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# C-Print™: A Computerized Speech-to-Print Transcription System

## A Guide For Implementing C-Print™

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## Welcome to C-Print

***This manual is intended for use both by those who are quite knowledgeable about the C-Print system and are ready to implement it within their organization and those who are still exploring the possible use of C-Print. The following introductory section discusses how C-Print was developed and how it may be used.***

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*More and more hard-of-hearing students are in classes with hearing students.*

In the past 20 years, the number of deaf and hard-of-hearing students being educated in classes with hearing students has increased significantly at both secondary and post-secondary levels. A major concern for these students is classroom communication. Teachers, researchers, and others working with deaf students in mainstream classes have noted that students are hampered by communication difficulties, even when an interpreter and other support services are provided. Deaf students frequently need two basic types of support services within a mainstream setting (a mainstream setting is when one or more deaf students are in a class with a large number of hearing students, usually with a non-signing instructor). First, the deaf students need to know what the instructor and other students are saying so that they can participate in the class, and second, they need to be able to examine later the material presented by the teacher in order to regularly review what occurred in class and to study for tests and quizzes. The first need is often met by an interpreter and the second by a notetaker.

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*C-Print is not for all students.*

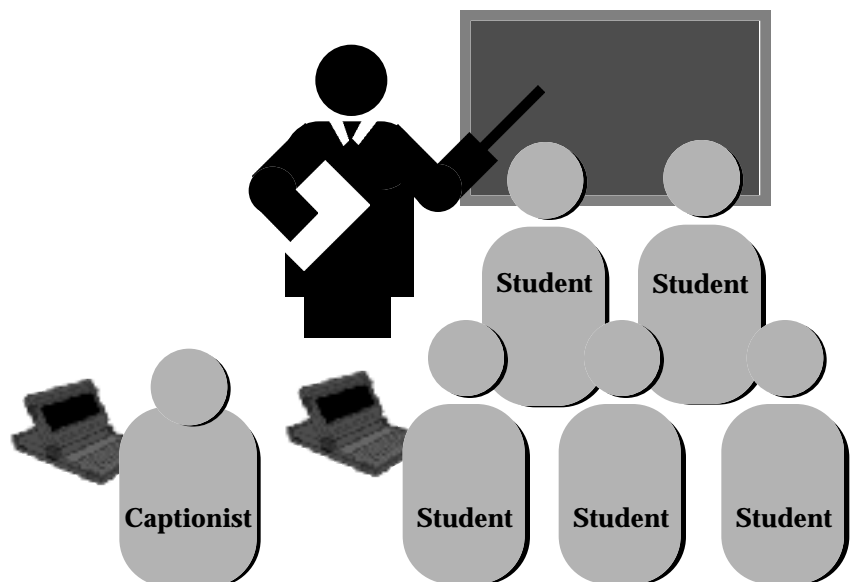
The C-Print speech-to-print system has been developed as a support service that is an alternative to interpreters and notetakers. C-Print may be used as a “stand alone” support service in which it replaces both an interpreter and a notetaker. C-Print may also be used along with an interpreter as a better adjunct than traditional notetaking. Remember, each classroom situation must be individually reviewed.

The C-Print system involves a hearing captionist (transcriber) typing the words of the teacher and other students as they are being spoken. With this system the captionist provides a real-time text display that the deaf and hard-of-hearing student can read on a second laptop computer or a TV monitor to understand what is happening in the classroom. In addition, the text file is stored in the computer and can be edited, printed, and distributed to students, tutors, and instructors after class. Figure 1 provides a diagram of the C-Print system as set up in a class.

Figure 1

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*Figure 1 shows a C-Print captionist and a student, each with laptops.*





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If a student wants to participate in class, but does not wish to speak for him or herself, C-Print provides an alternative means of communication. The system permits two-way communication between the captionist and the student. Students who do not want to voice for themselves can type a message on their own keyboard that instantaneously appears on the captionist's monitor to be read aloud to the class. Experience with this approach indicates that it is most effective when the student types at a reasonable speed. Some students, however, may prefer to have an interpreter voice for them.

A transcript produced using the C-Print system includes as much of the teacher's and students' discourse as possible rather than a word-for-word transcription. The C-Print captionist usually transcribes at a rate that is slower than the speed of speech normally used by instructors (approximately 150 words per minute). Therefore, C-Print uses two means to achieve the goal of including as much of the relevant information as possible: a computerized abbreviation system to reduce keystrokes, and text condensing strategies. Procedures have been developed for training captionists to use the phonetically-based abbreviation system. To deal with rapidly spoken lectures, the project developed text "condensing" or reduction strategies. The goal of these strategies is to reduce the number of words and abbreviations typed, while preserving meaning and keeping the message displayed as near the original message as possible. The following example shows how the C-Print text is a condensed version of the original lecture material:

**Original lecture:** We are talking about those personal factors. We are talking about my perception of roles in the family, and family roles were discussed in chapter 5.

**C-Print text:** *We are talking about those personal factors such as my perception of roles in the family discussed in chapter 5.*

The C-Print system may be contrasted to other forms of computer assisted notetaking and to stenosystems. C-Print is a form of speech-to-text system that employs a standard keyboard. Systems that use standard keyboards are often called computer assisted notetaking. Some persons who perform computer assisted notetaking generally type summary notes. In contrast, C-Print captionists type text that is a more complete representation of what was said. Another speech-to-text system is the stenosystem, or CART (computer-assisted realtime transcription), in which a trained stenographer using a stenotype machine keys in a special code which is then converted into English by computer. You may have seen a stenographic real-time display system in use in the captions on television or at a convention. These systems allow the stenographers to key in words very rapidly and keep up, word-for-word, with even very fast speech. Training for stenographers generally requires at least two years and the equipment and software are relatively expensive. The National Technical Institute for the Deaf (NTID) began exploring alternatives to a stenographic system several years ago, and the C-Print system is a good compromise between a word-for-word transcription system and computerized notetaking.

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*C-Print captionists use both abbreviation rules that reduce keystrokes and condensing strategies to capture all the important points in a lecture.*

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*C-Print is a good compromise between a word-for-word transcription system and computer assisted notetaking.*



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The C-Print software that is used in conjunction with the abbreviation system contains a dictionary of abbreviations. As the captionist types an abbreviation, the software searches the dictionary, finds the associated expansion (the completely spelled out word) and displays it almost instantly on the screen (both the captionist's laptop screen and the students' TV monitor or laptop screen).

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*Skill and commitment are required of the C-Print captionists and the person overseeing the C-Print service.*

Studying this manual and having a prospective C-Print captionist complete training are important first steps. By themselves, however, they are not adequate for ensuring that a program will provide a quality C-Print service. It is critical for the organization to hire a person who has the level of skill and commitment needed to be able to provide a high quality service as a captionist upon completion of training. The person responsible for overseeing C-Print services also needs to take care to identify students who are appropriate and who can truly benefit from the service. It is also important to ensure that the captionist is a member of the educational team working with the student using C-Print, and that all members of the team support the student in a manner that promotes effective learning and integration into classes.

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*This manual is a compilation of what has been learned over several years of working with C-Print.*

This manual contains a mixture of recommendations, ideas, pointers, and "lessons learned". In general, it is intended for the person within an organization who is responsible for implementing and coordinating the C-Print system. Some of the information may also be applicable to support personnel implementing any of a variety of speech-to-print systems.

For additional information, please contact the C-Print Coordinator (see page 38 of this manual) or another member of the C-Print staff.



## II. Equipment and Other Financial Considerations

**Cost is obviously of major interest to the school systems or organizations providing C-Print as an access service for students. The following section summarizes the costs of offering this service.**

Cost of using the C-Print system will vary, depending upon (a) what equipment is used, (b) the pay level and hours the captionist works, (c) the work demands for the captionist, (d) the service arrangements, and (e) funding opportunities.

### Equipment

1. *Laptop computer.* An IBM compatible laptop computer is the basic piece of equipment. It should be sturdy since it will frequently be moved around, and it needs to have a comfortable keyboard. It may also be used for other purposes. Cost: \$1,500 and up.
2. *Display equipment.* The real-time text on the captionist's laptop is usually displayed on a second laptop computer. It is also possible to connect the laptop to a regular TV monitor with a VGA-to-TV adapter. Sometimes students may purchase their own laptop computer for various uses, including provision of a real-time display of text. Cost: (a) up to \$50 if only connection cable is needed, and student provides laptop; (b) approximately \$200 for VGA adaptor; (c) \$1,500 and up for second laptop.
3. *C-Print software.* This software, developed by NTID/RIT, provides capabilities for (a) abbreviation expansion, (b) producing a real-time text display, (c) producing a text file that can be read and retrieved in a variety of word-processing applications, (d) communication between two laptops through a serial cable connection or TCP/IP server connection. Cost: Under \$100.

It is recommended that the computer have word processing software. Although the C-Print System does have limited word processing capabilities, editing notes will require more complicated features (i.e., bolding or italicizing selected text, adding page numbers, etc.).

4. Other limited costs to consider would be a carrying case for the equipment and hardware to link two laptops (i.e., a serial cable or wireless area network cards).
5. *Total cost.* The range for the total cost of equipment is between \$3,000 and \$6,000. The one-time cost for the equipment can be distributed over the years that the program uses the system. There may be occasional repair costs.

### Comments:

- a. The above are current equipment requirements, but they are constantly being updated. Be sure you check with the C-Print Office before ordering equipment.
- b. It is strongly recommended for programs using the C-Print system to have program staff who can provide technical support.

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An IBM compatible laptop computer is the basic piece of equipment.

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Equipment costs range between \$3,000 and \$6,000.



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*Captionists must be adequately compensated.*

### **Salary**

The salary expense is for the C-Print captionist. Adequate compensation is crucial in encouraging people to make a commitment to a career as a C-Print captionist. Both professional advancement opportunities and monetary increases should be considered. Currently, the pay rate for captionists is comparable to that of an entry-level interpreter or administrative/executive assistant. The range is more than paid staff notetakers who provide handwritten notes, and less than interpreters, but usually closer to the latter. There is not a standard specified salary for C-Print captionists; the program that employs the individual captionist determines the salary. Also, pay may be increased after a captionist completes training.

As an example of a possible yearly salary, consider a hypothetical captionist who works 20 hours per week for 10 months at \$14.50 per hour. This captionist's yearly salary would be approximately \$12,760, plus benefits.

It may be less expensive, as well as more convenient, to have an individual who is a member of the program staff provide the C-Print service in addition to other duties than to have an outside person provide the C-Print service. For example, the staff member might work part-time providing administrative assistance to the program and part-time providing the C-Print service. However, it is important to remember that an internal captionist candidate will need release time to train.

### **Work Demands**

An additional consideration is that captionists need time to prepare for class and edit the C-Print notes. This time needs to be paid for. The amount of time will vary depending on the situation. For the intense presentation of information at the college level, captionists need time for preparation and editing. At the high school level there is more frequently time when the captionist is not typing, such as when students are working on writing assignments in class. Therefore, it may be possible for the captionist to do some of this preparation and editing work during nontyping times. Depending on the circumstances, high-school captionists may also need editing time outside of class. In addition, note that other support services, such as interpreting and stenosystems, often require payment for time when the provider is not engaged in conveying the classroom information.

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*Time is needed to edit notes and prepare for class.*

### **Service Arrangements (Only Service vs. Multiple Services)**

The C-Print service is obviously more expensive when it is combined with other services such as interpreting, than when it is the only service; that is, used "stand-alone". When supporting an individual student, it may be difficult to justify provision of both C-Print and interpreting services. When the services support a number of deaf students in a class and some of these students receive educational benefit beyond that provided by a single service, the cost of combining C-Print and interpreting services may be justified. For example, consider a hypothetical regional high school program that is attached to a large local high school with classes into which the deaf students are frequently mainstreamed. The program mainstreams five deaf students into a junior level history class. Three of the five students have limited sign reception skills, but are good at reading English text. These three understand the class substantially better with the real-time C-Print text display. The other two students, however, also need an interpreter to function successfully in class. For the tests, much of the material comes from teacher's lectures. All five students find the C-Print notes helpful in performing on tests.

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*C-Print may be used as a stand alone service or in conjunction with other support services.*



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### **Funding Opportunities**

Funding for C-Print may come from a variety of sources in addition to the program's internal funds:

1. In public schools (K-12), funding for Individualized Educational Plans (IEPs) - the United States Department of Justice has explicitly stated that funding for IEPs may include technology such as C-Print.
2. At the college level, funding for compliance with the Americans with Disabilities Act and Section 504 of the Federal Rehabilitation Act may include C-Print.
3. Low incidence funding for public school students may include C-Print. Some states, such as California, provide additional funding for technological assistance for students with low-incidence conditions, including those who are deaf.
4. Funding for services to adult deaf staff may be used to partially fund a captionist position. In California this is called Adult Services, 504 funding.





### III. Environments and Students for Whom C-Print is Appropriate

***As is true of any support service, C-Print is not a panacea for all deaf students. This section reviews the types of students who have found C-Print a useful method of accessing information in the mainstream classroom.***

#### **Who is Appropriate?**

There is no one profile that perfectly defines the student for whom C-print will be appropriate. Outlined here are general guidelines (criteria) to help make the decision as to whether a student is potentially a good candidate for the service. Note that C-Print is not appropriate for every deaf student. For example, many students who rely on interpreted presentations of classroom lessons may find this service less beneficial or may benefit from both services.

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*No one profile perfectly defines the student for whom C-Print is appropriate.*

- Students who have a significant enough hearing loss that makes it difficult to follow classroom lessons.
- Students whose reading level allows for reading the text of the lesson. (At least a 4th grade reading level is a general rule of thumb.)
- Students who typically speak for themselves, not relying on an interpreter to voice for them or have good keyboarding skills. (Students who have good typing skills may use the captionist to voice for them by typing their response or comment on the laptop.)
- Students who know little or no sign language.
- Students who have the maturity to work with laptop computers and are able to make use of the notes.
- For students who are deaf or hard of hearing and who also have a visual impairment, the font size may be enlarged.
- Some students may choose C-Print for some classes, such as those that are primarily lecture and an interpreter for other classes that are primarily discussion.



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### **Environments: Where is C-Print Appropriate?**

Although C-Print seems more useful for situations where communication is primarily flowing from the teacher to the students, it is useful in a variety of other classroom situations such as:

- Classroom lectures.
- Classroom discussions—the captionist will indicate whether a student or the teacher is talking.
- C-Print may be more beneficial in some classes than others—for example, it may not be as useful in a math class as in a history class. Students do, however, sometimes request C-Print for math-oriented technical classes.
- Small group work requires that the proximity of the captionist be such to allow her/him to hear the group’s discussion.
- Assemblies—the real time may be displayed on a laptop, television screen, or panel display for small groups of students.
- Extracurricular meetings.

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*Classroom lectures is only one of many situations where C-Print may be appropriate.*

### **Special Populations**

Although the focus of work to date has been with deaf and hard-of-hearing students, students with other needs may also benefit from C-Print services. This may require modifications of font size and/or notes which are simplified and organized to meet the needs of the individual student.

- Experiences with a number of programs using C-Print have shown that the system benefits students with learning disabilities, attention deficit disorder, dysgraphia (fine motor difficulty), visual impairments, and students for whom English is a second language.
- At NTID, C-Print services have regularly provided a hard-copy printout of the C-Print notes to students who are learning disabled and who are in classes with deaf or hard-of-hearing students.
- For some high school students, the captionist may use more summarization in the C-Print real-time text than with college students. For many high school students, however, the captionist is likely to transcribe in a near verbatim manner similar to what he or she would do for most college students. Thus, at the high school level the C-Print text is more likely to vary in the extent it is summarized compared to the text provided to college students.
- It is hoped that more research and experience will address the use of C-Print with other populations.

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*Students with other needs have been found to benefit from C-Print.*



## IV. Introducing the C-Print System to Prospective Users

***Providing appropriate and timely information to those who must fund and support the system is crucial to a successful experience. The following are suggestions for meeting with various groups and the type of information or training the groups should receive.***

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*Certain information is needed before the decision to use or not use C-Print is made.*

Before a school district or college can decide to begin using the C-Print system, key administrators will want to have certain information. Points to cover to help the administrators decide are listed in section A.

Once the decision has been made to use C-Print, additional information will be needed by a wider range of people, such as program supervisors, teachers, students, other support service personnel, and parents. Points to cover at this next stage are listed in section B.

Once the system is up and running, it will be necessary to do several things on an on-going basis, to facilitate the smooth running of the C-Print system. These points are listed in section C.

### **A. Should we use the C-Print system?**

The first step in helping a school district or college decide if they should use C-Print is to introduce the C-Print system to key administrators. The ultimate success of the C-Print service depends greatly on the support given by the administrators who choose to have it in their schools. It is important that this group of people see clearly the benefits, as well as the shortcomings, of the service.

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*A demonstration of C-Print is useful during the initial discussions.*

At the college level, the administrators addressed might include the Dean or a representative, the support service coordinator, interested department heads, etc. In high school settings, it may be desirable to include people at the district level as well as the school level. District level might include the special education administrator, the deaf/hard-of-hearing administrator, a representative from any special education committees, the pupil personnel services coordinator, etc. School level personnel would include the principal, support service coordinator, deaf/hard-of-hearing program coordinator, itinerant teacher liaison, appropriate mainstream classroom teachers, etc. Parents might also be included at this time.

Here are points to cover in an introduction and description of the C-Print system:

1. Give a brief description of what C-Print is. Emphasize there are two components: real-time and hardcopy notes.
2. If possible, have a trained C-Print captionist demonstrate the system. Let each person see how the abbreviations expand into complete words.
3. Show a videotape of C-Print in use in a real classroom situation. Both the large monitor and the laptop methods of presentation should be shown. Draw attention to the physical setup, the sound of the keyboard, the expansions on screen and the slight delay of the expansions appearing.
4. Give some information on the effectiveness of C-Print and reactions of students and staff already using it. Include comments about where C-Print is currently used. (Use the various appropriate sections of this manual as background information.)

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*Carefully consider the information that should be provided when introducing C-Print to administrators.*



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5. Distribute and discuss a set of handouts that includes a written description of what C-Print is, a few examples of abbreviations, a sample of edited notes, a captionist's job description, student characteristics and class characteristics that work well with C-Print, and those characteristics that do not work well with C-Print. (See sections III & VIII of this manual for information on each of these topics.)
  6. Discuss the cost of the service, using section II of this manual as a guide. Describe a captionist's specialized training and recommended pay scale (between interpreter and notetaker). Explain that there are two levels of training to reach classroom competency. The first is the training itself, and the second is an internship while skills are honed. Explain that the recommended pay level increases as each new level is reached.
  7. Describe the time limitations of the captionist's typing due to the need to avoid repetitive motion injury (back-to-back classes should be avoided, etc.— see section VI for more details). Explain that out-of-class time is needed for editing notes (e.g., one hour class = one hour editing & preparing).
  8. Mention that C-Print could be useful in out-of-class situations and faculty meetings, as well as with students with other disabilities.
  9. Discuss how C-Print has been identified as an option on IEPs; explain that a speech-to-print system such as C-Print may be a required support service option for consumers at the college level, and it has been determined to be a legitimate support service under the guidelines of the Americans with Disabilities Act (ADA) and the Rehabilitation Act.
  10. Make it clear that C-Print cannot replace interpreters and notetakers for many students. Explain that in some classes with many deaf students, it may be necessary to have both an interpreter and a captionist in order to meet each students' needs.

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*Cost is always of major interest for administrators.*

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*Make it clear that C-Print cannot replace interpreters for all students.*

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*Once the decision has been made to use C-Print, it is important to meet with school staff who will be involved in implementation.*

#### **B. Now that we have C-Print, how do we use it?**

Once the decision has been made to use C-Print in a college, school or district, meet with the school staff who will be involved in the implementation, as well as potential supported students and, at the high school level, with their parents. The school staff should include the deaf/hard-of-hearing program coordinator, the support service coordinator, appropriate itinerant teachers, involved mainstream teachers, and support service personnel.

You will want to show and tell them most of what you told the administrators, as suggested in Section A above. Omit the information about costs. In addition, give the following information:

1. Describe the high-pressure nature of the captionist's job in class, and discuss the need for a supportive environment (e.g., helpful for teacher to supply vocabulary ahead of time, need for captionist to sit close enough to hear teacher easily).
2. Discuss necessity of defining procedures for days a captionist is out sick. If no notetaker is available, the supported student(s) could borrow and copy notes from a hearing student.



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*Roles of all staff and students need to be discussed.*

3. Explain that each school/program will need to decide about the procedures they want to follow for certain points, such as setting up a distribution system for the hardcopy notes, deciding what student behavior could result in the loss of the C-Print service, what to do if student is absent, deciding if notes should be distributed to hearing students, etc.
4. Discuss these cost-related issues:
  - a. cost of paper for printing notes
  - b. providing time for meetings between the captionist and mainstreamed teacher to orient captionist to class content, teacher's preferences, class expectations, etc.
  - c. necessity of having a PC-compatible printer and a copier available to the captionist daily
5. Discuss logistics of captioning in the classroom, e.g., where captionist sits. See section IX for details.
6. Suggest that the captionist and students meet at the start of each semester to talk about student preferences or special needs, e.g., how each student wants to ask questions in class.
7. Discuss the need for training the students to use the C-Print service and the hardcopy notes. See section VIII for details. Determine who will do this training with the students.
8. Explain that it is the student's responsibility to verify the spelling of all vocabulary words in the notes.
9. With support service personnel, acknowledge the concern about C-Print as a replacement for other services, but explain C-Print has limitations. In many situations, interpreting and traditional notetaking will continue to have major roles.

### **C. Keeping the C-Print Service Running Smoothly**

Once the C-Print system is up and running, a few maintenance procedures will keep it running well. Listed below are several procedures that should be considered.

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*On-going training and monitoring is recommended.*

1. Some students may need to have ongoing training in using the real-time display and the hardcopy notes effectively. Identify someone, such as the itinerant teacher or support service coordinator, to take responsibility for dealing with student needs in this area.
2. Over the course of each school term, the captionist and mainstream teacher should have some contact to assure the notes are accurately representing the intended information, and the classroom logistics are working well. The person supervising the captionist should also be involved in this process in order to monitor the quality of the captionist's work.
3. As with any technology, the C-Print system will need occasional troubleshooting for technical problems and periodic maintenance. On a day-to-day basis, captionists are responsible to care for the equipment. However, a program that decides to use the C-Print service should have a technical person available to resolve the more complicated problems and to upgrade the system when necessary.



## V. Recruiting, Training, and Competency Requirements for C-Print Captionists

***C-Print captionists are the heart of the C-Print system. This section summarizes ideas about recruiting and training captionists.***

### **Recruiting Captionists**

Experience has shown that it is good to recruit captionists locally. For example, place advertisements for the position in local papers, including the small weekly papers aimed at specific communities and the free papers that are mostly advertisements and community announcements. The following is an example of an ad placed in a local weekly paper. A copy of a job description developed for the captionists at RIT is included in the appendix. A position can be advertised using different titles, such as typist, educational aide, or captionist, depending on the situation. Remember, the general public may not be familiar with the term “captionist.”

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*Often captionists may be recruited through local newspapers.*

Typist/Captionist: part-time opportunity, 18-25 hours per week, 10 months per year. Typing speed of 60+ wpm. Excellent English and listening skills required. Computer knowledge helpful.

Staff members already employed by the school system or college, such as paraprofessional notetakers, interpreters, or office workers may also be selected as C-Print captionists.

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*The physical demands of the position make part-time employment desirable.*

Because the physical demands required of C-Print captionists limit the number of hours a person can function in the classroom, most C-Print captionists are hired part time. Therefore, people with good typing and verbal skills who are also interested in part-time employment are desirable. The “ergonomics” associated with the work of being a captionist (appropriate seating, keyboard, and time limits) are discussed in another section.

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*A test package has been developed to help assess potential applicants.*

A package consisting of three short tests has been developed to help assess applicants, and it is recommended that the test package be used to help select any potential C-Print captionist. The tests consists of a standard typing test, an English language skills test, and a short phonetic test. The phonetic test is really a short test to determine if the applicant can “hear” how words are spoken regardless of how they are spelled. For example, knife is pronounced “nif,” write is pronounced “rit” and please is pronounced “plez.” Many applicants who do poorly on this test have a difficult time with the abbreviation rules. There are no minimum test scores needed to be a successful C-Print captionist. As with most things in life, a weakness in one area can be overcome by a strength in another. The test package includes some rough guidelines and suggestions for using the package (and other criteria) to “rank-order” the applicant pool. The tests are available from the C-Print Office at NTID.



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Captionists work with laptop computers and trainees are more likely to have a positive experience when they have some understanding of the technology and how to use it.

C-Print captionists are often “on display” – that is, what they type is seen immediately by the student or students, mistakes and all. A successful captionist must have enough self-confidence to accept that he or she will make mistakes, will sometimes be criticized by the students, and will sometimes be placed in awkward situations. A confident personality is probably as much of a requirement as typing skills. It is also important for captionists to be able to work without supervision, and demonstrate acceptable/expected professional behavior within a school setting (e.g., friendly but not too friendly with students, dealing with others on an educational team).

### **Materials and Training**

The current training materials consist of a manual comprised of individual lessons and approximately 40 audiotapes that accompany the lessons. The lessons consist of:

**A. Introduction and practice with C-Print abbreviation principles (phonetic abbreviation) and brief forms.**

*Brief forms are abbreviations that do not follow the abbreviation rules. Many are commonly used abbreviations such as those used for the names of states and countries.*

**B. Guidelines, strategies, and practice with condensing (summarizing) what is heard.**

**C. Practice with real-time recorded lectures.**

**D. Preparing C-Print notes.**

**E. Editing existing C-Print dictionaries and creating new dictionaries.**

Each of the lessons include audiotapes that enable the captionist to practice the particular rules or brief forms presented in that lesson. Some of the later lessons include actual classroom lectures to help the trainee become used to typing and condensing actual classroom material. Excerpts from two of the lessons can be found in the appendix.

Although the first part of the training materials can be used as independent study, it is important to note that the materials are not “stand alone.” They are designed to be used with a support person; someone who is knowledgeable about C-Print and has experience providing C-Print or classroom service. Also, training experiences have repeatedly shown that individuals training to be a captionist have to demonstrate a commitment to self-study and be motivated to work through difficulties they might encounter in learning the abbreviation system.

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*Extensive training materials have been developed for captionists.*

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*Samples from two lessons can be found in the appendix.*



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*It is important to remember that training must be followed by actual classroom experience before a captionist can become proficient.*

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The most common model of training that is currently being used has two parts: (a) independent study, followed by (b) a one-week workshop. The independent study is structured so that the trainee completes 40-50 hours of training with the abbreviation principles prior to attending the one-week workshop. It is most effective when the trainee completes these study hours in a concentrated period of time (two to four weeks). The second part of the training is the one-week workshop. During the workshop, captionist trainees review the abbreviation system, work on condensing strategies and notes preparation, and are given extensive information on topics including implementing the C-Print system, Deaf culture, related technology, logistics, ergonomics, and the Americans with Disabilities Act.

It is important to understand that once a captionist completes the workshop, s/he is not yet proficient in using the C-Print system. S/he will have acquired the appropriate tools, but needs practice and classroom experience to develop proficiency as a captionist.

### **Competency Requirements**

The C-Print project is developing competency requirements for captionists to help ensure that the services provided to deaf and hard-of-hearing students meet professional standards. Programs that are unfamiliar with speech-to-print services will be able to use these requirements as a basis for providing quality services.





## VI. Ergonomics

***Ergonomics refers to the relationship of the physical environment (seating, keyboard) and the physical act of captioning. Typing rapidly for long periods of time can cause problems if precautions are not heeded.***

Persons involved in providing the C-Print service, or similar services, need to have a basic awareness of the ergonomic risks involved. While the C-Print system will provide a number of opportunities to serve students, risking the health of captionists is not a sacrifice that needs to be made. By being aware of the potential risks, following the recommendations in this manual, and encouraging captionists to advise you of any symptoms they may have, you will be further ahead in ergonomic intervention.

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*It is important to emphasize the development of skills that lead to reducing keystrokes.*

The developers of the C-Print System recognize that personal computers have been associated with cumulative trauma disorders and may lead to disability. Moreover, the use of laptop computers poses risks both in the classroom activity and in the transport. Our goal is to reduce the risk of cumulative trauma disorders among C-Print captionists by educating administrators, captionists, and support service providers.

In an attempt to minimize ergonomic risk factors, we recommend that: (a) C-Print captionists continue to develop their skills with the abbreviation system to reduce keystrokes and with text condensing strategies, (b) C-Print captionists, where possible, choose seating that reduces discrepancies in table, elbow, and keyboard height, (c) regular interviews be conducted with captionists to monitor changes in comfort, fatigue, and effort. Additionally, we recommend that the position of captionist be part-time.

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*Periodic breaks are very important.*

Regarding our experience in working with many captionists (more than 50), only a few captionists have reported significant, repeated discomfort. We believe this low incidence of injury is because we have followed guidelines to minimize risk of injury. When captionists have reported temporary discomfort, we have asked them to follow these guidelines more carefully.

When hiring an individual for a captionist position, be clear from the beginning about the physical and cognitive demands involved in providing the C-Print service. Most people are aware of their own limitations and will not pursue a position that would put their physical health at risk. Also, when determining when and where a captionist will provide the service, remember to schedule periodic breaks.

---

*All staff members involved with C-Print need to be aware of the ergonomic implications.*

Captioning for more than one hour without a break increases the risk of injury substantially. College captionists are likely to engage in intense typing of continuous lectures for up to an hour and will generally need an hour of “down” time before resuming such typing. The extent that high school captionists are likely to engage in continuous typing is more variable. High school classes vary in regard to the pace of presentation, use of seatwork, reading aloud from textbooks, and amount of “down” time for the captionist. In some situations the captionist may be able to type for longer than one hour, but the hour limit still is relevant when the teacher engages in continuous lecturing.



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The University of Rochester Occupational Rehabilitation and Ergonomics Center recently performed an ergonomic analysis of the C-Print service. A key finding was that when captionists reduced keystrokes through the use of the abbreviation system or through summarizing information, they minimized physical discomfort and fatigue.

Basic awareness of ergonomic risks is essential, along with a proactive approach to managing these risks and early intervention if necessary.



## VII. Preparing C-Print Notes

***Paper (or electronic) copies of C-Print notes are an important study aid for many students. The amount of editing and condensing that should be done before the notes are distributed depends primarily on the needs of the students.***

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*Notes for high school students may need to be organized differently than notes for college students.*

When providing C-Print in real-time, a captionist should make every effort to type what s/he hears, and use condensing strategies when necessary to keep up. However, there are a number of issues to consider when preparing C-Print notes for distribution.

Clearly the educational level of the student(s) is a major consideration. At the college level, students are provided with a C-Print transcript of the lecture that has been edited for things such as misspellings and complete thoughts. At the high school level, the style of notes can vary depending on the capabilities of the student and what the best study tool for that particular student may be. The educational team can determine, with input from the student, which format for the notes is most beneficial – an outline format or a transcript format.

---

*It is important to consult the teacher or faculty member regarding information that should be omitted from the C-Print transcripts.*

The hardcopy notes are intended to be educational tools, not necessarily near-verbatim accounts of what happened in class. Therefore, information that is extraneous to the educational content, such as behavior control comments by the professor/teacher, can be omitted. Also, any confidential information about the students or others should be omitted. Captionists may want to discuss with the professor/teacher that they will be omitting this kind of information from the hardcopy notes. They should be sensitive to the wishes of the professor/teacher regarding other information which may be generally omitted from the hardcopy notes for a particular class. Also, captionists should be careful not to interject their own ideas or interpretations into the notes. Their job is to show what was actually said and done in class.

---

*Notes should provide the student with information about all the educational information presented in the class.*

A good approach for captionists to use when deciding what information to leave in and what to omit is to provide notes that would help a student who was absent know what educational information was presented. This approach will help captionists decide what to include, and what changes to make in the verbatim language used to make the class content understandable.

One final note: some programs have chosen to include a disclaimer in their notes to reinforce that the notes are not a verbatim transcript of the lecture. For example, “Please note, these notes are paraphrased by the C-Print captionist and provided as an accommodation only for the personal use of the student receiving C-Print services.”



## VIII. Roles and Expectations for Participants

**The following section discusses some of the roles and responsibilities that must be assumed by those who are most involved in the C-Print system, namely the students, the captionist, the classroom teacher, and the support staff. In some cases, we have identified different expectations when C-Print is offered in a postsecondary setting versus a high school setting. These are suggestions that will vary depending on internal program policies.**

### **The Role of Students**

The temptation for some students using C-Print in the classroom is to become passive learners, eyes never straying from the laptop in front of them. This is not the model that students should allow themselves to fall into. Students should actively engage themselves in the learning process in the classroom. This can best be accomplished by working with the captionist to make the best use of the system within the classroom environment. Students generally receive the greatest benefit from the real-time component (display) if they periodically look around the room in order to experience the emotional tone of the lecture/discussion occurring during class. Students should also feel confident to use the laptop to participate in class discussions or ask questions. This “active participation” will establish the greatest opportunity for learning while using the C-Print system in the classroom.

*Students will:*

- Introduce themselves to the captionist so s/he is familiar with each student who will be using C-Print.
- Whenever possible, the student should attempt to take notes and diagrams from the blackboard or overheads. (Board and overhead information is not normally captured in the C-Print notes.)
- Work with the support person to learn how to use the display in class. Students will then determine for themselves when they will look at the C-Print display, at the instructor, or at the interpreter (if one is provided). It is not necessary to watch the C-Print display at all times. Students should regularly look around the room to be aware of the emotional tone of the class, such as joking, excitement, etc.
- Inform the C-Print captionist if s/he is having difficulties with the text display or notes. In addition, students are encouraged to identify any suggestions or ideas they may have to adjust the use of C-Print to better meet their educational needs.
- Be responsible for double-checking the spelling of any vocabulary.
- Voice for themselves or type their comments/questions on the student laptop. The captionist will read aloud what has been typed.

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*It is important for all students to remain active participants in the class when using C-Print.*

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*All students need to accept responsibility for communicating with the C-Print captionist.*



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The following items tend to be more specialized to either the college or high school learning environment.

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*The responsibilities of college and high school students may differ slightly depending on the policies of the individual organizations.*

*Suggestions for college students...*

- Sign in on an attendance sheet provided by the C-Print captionist at the start of each class. C-Print notes will be distributed to only those students whose names appear on the attendance list.
- Be responsible for notifying the C-Print/Support Service Office if s/he will not be attending class or has withdrawn from the course. Multiple unannounced or unexcused absences may result in the termination of C-Print services. The number of absences constituting termination of the service will be determined by the individual C-Print/Support Service Office.
- Inform the captionist of any special needs (i.e. the need for an interpreter for classroom presentations).

*Suggestions for high school students...*

- Attend class. A student's right to receive notes when not in class will be addressed in the policy developed by each school.

### **The Role of the Captionist**

Captionists play a key role in providing communication access for students through the C-Print real-time display and by helping the student participate in class. For the service to be successful, the captionist must work with students, teachers, and other support service personnel as part of an educational team. Information received from this team will assist the captionist in adapting his/her work in response to the particular learning characteristics of the student and to the specific demands of each individual class.

*The C-Print captionist will:*

- Arrive at least 10 minutes before class to allow time for setting up the equipment.
- Provide an in-class text display for the identified support service student(s). The captionist may need to provide an attendance list for supported students to sign-in. C-Print notes (hardcopy) will be provided to supported students whose names appear on the attendance list and to the classroom professor/teacher.
- Make every effort to type as near to the original message as possible, and will communicate the information in the manner in which it is intended. At times, the captionist will need to summarize information, but s/he will type as much of the communicated information as possible.
- Assist students by voicing comments or questions typed on the laptop provided or assist communication in an alternative way that is mutually agreed upon.
- Indicate different speakers in the text by using identifiers such as professor, teacher, female student, and male student.

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*Captionists facilitate communication between the student and the teacher.*



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*Captionists should be viewed as part of the “educational team.”*

- Be responsible for facilitating communication between the supported students and others (i.e., discussions with professor/teacher or with other students in class). This may include asking for clarification from the professor/teacher or from other students as requested by the supported student, and/or by sitting in an area accessible and convenient for specific situations (e.g., group work in class).

*Suggestions for college captionists...*

---

*College captionists need to be provided with time and materials to become familiar with the course content.*

- Begin typing upon the arrival of the student(s). Any announcements made by the teacher before the student(s) arrive will be typed. It is recommended that after 15 minutes, if none of the supported student(s) are in attendance, the captionist will leave. Exceptions to this rule will occur with approval from the office responsible for provision of C-Print services or if the professor asks the captionist to stay.
- Become familiar with the scheduled lecture by preparing for class through reviewing the textbook and any related materials. This information should also be utilized for maintaining and updating the specialized dictionary for each class.
- Edit and distribute hard copy notes in the agreed upon manner. Include any handouts with the tutor's/faculty member's copy of the notes. Students are responsible for collecting their own set of handouts.
- Summarize videotapes (captioned or uncaptioned).
- Be responsible for trying to resolve any problems stemming from student or instructor concerns about C-Print. The captionist's role should be viewed as a part of an “educational team”, working with the teacher and supported students to ensure the success of the C-Print service in the classroom environment.
- Provide on-the-spot trouble shooting for equipment breakdown with minimum disruption to the class. If no solution is found, make every effort to accommodate the supported student(s) to the best of her/his ability (e.g., take handwritten notes if the computer is not working). Technical breakdowns are unforeseen and most often require a diagnosis and repair outside the classroom environment.
- Highlight certain critical information, such as dates of tests.

*Suggestions for high school captionists...*

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*High school captionists may need to reorganize C-Print notes before hard copies are distributed to students*

- Be available to give information to classroom teachers (along with the support person-teacher of the deaf/resource teacher).
- Explain the captionist's role to the students' peers in class; this may be in conjunction with teacher of the deaf, resource teacher, student, classroom teacher.
- In producing C-Print notes for students to use after class, the high school captionist is more likely to further summarize the C-Print text produced during class than the college captionist. Such summarization may include formatting (e.g., underlining), etc. to highlight important points. The extent that such summarization occurs is likely to vary considerably for individual high school students.



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### **College Faculty and High School Teachers**

The instructor's support of C-Print in the classroom is critical to the success of the service for students. Faculty who foster a supportive classroom environment and are willing to assist the C-Print captionist if needed, help provide the greatest degree of communication access for the students supported by C-Print. The following strategies can be utilized by professors/teachers and C-Print captionists, working as an educational team, to provide the most effective C-Print service in a mainstreamed classroom.

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*Faculty and teacher support is critical.*

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*College faculty and high school teachers should provide the captionist with needed materials.*

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*College and high school teachers should occasionally review the notes.*

---

*College support faculty reinforce the effectiveness of C-Print.*

- Introduce the captionist and the C-Print service at the beginning of the first class.
- Allow the captionist to explain briefly what C-Print is, and invite interested students to look at the screen after class.
- Provide the C-Print captionist with any available classroom lecture materials before the next class. Items such as syllabi, handouts, outlines, readings, overheads, and vocabulary lists are extremely useful for the captionist's class preparation. These materials are also used to expand the specialized dictionary in the C-Print software with abbreviations of often-used vocabulary specific to each class.
- Allow the captionist to sit in a location that makes hearing the teacher, and the other students, as easy as possible. Captionists will ask for clarification of any comments not clearly heard.
- Restate or summarize students' comments if they are hard to hear or are disorganized.
- Allow extra time for the C-Print captionist to relocate or modify his/her position during changes in classroom activities (i.e., breaking up into discussion groups).
- Be aware that the captionist will use "down times" in class to edit notes taken earlier. "Down times" include periods of silent reading or writing or pauses during class transitions.
- Take time to periodically review the hardcopy C-Print notes for accuracy. Any concerns or suggestions should be shared with the C-Print captionist.
- Discuss any questions or concerns about the C-Print service with the captionist. Any unresolved questions/problems can be taken to the supervisor or the office responsible for the provision of C-Print services.

### **Support Faculty and Teachers of the Deaf**

*College support faculty...*

Support faculty are another member of the "educational team", and their support of C-Print and use of the hardcopy notes reinforces the effectiveness of the service. Tutors and teachers of the deaf can utilize the following strategies when working with classroom teachers and students who have C-Print in the classroom.



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*Support faculty will help students learn how to study using C-Print notes.*

- Review the notes and identify the following important items:
  - a. student attendance (if services are only provided to those attending class)
  - b. special announcements (i.e. test dates, project assignments, project deadlines)
  - c. new and/or difficult concepts, technical information, and new vocabulary
  - d. the amount and flow of classroom discussion. This can help the tutor/teacher of the deaf gauge how much the supported student is participating in class and determine the level of comprehension the student has obtained through tutor-directed questions and answers.
  - e. cued information (i.e. “There are three main points here” etc.)
  - f. handouts or supplemental documents that are attached to the notes.
- Review the notes as a supplement to the text and other materials used in preparation for tutoring with supported students.
- Develop outlines of notes and/or restructure notes (or sections of the notes) with student(s) to use for studying. Development of outlining strategies is critical for successful management of the volume of information contained in the hard copy of the notes.
- As notes are reviewed together with the students(s), the tutor/teacher of the deaf can assist students in making connections between new information and information presented in an earlier class. New information can be added to the notes from the text to expand ideas or replace missing information.

*High school teachers of the deaf/resource room teachers will...*

- Train the student in how to use the notes to include highlighting, skimming for important information.
- Train the student in organization of the notes, how to take care of them daily, at the end of marking periods, etc.
- Develop outlines of notes and/or restructure notes (or sections of the notes) with student(s) to use for studying. Development of outlining strategies is critical for successful management of the volume of information contained in the hard copy of the notes.
- Provide feedback to the captionist as to format, etc.
- Facilitate providing the captionist feedback from the student.
- Be available to give information to the regular classroom teachers about C-Print (along with the captionist).

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*High school teachers of the deaf/resource room teachers will help students learn to use C-Print effectively.*





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*Teachers of the deaf will make sure the student is aware that s/he remains responsible for active learning.*

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*Support of administrators is crucial.*

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*Administrative input in the development of policies and procedures related to C-Print is important.*

- Tutors/teachers of the deaf, along with the captionist, should be responsible to try and resolve any questions or problems stemming from student or professor/teacher concerns about C-Print.
- Explain that the student is responsible for active learning and participation in class. Receiving the C-Print notes does not mean that the student does not have to pay attention in class. In order to be successful, the student needs to pay attention to the information provided by the C-Print display, teacher, and other students during class, and then actively review the C-Print notes after class.

### **Role of Administrators**

The ultimate success of the use of C-Print as an access service for students greatly depends on the support given by administrators who choose to have it in their schools. The service cannot succeed without a clearly written policy, developed by each individual school (high school or college), describing the rules and expectations surrounding the service and those who participate in it. This policy should be written before the service is put into place and should be shared with all participants involved with the service (students, teachers, support personnel, and captionists). At a minimum, the following items should be addressed:

- Are students required to attend class to receive the notes? If yes, what method of documentation will be used to prove that they were there? (ie. attendance sheets)
- Are guidelines in place for the continuation/termination of the service if the students abuse it? (i.e. cut class, purposely damage equipment, etc...)
- What is the timeline for distribution of the hardcopy notes?
- What expectations are there about sharing the notes with other “non-supported” students? Classroom teachers should be a part of this determination of policy.
- If the captionist is sick, is the deaf student responsible for asking a student to take notes?
- What is the availability of copier, printer, and paper at the school site?
- Who will supervise the captionists?
- Who will be the contact (supervisory) person at each site that faculty can ask questions or voice concerns to about the service?

## IX. Logistics

**As it is often said, “The devil is in the details.” Below are some helpful suggestions based on experiences at the secondary and postsecondary level.**

Once it has been determined that C-Print is the most appropriate service for a student or number of students, and the administrators at the college or high school have agreed to its implementation, the actual set up of the system needs to be discussed. For the classes in which C-Print will be used, several issues should be addressed (some of the issues may themselves determine whether C-Print can be incorporated into a class). In planning implementation of the C-Print service, administrators and educators need to consider logistics, such as where the C-Print captionist will sit.

- The captionist, student and class teacher should meet to discuss class structure (lecture, discussion, group work) and decide how it is best to incorporate C-Print.
- The captionist should contact the teacher to discuss class content and ask for any readings/texts that are available (which will be of assistance in creating a specialized dictionary). Also, the captionist should let the teacher know that receiving handouts and readings in advance will be helpful.
- Both the captionist and the student need to sit near an outlet as both laptops will need to be plugged in (many computer batteries will hold a charge for 1-2 hours, but even in short classes the computers may need to be plugged in as a precaution).
- When using a serial cable connection, the captionist should sit close enough to the student to accommodate the cord connecting the two laptops (between 12 and 20 feet). The cord should not block an aisle or be in the way of other students in the class.
- The captionist should be seated where s/he can hear the teacher and any other speakers in the room. It is helpful for a captionist to sit facing the class for the students' comments to be clearer.
- The captionist and the student should sit where there is no glare on the laptop screens. It is helpful if the student(s) has a desk large enough for the laptop and for the student's own notebook and/or texts.
- The captionist should have a desk at an appropriate height for comfortable typing.
- The captionist should sit where s/he does not disturb other students with the sound of typing on the keyboard.
- Through a C-Print demonstration the student should be made aware of the lag time between words being spoken and appearing on the screen. Also, the appropriate size and type of font should be decided upon between the captionist and student.

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*Logistics are closely tied to pre-service meetings.*

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*Appropriate seating and placement of the captionist within the classroom is very important.*

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*Breaks for captionists must be built into the schedule.*

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- The length and content of class or classes should be discussed to determine the best time for breaks for the captionist.
  - Notes from classroom lectures and discussions will be edited and printed out during the captionist's preparation time.
  - Captionists will need a place to print out student notes. A printer that is compatible with the laptop or a compatible computer will be necessary.
  - A system for distribution of notes will be arranged between the captionist, supervisor, and student(s). At the high school level the goal is to give students notes before they leave for the day. This means the captionist will have to print the notes sometime during the day and get them to the student or leave them in a designated place for the student to pick up. There are other possibilities for distributing notes, besides in a hardcopy form, that captionists and students may arrange. For example, the captionist may hand the student a computer disc with the day's lectures and discussions saved, or the captionist may send the notes to a student through electronic mail.
  - Notes will be made available to classroom teachers, resource and itinerant teachers, and tutors. The captionist will place a hard copy of the notes in a mailbox, folder, or classroom of any involved personnel who will be receiving copies. Other students in the class not receiving C-Print can receive notes only at the teacher's discretion.
  - If the assigned student is absent from class, there should be an agreed upon procedure as to how the student will receive notes (this should be decided before C-Print begins, by the captionist, student, and teachers).
  - Procedures for a captionist's absence should be made clear to student and teachers involved. If there is not another captionist to substitute, an interpreter and/or notetaker may be the best option to cover the class.

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*The time and method of distributing C-Print notes must be clear.*

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*What happens when a captionist is absent must be made clear to students and teachers.*



## Appendices

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# Appendix A

## Excerpt from Captionist Training Manual – Lesson 1

In this lesson you will be introduced to the first two principles of the C-Print abbreviation system and some brief forms. The goal of the abbreviation system is to reduce the number of keystrokes, thus, abbreviating very short words does not make sense (with a few exceptions). The first of the C-Print abbreviation principles is:

**Principle 1. Abbreviate only words of five or more letters. Completely type words of four letters or less.**

**Practice Principle 1 by underlining the words with *five or more* letters in the following sentences:**

1. You can finish the letter to your brother after midnight.
2. It is hard to imagine that it will be snowing next month.
3. The new magazine fell out of the car onto the grass.
4. The political debate was interesting but too long.
5. Do you want to go out to dinner or eat in?
6. The teacher explained to John that he could write a poem about anything he liked.

In this and all the following lessons, work to develop the skill to quickly decide if a word has five or more letters. If it does not, type the whole word. There are a few exceptions to this rule including “brief forms,” which are words that have been given special abbreviations. Concentrate on developing the skills to type all of the short words (i.e., four or less letters), and to abbreviate words of five or more letters.

**Again, practice Principle 1 by underlining the words in the sentences below with *five or more* letters.**

1. Our neighbor will train for the final race.
2. We will break the second rule.
3. His niece is a bright guide.

**The C-Print abbreviations are shown below for each word with five or more letters.**

1. Our nabr will tran for the finl race.
2. We will brak the sknd rule.
3. His nes is a brit gid.

**Using C-Print on your laptop computer, type the sentences above just as they appear (without the underlining).** The abbreviations will automatically expand when you hit the space bar or period after each abbreviation. You don’t know (yet) why each word is abbreviated as it is, but you will see the words expand on the screen.

As you begin learning the rules for deciding what abbreviation to type when you hear a word, remember that the rules are generally based on how a word SOUNDS, NOT how it is SPELLED. Concentrate on hearing the sounds of a word rather than thinking of how it is spelled. Several times in the next few lessons, the text will refer to SOUNDS and LETTERS. Sounds are what you hear and letters are what is written. This difference will be important to keep straight as you learn the abbreviation system.

## Excerpt from Captionist Training Manual – Lesson 10

### Condensing Information

When speech is occurring at a fast rate, it is not possible to type everything that is said. Therefore, the C-Print captionist has to listen and evaluate the spoken information. The captionist must decide what is important and relevant, and delete irrelevant, unnecessary, and redundant information. At the same time, the captionist must type enough of the material so that the deaf or hard-of-hearing consumer has a detailed understanding of what was said. The captionist has to be an active listener; to mentally summarize previous points and to predict the lecture content and organization. This “active” listening facilitates the C-Print captionist’s attempt to capture the important information in a clear and coherent manner, using fewer words than are present in the original lecture.

This portion of your training has two main parts: developing and improving “active” listening skills and using strategies to condense information. The topics to be discussed are some techniques for: active listening, reducing the number of words that need to be typed, organizing information in a coherent and clear manner, capturing important information, eliminating redundant information, and summarizing.

#### Active Listening

“Active” listening involves concentrating on the meaning the speaker is trying to express. For a captionist to identify the important points in a lecture and understand how text should be written and organized, “active” listening is a must.

This next section describes techniques primarily for listening. While listening, the captionist needs to make quick decisions and identify as much of the relevant information as possible and then type it. This section deals with identifying this relevant or important information. Below are some techniques to help develop “active” listening skills.

#### 1. Listen for cues to identify important points and relevant information.

##### Examples of cues:

“Now this is important...”

“Remember that...”

“The important idea is that...”

“The basic concept here is...”

“You’ll need to remember this.”

“You’ll need to understand this before you can comprehend that.”

“This will be on the test.”

Voice inflection - Tone often tells you if the words form a question or a statement, if the speaker is using sarcasm or humor, etc.

Voice loudness - When speakers are emphasizing a point, they may speak louder or raise the pitch of their voice.

**Note:** It is important to use the cues to identify information that should be included in the C-Print text.

## Appendix B

### Job Description: Part-Time Staff C-Print™ Captionist (sample)

The part-time staff C-Print captionist's primary responsibility is the provision of direct real-time transcription in the classroom and the rapid provision of the hard copy text to students. The captionist reports to the C-Print coordinator.

#### Specific Responsibilities

##### A. Provide direct service

1. Provide real-time transcription in classroom (9 hours weekly).
2. Edit transcripts; maintain dictionaries; prepare for class by reviewing notes and syllabi, previewing texts; meeting with presenters, faculty, tutor, or students; and prepare equipment (8 hours weekly).
3. Use consumer feedback, assess effectiveness of interpretation, and adjust interpretation accordingly.
4. Assist with culture-specific information and adapt communication to facilitate understanding between hearing and deaf individuals.

##### B. Communicate with others in support of team goals and the provision of services.

1. Develop rapport with consumers and facilitate resolution of support service concerns.
2. Provide information to faculty, staff, and students regarding the real-time speech-to-print service, communication between deaf and hearing people, and support service resources.
3. Represent daily the mission of NTID to members of the RIT community through work in the mainstream setting.
4. Attend staff meetings, document service provided weekly, and network with other staff members to maintain the flow of information critical to quality service.

##### C. Demonstrate professional growth. Areas of growth can include:

- upgrading or maintenance of transcription skills
- development of sign language skills
- enhancement of interpersonal communication skills.

##### D. Participate in projects, including committee work and mentoring, as deemed appropriate by C-Print coordinator.

#### Requirements

- typing speed of 60 words per minute or higher
- knowledge/abilities in phonetics
- excellent English and listening skills
- ability to understand and summarize information while typing
- ability to handle pressure of using transcription system in classroom setting
- computer and word processing knowledge
- sign language communication skills preferred or willingness to learn

## Appendix C

### Information for Deaf Students Using C-Print™ Services (sample for a high school)

1. Each supported student should introduce himself/herself to the captionist and ask by what name the captionist wants to be called (e.g., Mr. Doe, Ms. Doe, John, Jane).
2. The student is responsible for copying notes and diagrams from the blackboard or overheads as these cannot be captured well by the captionist.
3. During class, the student may look at the C-Print student display, at the instructor, or at the interpreter. It is not necessary to watch the C-Print display at all times. Some students prefer to watch the screen often, while others prefer to look at it only to get information they have missed or have not understood at first.
4. Students should regularly look around the room to be aware of the emotional tone of the class, such as joking, excitement, etc.
5. There is a short delay between the instructor's speech and the display of the words on the C-Print student display. This delay is similar to that experienced when watching an interpreter.
6. The C-Print laptop text and the hardcopy notes represent very closely what was said in class. However, they are not always verbatim (i.e., word-for-word). In order to keep up with the rate of speech of those talking, the captionists will sometimes condense or omit information. Every effort is made to keep all important content.
7. Each student should raise his/her hand when interested in commenting or asking questions in class. C-Print-supported students voice for themselves or type their comments/questions on the student C-Print laptop if it is accessible. The captionist will read aloud what has been typed. (During the research project, students may choose to communicate through the interpreter instead.)
8. If a student is having a problem with the text display or with the notes, it is his/her responsibility to discuss the problem with the captionist and/or the program supervisor. Also the student should feel free to suggest ways to adjust the use of C-Print to better meet his/her educational needs.
9. It is each student's responsibility to double-check the spelling of vocabulary words in C-Print notes.
10. C-Print notes are not a substitute for attending class or paying attention during class. Students who miss class or are consistently inattentive during class may lose their access to the C-Print notes. The decision to end this access will be made by the classroom teacher and the program supervisor.
11. Periodically, the classroom teacher and/or the program supervisor will confer with the interpreter in order to advise students of how best to utilize the C-Print support.
12. Each school and/or each teacher will decide if the hardcopy C-Print notes should be made available to non-supported students within a class. Supported students who distribute the notes contrary to the school's policy will lose their access to C-Print notes.

**I understand the above information regarding student responsibility for C-Print supported services.**

Name \_\_\_\_\_

Date \_\_\_\_\_



## Appendix D

### C-Print™ Support Service Policy (sample for a college)

#### General Information

- For courses where C-Print is the only assigned support service, interpreting and notetaking services will *not* be provided. If a student wants permanent interpreting or notetaking services, the student will need to transfer to an NTID-supported section of the course or take a different course.
- C-Print notes are intended to be used by supported student(s) registered in the course and should not be copied unless otherwise specified by the professor.
- C-Print notes are *not* a substitute for attending class.
- C-Print notes are not guaranteed to have 100% correct grammar or spelling because the notes need to be edited and distributed as quickly as possible.

#### Captionist Responsibilities

The C-Print captionist(s) will:

- provide an in-class text display for appropriate support service students. In addition, notes (generated from the text display) will be made available *to supported students who attended class*.
- make every effort to type spoken information word-for-word, and will communicate the information in the manner in which it is intended. At times (during fast speech), the captionist will need to summarize information, but s/he will type as much of the important information as possible.
- assist by voicing comments or questions typed by student(s) on the laptop provided, *or* in a way mutually agreed upon.
- begin typing upon the arrival of the student(s). Any announcements made by the teacher before the student(s) arrive will be typed. After 10 minutes, if none of the supported student(s) are in attendance, the captionist will leave. However, if the student has notified the C-Print Office or the professor at least 24 hours in advance, the captionist will take notes if approved by the professor.
- indicate different speakers in the text by using “professor”, “female student”, and “male student”.
- be responsible for facilitating communication between the supported student(s) and others (i.e., the professor and other students). This includes asking for clarification from the professor or other students when necessary and sitting in an area accessible and convenient to the student(s).
- be responsible for trying to resolve any problems stemming from student or professor concerns about C-Print.
- arrive at least 10 minutes before class to allow time for equipment setup.
- be familiar with the scheduled lecture by preparing for class through reviewing the textbook and related materials.
- find a replacement if s/he is sick. If a replacement cannot be found, the captionist will notify the appropriate Support Department who will notify the supported student(s).

- provide on-the-spot trouble shooting for equipment breakdown with minimum disruption to the class. If no solution is found, the captionist will make every effort to accommodate the supported student(s) to the best of her/his ability (e.g., take handwritten notes). Technical breakdowns are unforeseen and most often require a diagnosis outside the classroom environment.
- remind the student(s) to request an interpreter for special circumstances during class time, such as an oral presentation by the supported student(s).
- provide class handouts to individuals who receive notes but were not in class (e.g., the tutor).
- summarize videotapes (captioned or uncaptioned).

### **Supported Student(s) Responsibilities**

The student(s) will:

- introduce themselves to the captionist so s/he is familiar with each student.
- be responsible for taking notes and diagrams from the blackboard or overheads.
- be responsible for notifying the C-Print Office if s/he will not be attending class or has dropped (withdrawn) from the course. Three consecutive unexcused absences will result in the termination of C-Print services.
- inform the C-Print captionist if s/he is having difficulties with the text display or notes. In addition, it will be helpful if the student(s) identifies any suggestions s/he has for improving the use of C-Print for her/his needs.
- be responsible for double-checking spelling on any vocabulary.
- raise her/his hand when interested in communicating comments or questions through typing on the laptop provided.
- make arrangements for any special circumstances, such as requesting an interpreter for oral presentations, at least two weeks in advance.

**If you have any questions concerning this policy, please contact the C-Print coordinator.**



**If you have any questions, call, fax, or e-mail:**

Pam Francis, C-Print Coordinator

(716) 475-6019 (V/TTY)

(716) 475-5693 (Fax)

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WWW:<http://www.rit.edu/~netac>





## C-Print™:

# A Computerized Speech-to-Print Transcription System

## A Guide For Implementing C-Print™

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