



E-Learning COach for **V**isually **I**mpaired **P**eople

TUTORIAL **S3 “TEACHING PRACTICE”**



Official course tutorial for the E-COVIP examination

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@CO4ViP[®] certified E-Learning course

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2 Learning aim

The primary aim of this module is to give tips and advice how to take into consideration the special needs of different, especially visually impaired students on blended learning course. This module concentrates on different situations of onsite teaching.

3 Before the onsite teaching period

You'll get more specific information about what to do before the course starts on module 4 Organisation and administration. Here is the list of what to do before the onsite teaching period. The most important thing is to know who your students are and be prepared.

- Get to know your student's particular needs in advance
- Find out what are the reasons for visual impairments your students have. (Look at the Visual Impairment -module)
- Find out what devices your students are using (Look at the Assistive Technology –module) and what devices they can bring themselves to the onsite teaching period. Also find out if the devices can be connected to the classroom network. Get to know the basic functions of the devices that will be used during your onsite teaching periods.
- Modify and make transcriptions to your course material based on the information you've got.
- Make materials (booklist etc.) available before course starts.
- Accommodate the classroom based on the on the information you've got from the students. Consider the lightning, seating arrangements, computers and possible place for the guide dog.
- Remember to send the important information about the course (user name and password, address of the web page) for blind students in Braille.
- Ensure the mobility training of your visually impaired students and give clear instructions how to arrive to the course location.

4 Classroom accommodations

For the visually impaired student it is difficult to manage in a new environment. Therefore the easier you make the adaptation of the student to the new place the more efficient he can concentrate on his studies. So the effort you'll put into the accommodation will pay itself back as better study results.

4.1 Arrangements

- Reserve front row seats for low-vision students. If a guide dog is used, it will be highly disciplined and require little space. Guide dogs must not be refused entry to buildings and classrooms.
- Ensure that students with vision impairments are notified of organisational changes in an appropriate way. It is difficult to find lecture rooms if changed at the last minute. If the training room arrangement is changed, this must also be told in time.
- Obstacles like cords on the floor, canvases hanging freely and set up projection tables should be removed if possible or should be explained to the students, so they can bypass these obstacles.
- Keep a background noise to a minimum.

4.2 Lightning

- Lightning should be considered as well so that the day light coming from window or light don't cause the glare.
- Glare Protection Screen minimizes visual fatigue associated with glare on the monitor.
- Table lamps should be available for students who need it while reading text.
- Stand in a well lit place while teaching – not directly in front of a window, as your face will be in shadow.



Picture1: Indirect light doesn't cause the glare

4.3 Computer adaptations

Low vision computer users in most cases use a screen magnifying software to operate with their computer. They can use computer with magnifier “normally”, although perceiving the content of the screen might take longer time since at once they see only a part of the screen content.

To support the use of computer:

- Install magnification and screen reader software if needed.
- Large Monitor with High Resolution (19" - 25") - Increases character size in proportion to monitor dimensions and provides a crisp, sharp image.
- In addition to the individual settings of devices, the visually handicapped often requires individual contrast and colour adaptations of the computer as well. A combination of bright writing and dark background has the correct contrast although other individual colour adaptations may be done also. Sometimes several adaptations can be required since the sight can vary depending on the tiredness of the eyes.
- Make sure the computer systems to be used by the students visual impairments has the monitor at eye level and it is positioned so the students can view it at close quarters.
- Place the document holder to the same distance as the screen.



Picture 2: Computer screen and the document holder at the same distance

- To orient a user with a visual impairment to a particular keyboard, a set of tactile overlays should be available to identify the most important keys. A raised dot or bleb can be added to certain keys, such as the home row keys or the number five on the numeric keypad.

- Adhesive backed keycap labels can be purchased and applied to the standard keyboard that has very large, bold letters. These labels can be purchased in either white on black background or black on white background.
- Provide headphones to the student so they can more effectively understand the speech output device of their computer by limiting extraneous noise and to limit the distraction experienced by other students from the VI student's computer's constant speech feedback.

4.4 Explanations

- When you explain for instance work room arrangements for visually impaired person, all explanation should be given using clear and measurable terms. For this, you can use available measures or size units like meter or feet. For example, don't say "The chair is over here in front of you." but "The chair is approximately 2 metres in front of you"
- When explaining the directions, the commonly used terms "on the right" or "on the left" aren't that helpful especially for the blind person. Instead it's better to use the model of the clock. For example in the situation shown in the picture 3 below, you could explain the position of the mouse as following:
"The mouse is located approximately two hand broadly to the right from the keyboard on 3 o'clock!"



Picture 3: Mouse on 3 o'clock

- You can use familiar shapes to describe the new things to the students. For example in the classroom the computers are arranged to the shape of the circle.

5 During the lessons

- Explain at beginning of lecture what the structure/main points will be.
- Take regular breaks so that the students have time to make notes.
- Summarise regularly and Build in regular stopping points to check the understanding and that all material has been understood.
- Allow the visual impaired students to record the lectures.
- Allow student to feel equipment during demonstration.
- To enable an integrated computer training of both visually handicapped and not visually handicapped students, a modular structure is certainly an appropriate approach.
- Consider the scheduling of your course, because the visual handicap causes a higher time requirement in learning and practicing.
- Remember that it takes longer for the visually impaired student to read the whole screen.
- Use tactile material If it is not possible to make the material accessible.



Picture 4: Tactile cow

5.1 Positive Communication

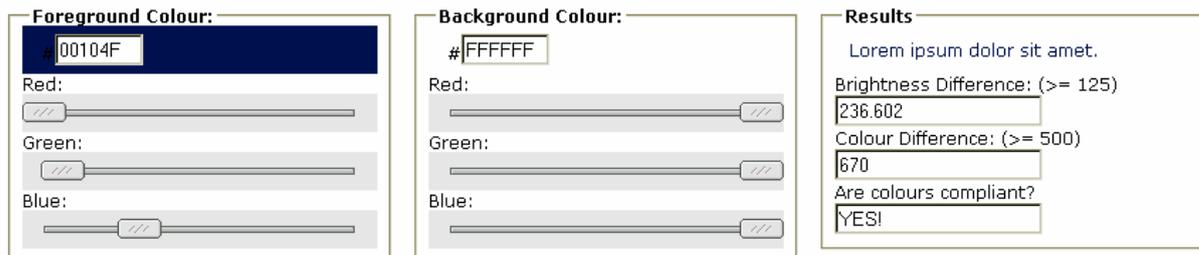
For the visually impaired the verbal communication is the most important way to communicate. Therefore pay attention to your speech and the hearing circumstances of the class room.

- Face the class when speaking. Speak clearly in a normal voice, not loudly, slowly or with exaggeration.
- Identify yourself by name, in case the person does not recognise your voice.
- Identify the students that are talking by name.
- Indicate verbally when you are entering or leaving the person's presence.
- Give clear, explicit instructions/directions.
- Verbalize as you write on the board, overhead projector, and/or charts - be as explicit as possible as you verbalize, for example: "Let's look at sentence #5," instead of, "Look at the next one;"
- Say if something particularly should be noted.
- Keep background noise to a minimum.
- Include the following statement in the course syllabus and repeat it during the first class meeting: "If you need course adaptations or accommodations because of a disability, if you have emergency medical information to share with me, or if you need special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible. My office location and hours are....."
- Several difficulties confront the partially sighted students that do not affect the blind students. Faculty and staff members may have difficulty believing that low vision students need access to printed material because most of these students do not use canes for travel and are able to get around like everyone else. Also, depending on the nature of the vision loss, these students may not be able to read other people's visual cues, so they sometimes appear expressionless and seem uninterested when quite the opposite might be true.
- If you're helping your visually impaired student with computer related problems, keep the assistive software on so your student can see or hear what you're doing. However, if it's necessary to switch off the assistive software, explain your student what you're doing.

5.2 Material

All the tips below are not suitable for every visually impaired student, so you have to discuss with your student what kind of material he prefers. Low vision student often find it difficult to use the written material. On the other hand blind students appreciate the supplementary reading material in digital or in Braille form.

- Provide lecture notes and other materials in advance (at least before onsite training) for transcription (Braille, txt etc.).
- Written material should be clear and simple. Keep lines of text relatively short.
- Provide large print versions for low vision students. In practice, the truetype font **Arial** or **VERDANA** is recommended in size of 18 ppt. (In Power Point slides 20 is the minimum font size.)
- Make sure that the colors are readable: you can check the contrast from http://snook.ca/technical/colour_contrast/colour.html



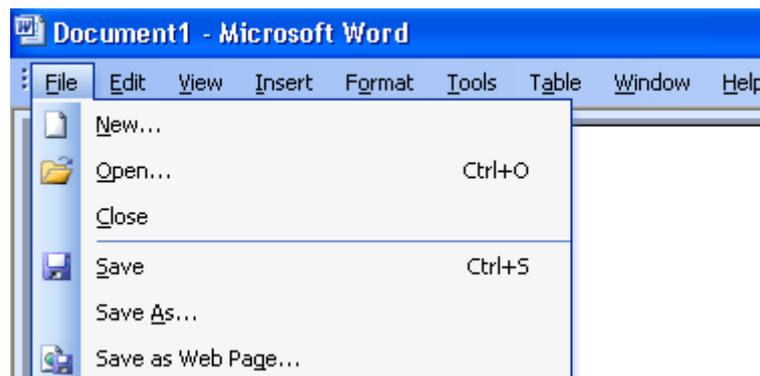
Picture 5: Contrast counter from the www-page of Jonathan Snook

- Keep backgrounds plain to avoid visual interference with text
- Make sure that the student has his own device for reading normal print.
- Provide subject word lists, glossaries of terms and acronyms.
- You should provide your material in digital text or html format. Screen reading software can read easily these formats.
- Provide text/audio alternatives to pictures and explain visual material (diagrams etc.) verbally. Ensure that all meaningful images have text tags in html format describing their contents.
- Avoid visual distractions — e.g. bold colours, flashing and moving elements
- Provide clear signposting and navigation
- When you work with overhead film or SVGA projector provide always a hard copy for the visually impaired student, since a recognition of the projection is not always possible. If possible, switch the projection picture onto the computer screen of the visually impaired student.

5.3 Orientation to e-learning environment / application

For visually impaired student whose observation is mostly based on hearing, it is difficult to understand the e-learning environment in its entirety. The same problem exists if you see only a small part of the display at the time. That's why orientation takes more time from the visually impaired than from the other student.

- Introduction into the window architecture and the menu structure of the application is very important. Remember that the represented screen area is smaller when the higher magnification has been chosen.
- In your introduction provide checkpoints to the different applications: magnification software users often ignore the content situated on the right side or on the lower edge of the screen. For example the next page arrow on the upper right corner might be difficult to find without your help.
- Complex screen contents should be described for low vision students by using simplified screenshots. Hide unimportant visual elements from the application if possible.



Picture 6: Simplified user interface of MS Word

- Although low vision computer users can handle the mouse, it's recommended to use the short cuts (for example Ctrl+S for saving) since these are considerably faster and applicable without navigation on the screen.
- The menu functions still should be explained so the student will know where to find a function in case he has forgotten the short cut (For example File -> Save).
- Navigation in the e-learning environment is individual and intuitive for every student. Therefore it might be difficult for the teacher to follow and instruct the student in the environment without listening the screen reader and knowing the basic short cuts (OS + screen reader + e-learning environment). Basic short cuts for screen readers can be found from Assistive Technology – tutorial.

- The accessibility is still not good in forms, dialog windows and boxes. Ensure that the student can properly use the dialog boxes, windows and fill-in forms in e-learning environment.

6 Tests, learning tasks and assessment

Written tests usually require the use of assistive technology and more time from visually impaired student. Therefore it's sometimes more equal to have different ways of performing the test or assignment, for example orally. The assessment should be continuous and transparent – as for all of the students.

- All the material needs to be accessible; this includes also the tests and learning tasks.
- Written assignments may take longer time from the visually impaired student. Therefore give more time for the tests and tasks for the users of assistive technology. The student should have also alternative ways of showing the knowledge. For example the test answers could be recorded if the visually impaired student can't write down the answers.
- Reading will take longer as well. Clear instructions in the beginning of the learning task/ the test are necessary. For example you should tell how many and what kind of questions there are in the test. Test questions should be numerated to help to understand the structure.
- Difficulty that some partially sighted students experience has a more subtle effect and can be troublesome - the psychological response that large printing evokes in a sight-reader. Such handwritten communications tend to give the reader the conclusion that a student with this kind of handwriting is immature and that the written communication is less sophisticated. This problem can also occur when the student uses a larger font. The assumption is sometimes made that the student is merely trying to make a paper appear longer when a term paper of a specific length is required. Stating the number of words required instead of the number of pages solves this problem.

6.1 Assessment

- Assessment should be transparent (the aims and criteria should be announced in the beginning of the course), so that the visually impaired student will be able to concentrate to the most important content of the course.
- Assessment should be based on the learning process. For example reports shouldn't be assessed by the layout but only by the content since for visually impaired the modification of the layout is difficult.
- Assessment should be continuous, since the teacher and the student need the feedback about the level of the learning process.

7 Exercises

1. Prepare a list of questions that can be used to find out the individual needs of the student for their computer setup?
2. Prepare a lesson plan on a topic of your choice. Include in this lesson plan details of how you would consider the needs of visually impaired students.
3. Prepare an accessible quiz based on your lesson plan.

8 Sources

Proviptrain project: <http://www.proviptrain.org/>

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<http://www.tsbvi.edu/Education/general-ed-tips.htm>

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