

**CART in the Classroom: Meeting the Communication Access Needs of Students  
Requires an Individual Approach**

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## **Introduction**

Communication Access Realtime Translation (CART), also known as realtime captioning, is a word-for-word speech-to-text interpreting service for people with a hearing loss or who would otherwise benefit from this accommodation. Unlike computerized notetaking or abbreviation systems, which summarize information for the consumer, CART provides a complete translation of all spoken words and environmental sounds, empowering consumers to decide for themselves what information is important to them. Section 36.303(b)(1) of the Americans with Disabilities Act specifically recognizes CART as an assistive technology that affords effective communication access.

A CART provider uses a steno machine, notebook computer, and realtime software to deliver speech-to-text translation on a computer monitor or other display for the benefit of an individual consumer or larger group in a number of settings. In addition, a CART provider is sensitive to the varying needs of consumers and has had training in conveying a speaker's message, complete with environmental cues.

There has been tremendous demand for CART in the educational setting, from elementary to graduate school, as this technology has gained greater notoriety among educators, disability services coordinators, and students with hearing loss as a useful method for participating fully in the classroom. As a consumer passes from secondary to postsecondary education, both the needs of the individual and the environmental demands change.<sup>1</sup>

## **CART Benefits**

The benefits that CART can provide for a consumer in an educational setting are considerable. In a 1998 study conducted at the Rochester Institute of Technology, students who were deaf or hard-of-hearing responded favorably to the quality of CART services. The authors state, "A majority of the students reported that they understood more from the steno-based text display than from interpreting" (Stinson et al., 1999, p. 12).

Members of the National Task Force on Quality of Services in the Postsecondary Education of Deaf and Hard-of-Hearing Students have noted several advantages to the steno-based CART system: 1) CART provides a verbatim record of the class, capturing every word spoken; 2) a single CART provider can cover a two-hour class with a brief break; and 3) the steno machine is silent (Stinson et al., 1999, p. 21). Because CART gives students with hearing loss a complete record of what is said in the classroom, several other advantages to this method of communication access become apparent.

***Independent Learning.*** With CART, the responsibility for a student's education rests with the student. The student has a verbatim record of the class or discussion and can determine what is important based on the student's understanding of the material. In addition, students can have the text file fed through software as the provider realtimes the class. The student is then able to use the highlight or annotate features of the software to

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<sup>1</sup> This information can be found in the CART Provider's Manual (<http://www.cartinfo.org>).

pick out what he or she wants to retain. Thus, the student has the choice of obtaining the verbatim record or only the portions he or she considers important.

**Full Participation.** Since CART provides services in real time, the deaf or hard-of-hearing student has the opportunity to participate in the class just like any other student. Besides getting the text of the lecture, CART allows for inclusion in classroom banter and questions asked by other students. The student with hearing loss is able to have a full understanding of the classroom experience, not just notes of the content discussed.

The provision of CART services also benefits instructors. For example, verbatim lectures may give the college professor an additional tool for preparing tests or integrating information into a research study. Further, “Some instructors welcome the transcripts as a way of tightening their lectures and reviewing their students’ questions and comments. If the instructor chooses, he or she should be at liberty to share them with hearing members of the class also. The transcripts can be of value in tutoring deaf and hard-of-hearing students, enabling tutors to organize tutoring in close accord with course content” (Stinson et al., 1999, p. 7-8).

### **CART in Secondary Educational Settings**

Section 504 of the Rehabilitation Act of 1973 (Section 504) and Title II of the Americans with Disabilities Act of 1990 (Title II) prohibit discrimination on the basis of disability. This extends to secondary education. However, several of the requirements that apply through high school are different from the requirements that apply beyond high school.

Section 504 requires a school district to provide a free appropriate public education (FAPE) to each child with a disability in the district’s jurisdiction. Whatever the disability, a school district must identify an individual’s needs and provide any regular or special education and related aids or services necessary to meet those needs as well as it is meeting the needs of students without disabilities. CART services are considered an appropriate means of making education accessible to students who are deaf or hard-of-hearing (Students with Disabilities Preparing for Postsecondary Education: Know Your Rights and Responsibilities, <http://www.ed.gov/ocr/transition.html>).

After it has been determined that a student has a disability, the parent(s) and the Local Education Agency (LEA) will set up an Individual Education Program (IEP). In order to do so, they must establish an IEP team, which consists of the parent(s), at least one regular teacher of the student, a representative of the public agency, an individual who can interpret the instructional implications of any disability evaluations, and any other individuals who have knowledge or special expertise regarding the child, such as related services personnel (e.g., a CART provider or sign language interpreter).

When the team has determined that the child will receive CART, the IEP should include specifics regarding the service, such as CART will be provided by a realtime court reporter who can write at a minimum speed of 225 words per minute, an electronic

copy of the notes will be given to the student immediately after each class so the student can make his or her own notes at home, same-day substitute CART providers will be provided when needed, and the student will be allowed to follow the CART feed on a laptop computer on his or her desk.

According to the law, each state must provide services for publicly educated disabled children with the full understanding that the services will differ based on the individual needs of the student. Section 504 and Title II allow for each state to administer its program differently as long as it provides disabled students with the services they need. However, the LEA is not required to provide a disabled child with an IEP, and the child is not eligible for special education and related services, if the child is enrolled in a private school by the parent(s). Individual states can specify what services the LEA can provide to students enrolled in parental placement private (Meeting the Communication Needs of Children in School, <http://www.cartinfo.org/idea.html>).

### **CART in Postsecondary Educational Settings**

More and more high school students with hearing loss are planning to continue their education in postsecondary schools, including vocational and career schools, two- and four-year colleges, and universities. However, there are differences in the way that assistive devices and special education needs are handled in postsecondary schools as opposed to primary and secondary schools.

A postsecondary school is not required to provide a free appropriate public education. Rather, the school is required to provide appropriate academic adjustments as necessary to ensure that it does not discriminate against those people with disabilities. These adjustments could include a sign language interpreter or CART services and must be determined based on a student's individual needs. In providing the adjustments, the postsecondary school is not required to make substantial modifications to essential requirements, such as changing the content of an exam. The school also does not have to make modifications that would fundamentally alter the nature of the service, program, or activity that would result in undue financial or administrative burdens.

However, providing for a CART provider in the classroom is considered a reasonable accommodation, as is allowing extra time for a disabled student to take an exam. The goal is to balance the needs of the student with the capabilities of the institution. Naturally, the accommodations that a student requires will vary, as will the approach of the school.

A postsecondary student who needs auxiliary aids is obligated to provide notice of the nature of the disabling condition to the college and to assist it in identifying appropriate and effective auxiliary aids. Unlike secondary schools, the students themselves must identify the need and give adequate notice of the need. A college may also obtain its own professional determination of whether specific requested aids are necessary.

Colleges are not required to provide the most sophisticated auxiliary aids available; however, the aids provided must effectively meet the needs of the student. Section 504 and Title II both state that aids, benefits, and services are not required to produce the identical result or level of achievement for disabled and non-disabled students, but must afford the disabled student equal opportunity to obtain the same results.

Sometimes postsecondary instructors may not be familiar with Section 504 or ADA requirements regarding the use of an auxiliary or personal aid in their classrooms. College professors may believe that transcribing lectures is an infringement upon their own or other student's academic freedom or constitutes copyright violation. In order to allow a student with hearing loss the use of CART or another effective aid and, at the same time, protect the instructor, the institution may require the student to sign an agreement so as not to infringe on a potential copyright or to limit free speech.

### **Conclusion**

Students with hearing loss who have access to assistive technology such as CART are provided with the same opportunities to learn and grow as hearing students. This growing technology allows the student to take an active role in the classroom and meet his or her potential as a scholar. Technology that provides communication access to students in either secondary or postsecondary school is based on the students' individual needs as well as the different environments and learning style that the schools require. It is most important to match the communication needs of the student with the changing requirements when moving from a secondary to postsecondary education. CART is a viable and beneficial method of meeting those needs.

## References

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