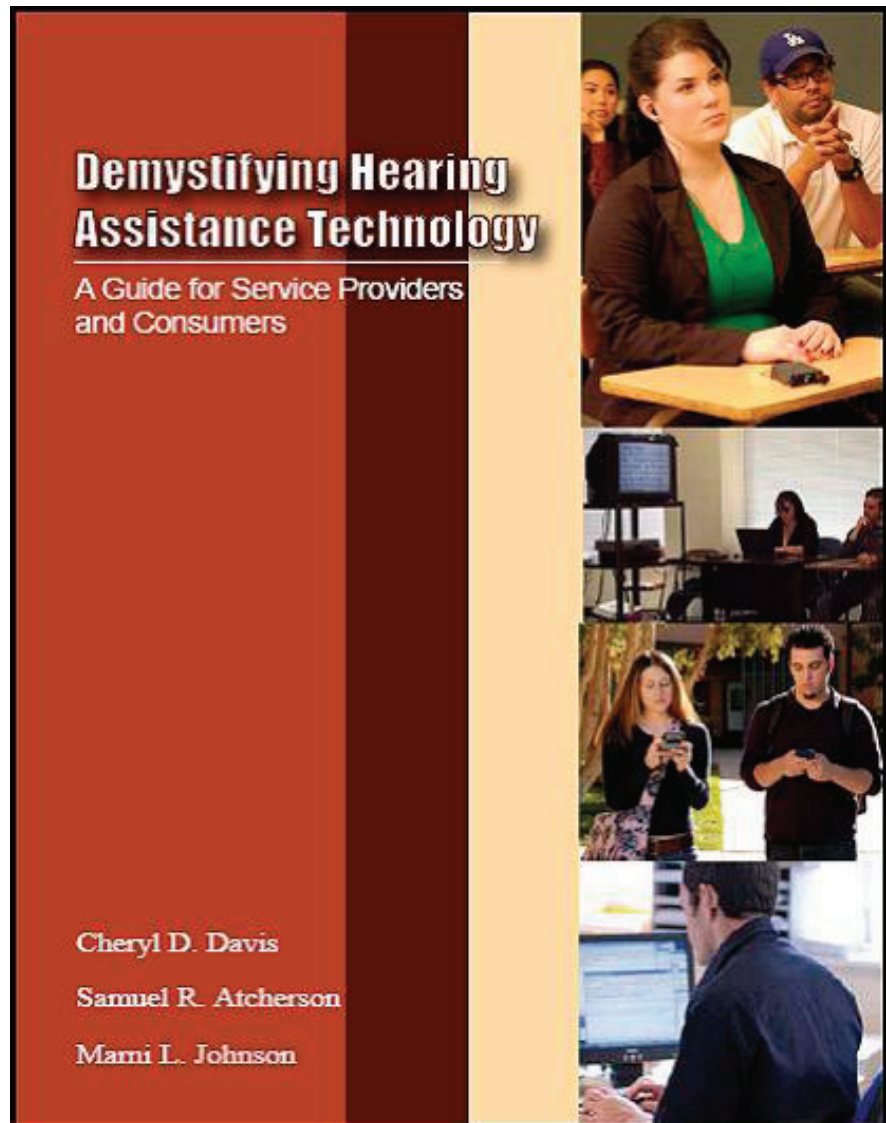
Assistive listening technology is often an important component in delivering speech-to-text services. This is especially true when speaker, student/client, and service provider are in different locations.

Davis, Archerson and Johnson have written an easy-to-understand, yet comprehensive book on ALD concepts, accommodation strategies, and available devices that can help both consumers and service providers make informed choices.

Looking for information on hearing loss and assistive technology presented in a user-friendly style? Look no further.

The authors of *Demystifying Hearing Assistance Technology: A Guide for Service Providers and Consumers* have used their experience as trainers on hearing assistance technology, audiologists and consumers to create this guide-book which provides information on hearing loss, and hearing aid and hearing testing terminology. Also covered is the current range of assistive technology for face-to-face communication, telecommunication, and environmental alerts.

General information about the functional impact of hearing loss on communication in a variety of settings is provided, as well as tips on evaluating a communication setting for challenges to someone with hearing loss. The text gives readers a clear understanding of the functional impact of hearing loss and the range of communication access options that are available. An extensive resource section is included.



The book is available in PDF format from the PEPNet Dissemination Center. Go to pdc.pepnet.org and click on Downloads (item # 1221). It also is available from the author for a limited time. Email davisc@wou.edu to request a free copy. (Be sure to include your mailing address.) This product was developed with funds from the US Department of Education, Office of Special Education and Rehabilitative Services.

PEPNet listserv:

Find info on STS—or any topic you like

PEPNet has made it easy for you to find the information you need with the click of your mouse! If you already are a member of the PEPNet Listserv, follow the directions below. If you are not a member, go to listserv.uwm.edu/mailman/listinfo/pepnet and sign up today!

Once you are a member, you can access the archives:

1. Go to www.pepnet.org
2. Click on "Resources" tab (located on the green bar below the pictures)
3. Next click on "PEPNet Listserv Past Posts" in the left menu box. This will take you to a page where you can review a listing of most frequently posted topics.

If the topic you are looking for isn't on this list:

4. In the left menu box, click "PEPNet Listserv"
5. Scroll down to "Reading the PEPNet Listserv Archives"
6. Click on "PEPNet listserv interface website"
7. Click on "PEPNet Archives"

Log in with your username and password for access to the archives. Search by thread, subject, author, and date.

If you still haven't found the topic you're looking for, you can start a new discussion on the Listserv!

We have more than 700 members from all over the United States, Canada, and even Japan!

As long as you are a member of the list, all you need to do is send an email to pepnet@uwm.edu. For further assistance, email Cassie Franklin at cassie.franklin@pepnet.org.

Speech-to-Text Services: PEPNet survey explores salaries, demographics

PEPNet-Midwest conducted an online survey in 2006 to gather information on speech-to-text services in the postsecondary environment. The results offer a first-time view of demographic data on programs offering speech-to-text services and establishes a baseline for evaluating emerging trends within this profession.

Note that speech-to-text services is a growing field and that the provision of these services to students who are deaf or hard of hearing is dynamic and ever changing.

You can download a document that includes a summary of the survey questions titled, "2006 Survey of Postsecondary Speech-to-Text Services: Salary and Program Environment" (item 1226) from: pdc.pepnet.org/

Demographics (item 1222) pdcorder.pepnet.org/media/1222.2006%20Salary%20Survey%20Summary.pdf



Download detailed information on Speech- to-Text Services

"A Guide to Speech-to-Text Services in the Postsecondary Environment" is available from the PEPNet website.

Topics covered include:

- Overview/Types of Speech-to-Text Services
- Profiles of Students Using Speech-to-Text Services
- Considerations for Implementing Speech-to-Text Scheduling Considerations
- Developing Policies and Procedures

http://pdcorder.pepnet.org/media/STS_Guide%5B1%5D.pdf

Do you have an article idea for *Perspectives*?

Do you have a "best practice," work experience, technique, or insight others would find useful?
Share it with our national community.

Your articles, suggestions and feedback are welcome!

The newsletter workgroup considers content that is related to our mission.

Articles must:

- be of reasonable length;
- be original work or from a non-profit organization
- suggest only resources that are free (or nearly free) and readily available in accessible formats.

Write us!

newsletter@pepnet.org



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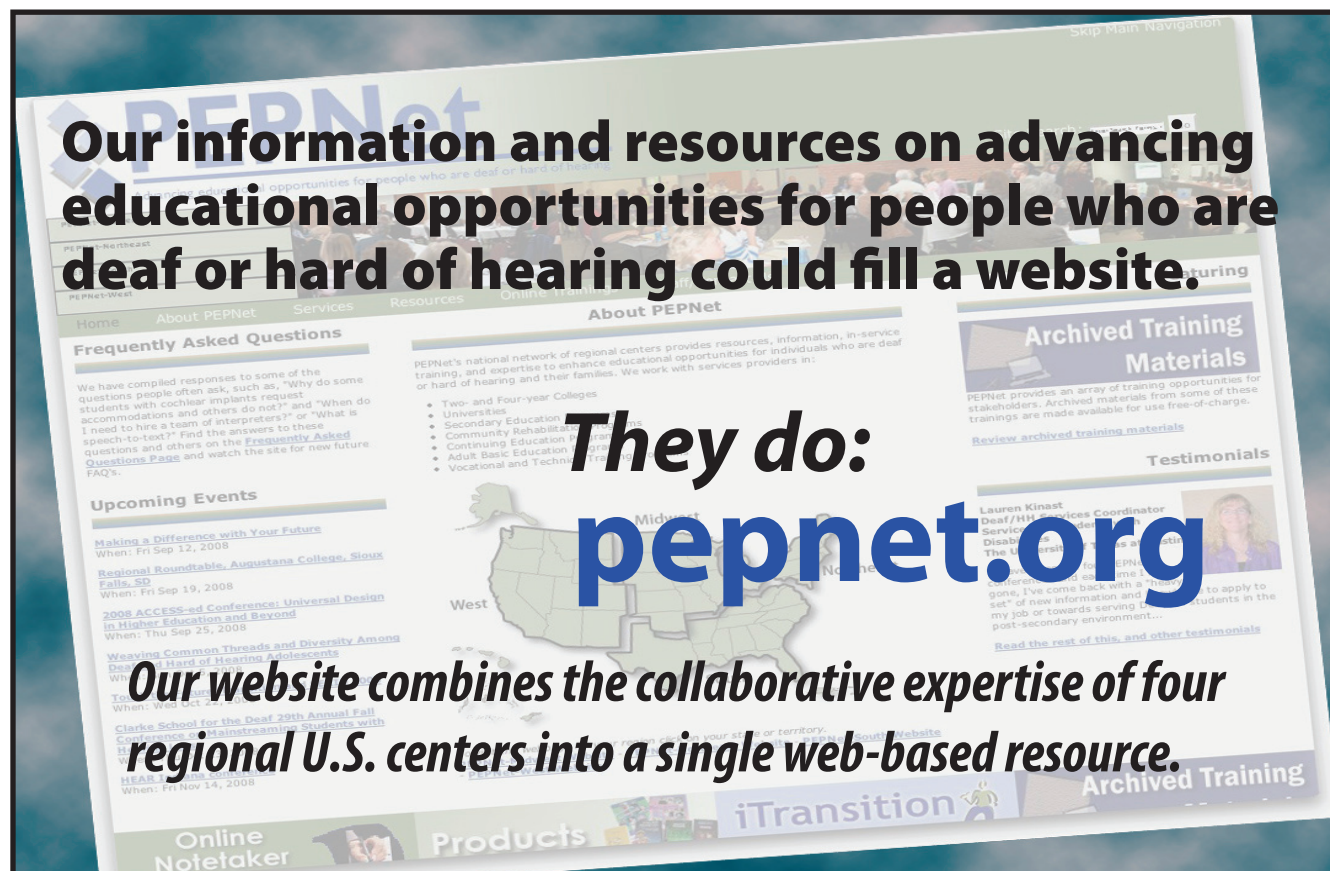
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Our information and resources on advancing educational opportunities for people who are deaf or hard of hearing could fill a website.

They do:

pepnet.org

Our website combines the collaborative expertise of four regional U.S. centers into a single web-based resource.





PEPNet's *Regional Outreach Centers*

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