

*Beyond discrimination,
beyond special treatment*

**TOWARDS A BETTER
UNDERSTANDING OF
VISUALLY IMPAIRED
STUDENTS
(FUNCTIONALLY BLIND)**

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We would like to warmly thank Carole Martel, clinical coordinator of the adult visual impairment program at the Clinique d'orthothérapie Carole Martel,, and Jules Martel, visual impairment rehabilitation specialist at the *Institut de réadaptation en déficience physique de Québec* (IRD PQ) for their help in reviewing and updating this brochure on visual impairment and functional blindness.

This brochure is intended primarily for teachers, but also for anyone likely to work directly or indirectly with students presenting a functional limitation.

Our goal is to identify the challenges faced by functionally blind students and suggest the attitudes likely to be helpful to them. We hope that the information presented here will assist teachers in their work and facilitate the integration of this clientele into the college community.

In addition, students with functional blindness are responsible for informing the cégep of their intention to study at the school and of their need for adapted services. The sooner the institution is notified, the better the chances of putting in place accommodations that are in keeping with their doctor's evaluation and the student's needs.

The person in charge of **Special Needs Services**¹ must always consider how the limitation will affect a student's learning process. For that reason, a one-on-one interview will be held with students in order to get to know them, understand their needs and clarify with them the services they will need to compensate for the effects of their functional limitations.

INTERACTING WITH FUNCTIONALLY BLIND STUDENTS

How many of us really know how to act in the presence of visually impaired students?

Many staff members, including teachers, are somewhat ill at ease when they first meet a student with a visual impairment. It is important to overcome this feeling of discomfort by remembering that **blind students are no different from other students**. Their needs are similar to those of other students, but since they access information differently, we have to adjust our attitudes accordingly in order to make their lives easier.

Here are a few suggestions. In case of doubt, **never hesitate to ask a blind person how you can help**.

- Always be clear and explicit when speaking, since they cannot read non-verbal cues. Tone of voice also indicates the emotional import of a message.

¹ Translator's note: This generic term is being used throughout the text to designate the cégep's service catering to students with Special Needs. If necessary, please change throughout text to suit your cégep's reality.

- Remember that they cannot see head movements expressing agreement or disagreement. These messages need to be communicated verbally. Again, tone of voice will indicate whether the speaker is in a good or bad mood. Be sure to identify yourself when meeting these students, as this will allow them to recognize and greet you. Also, let them know when you are leaving.
- Do not be afraid to use words such as “see” or “look” in everyday conversation. These terms are also part of the vocabulary of those with a visual impairment. They use them in reference to their own ways of “seeing” or like everyone, in popular expressions: seeing to one’s business, seeing clearly, looking at something more closely, etc.
- Avoid using an intermediary to talk to students with a visual impairment. Talk to them directly and make sure they know you are communicating with them, either by using their name, touching their arm or with some such gesture.
- If they need help to go somewhere, tell them you are holding out your arm for them rather than simply grabbing theirs or letting the guide dog follow you.
- Always walk just slightly ahead of the student. It is frustrating for a person with a visual impairment to be pulled by the arm.
- At a staircase, ask them to take hold of the handrail and let them know whether the stairs are going up or down. Walk one step ahead of them and warn them when you reach the last steps.
- When leaving visually impaired students alone in a room for a few moments, indicate to them the location of a fixed object (table, chair, wall, etc.). This will both serve as a reference point for them and give them a feeling of security.
- Briefly describe the layout of the class, lab or room to help them find their way.

Finally, here are a few tips on how to give students directions to another area on campus:

- Use tangible, accessible reference points (walls, corners, doorways, limits, stairways);
- Be specific: turn left or right, go up or down the stairs, first or second floor. For example: “Follow the right wall until you reach the corner. Turn right and walk to the carpet. The office is on your right. It’s the office of Mr. or Ms. Smith;”
- Avoid vague, abstract language: *over there, that way, this way, up there, down there*, as well as colours, shapes, symbols, details and pointless gestures.

Visual impairments can be placed on a continuum, ranging from modest low vision to total blindness. Visual impairment occurs when vision is compromised to the point that functioning within one's environment poses difficulty.

Functional blindness

Strictly speaking, a blind person is someone who is deprived of sight. This person will use the senses of touch and hearing to understand the world and Braille to read and write.

Those who become visually impaired later in life have the benefit of visual memories. They have a conception of the world that the person blind from birth does not. Deprived of sight, these people must adapt to their surroundings without automatically knowing the features and dangers involved.

Causes of visual impairment

Blindness has many possible causes. It can stem from a genetic, congenital or developmental anomaly, or be associated with a disease, an accident, etc.

Compensating with the other senses

It is false to believe that people with a visual impairment will have increased sensitivity in one or more of their other senses or possess a “sixth sense.” However, they can learn to use their other senses to the fullest. For instance, they do develop greater auditory attention compared to the general population. The nature of this compensation by the other senses is determined by the student's access to information, on the one hand, and their interpretation of this information, on the other.

Mobility and orientation are therefore major challenges for the visually impaired. Their level of autonomy is directly related to the mobility and orientation training they have received. This training is provided by specialists and involves developing certain techniques, which they subsequently use in familiar locations. Students with a visual impairment will nevertheless require assistance when navigating in new areas. As such, those providing this assistance will need to give specific verbal directions.

Cognitive development

To gain a sense of what is being discussed, students with a visual impairment will typically ask more questions and frequently use the names of those with whom they are speaking.

Communication

Communication skills play a key role in most social situations. Conveying images and receiving information are two fundamental aspects of face-to-face interaction. Students with a visual impairment cannot access some of the data related to non-verbal communication. Being unable to see facial expressions, to establish visual contact or

to perceive gestures are additional challenges facing these students as they interact with others.

Written communication is widely used in our society. It presupposes an ability to produce and transmit information, as well as to receive it. To access the printed word, sight is required. Students with a visual impairment will therefore need to acquire reading and writing skills of their own in order to develop this form of communication, a tool of critical importance in schools and workplaces. They do this by mastering the Braille system. Some learn Braille in elementary school, while others learn it as adults. They must supplement it with auditory assistive devices.

When working in groups, it is always helpful for the facilitator to verbally express the non-verbal expressions of participants.

The Centre d'adaptation en médias substitués (CAMS)

[Translator's note: Replace this section with the service used by your cégep]

The *Centre d'adaptation en médias substitués* (418-659-6600, ext. 4264), responds to requests and needs of low vision and functionally blind students throughout the 35 cégeps and study centres in Eastern Québec.

- Adapted instructional materials: Braille, computer files, large-print texts, audio recordings (MP3);
- Equipment loan program: adapted computers, digital recorders, etc.

Your local college representative will contact the CAMS representative regarding the needs of students with a visual impairment and their teachers: type of Braille code preferred, audio recordings, software used, etc. The CAMS representatives can then contact the students and teachers, if needed.

Reading, writing and research papers

Blind students obviously have access to fewer resources than other students, but can nevertheless conduct research for their assignments using new technologies (microcomputer equipped with a Braille display or keyboard, voice synthesizer software, the Internet, etc.). In fact, visually impaired students today have greater access to the documentation they need to complete their assignments and research (see sub-section *Adapted works*). Teachers must be sure to forward exams to **CAMS in advance** or send them by e-mail. Please note that PDFs can only be accessed by students using Braille keyboards, large-print software or voice synthesizers like *Jaws* or *Zoomtext*.

As for writing, blind students use their **personal computers, which they bring to all their classes**. They use them to take notes in Braille, write assignments, correct them, do the layout, etc. and **hand them in to their teachers in “normal” written form** on paper or via e-mail.

Impact of visual impairment on a student’s academic experience

The mental imagery of students with a visual impairment can sometimes lack some clarity. To avoid creating erroneous, inaccurate or confused mental images, teachers can use verbal descriptions and hands-on experiences with objects or recall previously acquired learning to generate new knowledge by analogy or comparison. In addition, they can illustrate their material with a wide range of examples and allow students to handle models and lab equipment. **Recourse to imagination is another way of compensating for a visual impairment.** And remember that simple teaching methods can often facilitate learning for other students as well.

Sighted students rely on deductive reasoning when learning. This entails gaining an overall view of objects, people and situations and then proceeding to analyze and deconstruct it. Students with a visual impairment, on the other hand, proceed by induction. First, they experience the world in a fragmentary manner, meaning that their mental representations of reality, people and objects stem from a composite of the information obtained through the other senses. They then carry out an extremely complex operation in order to construct a realistic mental image from this information. From a teaching point of view, proceeding by induction means “proceeding step by step.” This entails starting with one element, going on to the second, then the third and so on, and each time making connections between the steps and then with the starting point. In addition, when giving definitions, teachers must first provide it fully and subsequently explain it, giving the student the opportunity to write it down or record it.

TEACHING STRATEGIES

We should always keep in mind that the goal of education is to promote student independence. Cégep is the place where students should be able to make use of this

skill. Generally speaking, when those with a visual impairment have access to **and use** the necessary accommodations and resources, their performance will be similar to that of other students. The transition to college is an important step in the lives of all young adults, including those with a visual impairment. All college students are required to adapt to a new way of life, a much more diversified curriculum and increasingly abstract concepts. Students with functional limitations, however, experience additional challenges. Mobility within the cégep and the presence of a classroom assistant are examples of difficulties their impairment may entail. They must understand the role of these people in their study program. In college, students also typically have more teachers. This means having to adapt to each of them, their teaching style and their specific academic requirements.

Other than overprotection from their family, prejudicial attitudes on the part of those around them are the biggest hurdle to the social integration of people with a visual impairment.

It will often be more difficult for them to integrate into a group because of the sometimes negative or reserved attitudes of their classmates. In fact, research conducted by Goupil, Jones, Lanine and Shell (1983) demonstrated this tendency to reject or ignore students with a visual impairment.

Support

Role of teachers

In some cases, teachers who have visually impaired students in their classroom may need to meet them more often outside class compared to sighted students.

Role of **resource persons**²

Academic support

- Assist in reviewing material presented in class (brief overview);
- Help plan assignments and exams and manage study time;
- Provide assistance in understanding instructions;
- Perform any other intervention, as required;
- Follow up with teachers and make them aware of the student's issues;
- Put in place the accommodations and services offered to students.

Students with functional limitations can also benefit from tutoring services offered to those who require personalized support in order to succeed academically.

² Translator's note: This generic term is being used throughout the text to designate the person who provides academic guidance to students with disabilities (French *intervenant*). If necessary, please change throughout text to suit your cégep's reality.

Written exams

[Translator's note: Adapt this paragraph to your Cégep's reality.]

Exams can be transcribed into Braille, allowing functionally blind students to answer the exam questions using their computers and hand in their exams in a format teachers can access. Teachers must be sure to respect the deadlines for transcription and provide **CAMS** with a copy of the exam **in advance** (five business days). Teachers must complete a *Document Processing Request* and provide the **date required**, **name of the teacher** and **title of the course**. The Braille version of the exam will then be forwarded to the teacher.

Time factor

- Students with a visual impairment must be granted **150 per cent more time** for essay-type questions and other similar evaluations.
- Before the beginning of the course, teachers are **advised** to discuss the issue of exams and required accommodations with the student and resource person.
- **Counsellors**³ from the Special Needs Services or others working in a similar capacity are always available to advise teachers on how to adapt assignments, exams, classrooms, documents and audio recordings (MP3).

Exams: Please keep in mind that there is leadtime associated with the processing of documents.

Where to hold exams

It is recommended that students with a visual impairment take their exams in a classroom reserved for this purpose (time extensions, technical aids, etc.). This is generally discussed with the student and the resource person in charge of the student. Please follow the instructions of the Special Needs Services.

Academic standards

It is important that all academic evaluations be the same for all students, whether or not they have an impairment. An "A" must have the same value regardless of the student who earned it. If a student with a visual impairment fails an exam, despite the implementation of reasonable accommodations, it stands to reason that this student did not sufficiently master the material to pass.

Students with a functional limitation have the same right as all other students to experience failure as a driver of personal growth.

³ Translator's note: This generic term is being used throughout the text to designate the person at the Special Needs Services who is responsible for welcoming and integrating students with disabilities (including arranging for services to facilitate their studies) (French *répondant*). If necessary, please change throughout text to suit your cégep's reality.

Teamwork

Certain disciplines often require teamwork. Students with a visual impairment can easily integrate into a small group.

Laboratory work

In many cases, accommodations aimed at ensuring the physical accessibility of the lab will enable most students with a visual impairment to accomplish the required tasks on their own, this being the ideal solution.

However, in some circumstances, this solution may not be appropriate given a particular student's functional limitation. In this case, the student may need what is referred to as "procedural help." Before implementing this service, however, students need to discuss it with their resource person and teacher. Those who provide procedural help will be required to demonstrate aptitudes in handling and understanding the content of the lab work.

Procedural help

Students who use the procedural help service must:

- prepare the theoretical component of their lab work (read the goals and instructions of the lab in advance);
- tell the classroom assistant all the tasks that need to be completed and assist him or her, as the case may be;
- note the results of the experiment and make the necessary adjustments if the results are not those expected;
- write the lab report.

The classroom assistant will:

- procure the material required;
- prepare the work table;
- carry out the instructions given by the student, without commenting on these instructions;
- provide visual observations on the experimentation and its results, as the case may be;
- put away the material in the appropriate place.

Classroom assistants can ask the teacher or a technician to clarify or validate the results, since both they and the visually impaired student form a team, like any other lab partners.

Internships and field trips

Supplementary classroom activities serve to promote student independence and initiate them to the workplace. Internships are excellent opportunities for all students to understand the requirements of their chosen careers. The same principles outlined for teamwork and labs also apply to the context of internships and field trips.

Teachers should consult the Special Needs Services counsellor, the program coordinator or resource person, and those responsible for the internship sites and field trips to obtain information about available resources, ask questions about the physical environment and note any obstacles that students with a visual impairment may encounter.

Attitudes to adopt

- Openly discuss the issue with students to foster positive exchanges on the best ways to interact with them in light of their impairment.
- Always keep in mind that the goals are to help them integrate socially and support their learning. It is important to guide students toward overcoming their difficulties.

Classroom accommodations

Generally, teachers should allow students to select their seat in the classroom. If they need to work with an electrical device, they will need to be seated near an outlet.

Instructional materials

Instructional materials are not problematic for functionally blind students **when these are adapted**. To have the materials adapted, teachers should contact **CAMS** [Translator's note: insert name of service used by your cégep here]. Using the **course outline**, the **CAMS** representative and the teacher will make the list of **mandatory** materials (textbooks, class notes, compilations, etc). They will then determine the **essential** content to be processed and establish a transcription schedule. Please note that longer documents require additional time. Whenever possible, teachers will provide a hard copy, data file or both, of the materials to be studied. These documents will then be adapted and given to students in the most appropriate format: Braille document, data file or audio recordings (cassette or MP3).

Ideally, adapted material should be made available to the functionally blind student at the same time as other printed documents are given to the rest of the class.

It is therefore the teacher's responsibility to order the instructional materials in advance, given the waiting time for delivery. Some adaptations (of literature into Braille, for example) can be done at **CAMS**; others (scientific, musical texts, etc.) are outsourced.

Students with a visual impairment also have access to their own resources (see *Adapted works*).

Finally, three-dimensional material can be especially useful for the functionally blind student. The details on the object should be sufficiently raised, without featuring too many, since this makes it more difficult to establish connections among them. The size of the object must be suited to discovery through touch. The following three-dimensional material falls into this category: diagrams, graphs, illustrations, maps, anatomic models of organs, etc.

PowerPoint presentations

PowerPoint presentations generally pose certain challenges. It is therefore preferable to have a **hard copy of the presentation to adapt** in advance, so as to allow the student to follow the lecture.

Films, videos, slide shows, the Internet, etc.

Films, videos and slide shows can be useful teaching tools, even for students with a visual impairment. Usually these presentations serve to supplement or illustrate information given by the teacher. When using this medium, have the teacher or another student fill in the blanks for the visually impaired student, either by describing the images, reading the subtitles or interpreting the diagrams, graphs and tables.

Adapted works

- Other than instructional materials (course outlines, class notes, etc.) provided by **CAMS** upon request, students with a visual impairment now have access to many types of works in a variety of formats: CD-ROMs, audio recordings (MP3), Braille documents and digital files.
- Reference works, dictionaries, encyclopedias, etc. on CD-ROM.
- Instructional materials, general literature, etc. available upon request at the following loan services: Canadian National Institute for the Blind and the *Bibliothèque nationale du Québec* [Translator's note: add names of other loan services used by your cégep, if applicable].
- Dictionaries, encyclopedias, newspaper articles, literary classics, etc. available online.
- The Internet: while most Web sites are accessible to the visually impaired, it is important to note that **some are not**.
- PDFs cannot be accessed.
- **Larousse, Bescherelle and Précis de grammaire française (Grévisse)** are available in Braille at the adapted services office of the designated cégep. [Translator's note: replace with English grammar references available at your cégep]

Students with a visual impairment are normally familiar with the existing resources available at the cégep prior to their arrival.

Technical support

Technical aids

Generally speaking, students have mastered the use of specialized devices in high school.

The technical aids described below are normally covered under the Québec health insurance plan. In fact, the **Québec Programme d'aide pour les personnes ayant une déficience visuelle** provides the visually impaired with free mechanical, electronic, optical and other aids to enable them to read, write and navigate in unfamiliar surroundings. [Translator's note: Adapt the above if the services in this program do not target Anglophones.]

In addition, the **Cégep de Sainte-Foy** offers visually impaired students laptop computers (with a Braille display and vocal synthesizer) should their own equipment become defective. [Translator's note: Adapt this paragraph to your Cégep's reality.]

Talking calculator

This calculator is equipped with earphones and adapted keys. The results of operations are communicated through a synthesized voice.

Digital recorder

It is used to record lectures and relevant information.

Computer

The computer enables students to take notes in class, do their assignments, take exams, etc. and features an integrated Braille display and voice synthesizer.

Digital reading system

This system is used to read standard printed documents. An optical scanner reads the text, which is then decrypted by print recognition software and presented through a voice synthesizer. Several features allow users to store, comment or modify the text. This system presents certain limitations, however, the main one related to the print quality of the document to be processed.

Printers

Students with a visual impairment use two types of printers: a Braille printer (or embosser) and a standard printer (dot matrix, inkjet or laser).

Other aids

Functionally blind students use other aids (special writing pads, Braille rulers and protractors, etc.) meant to help them achieve the various academic objectives in their classes.

White cane

Students with a visual impairment learned early on how to find their way around with a cane, mobility courses being mandatory for them in elementary and secondary school. Students use the cane both to gather information about their surroundings and to gain greater autonomy.

Guide dogs

Some students have a guide dog. These animals will never disturb the class. In fact, they are impeccably trained and highly disciplined. Most of the time, the dog will lie down quietly under its master's desk or table. **While we may all be tempted to pat such a docile, dedicated animal, we must never do so when it is harnessed. This dog is responsible for guiding its master and should never be distracted.**

ACCOMMODATIONS AND SERVICES

Accommodations and services can be arranged in keeping with the student's diagnosis, medical certificate and needs. These measures are as follows:

A letter to teachers

Note takers

Note takers **must commit** to providing **CAMS** with a copy of the notes taken **after each class**. **CAMS** will then have them transcribed into Braille and returned to the student as soon as possible.

Electronic note taking

Notes are taken electronically and forwarded by e-mail.

Technical aids and adapted material previously described (i.e. talking calculator, seating arrangement, etc.)

Academic support

Procedural help

Classroom assistant

Tutoring

Extended time on exams

Adapted classrooms

Adapted lockers

Adapted schedules

Digital recorders

CONCLUSION

Understanding students with functional limitations means, first and foremost, grasping the complex nature of the relationship between them and their environment.

We hope this brochure has provided the basic elements to help you better understand students with a visual impairment, including functional blindness, and that the measures described will allow you to resolve some of the challenges that may arise. If your job entails contact with students with a visual impairment and you have identified certain needs as a result of this interaction, whether they relate to a student or your own role, please do not hesitate to use our services.

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