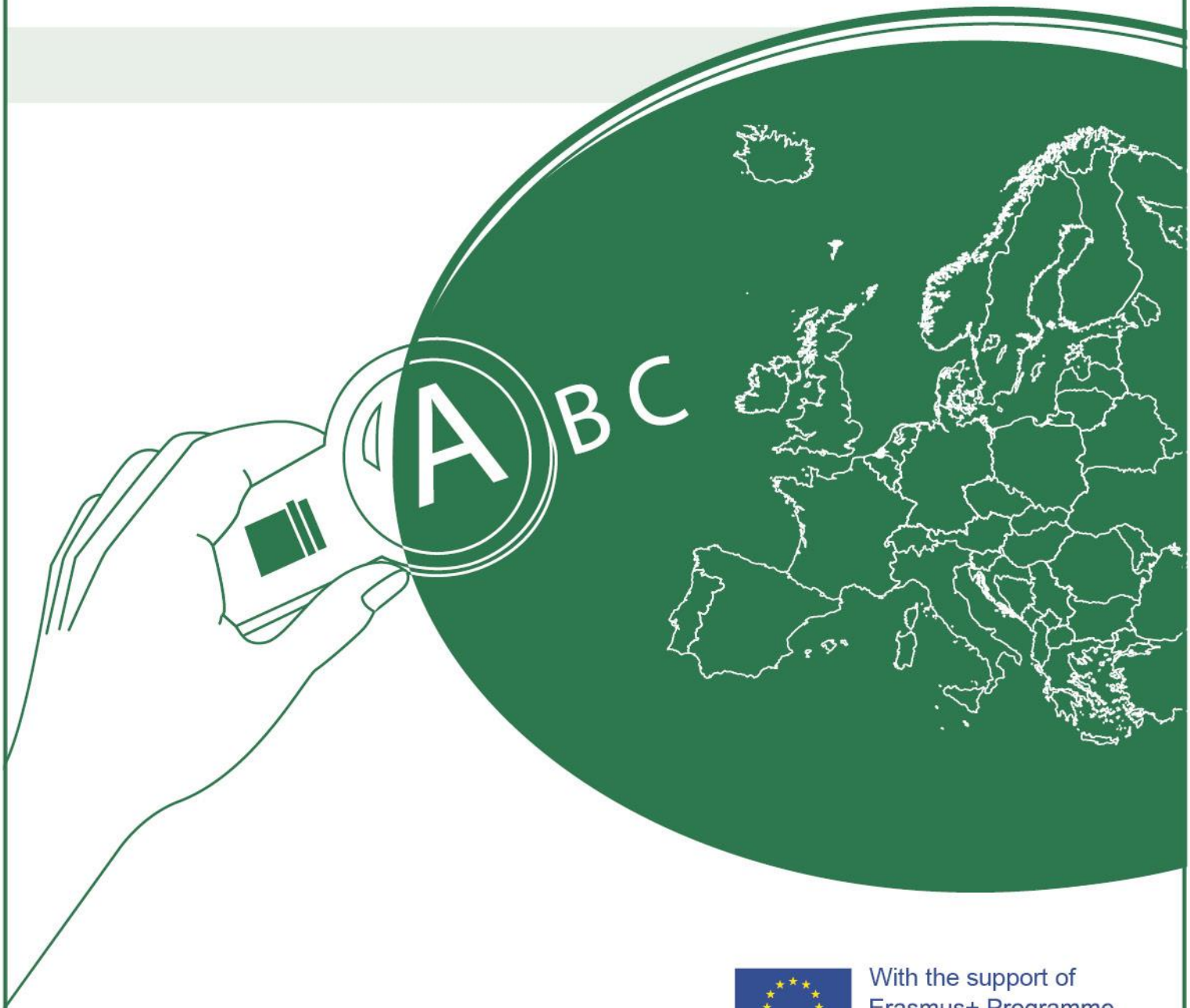
Teaching the Partially Sighted

Foreign Languages



With the support of
Erasmus+ Programme
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A series of special education teaching guides

Inclusion in Europe through Knowledge and Technology

Project no.: KA201-2015-012

Teaching Foreign Language

to Students who are Partially Sighted

Contents

Inclusion in Europe through knowledge and technology

Information on the fundamental principles, practices, educational material and teaching aids used to teach various subjects to students with special needs are few and far between. In some cases, material has been prepared for internal use at specialised schools or in other closed environments. In other cases, knowledge has been passed from teacher to teacher as part of workplace training.

No systematic material on pedagogical principles, practices, educational material and teaching aids exist for areas such as teaching first language teaching, foreign language teaching, mathematics and foreign language for the blind/visually impaired or partially sighted.

With this in mind, the goal of this European project is to further develop, implement and disseminate good practices in the area of inclusive education and learning technologies by delivering three primary components: Teaching Guides, Guide on good practices Inclusive learning and Teaching and SMART E-learning objects.

Teaching guides

In completing the project, RoboBraille partners have created a series of twelve educational guides covering fundamental principles, practices, educational material and teaching aids covering first language teaching, foreign language teaching, mathematics and foreign language for the blind, partially sighted and dyslexic.

Inclusion guide on good practices Inclusive learning and teaching

In support of this, the project has collected and collated information on good inclusion practices in five select areas (teacher skills, alternate media, support structures, preparation for inclusion and teaching environments) which are published in a catalogue of good practices.

SMART e-learning

Finally, the project will adapt a comprehensive set of educational material on the RoboBraille service prepared in the LLL LdV RoboBraille SMART project into a set of learning objects for popular e-learning platforms for web and tablet deployment.

For all materials produced by this project

Because the material covers teaching of students of various age, they are named students, learners, pupils and children. The material also reflects the different culture and level of inclusion practices of the project partners. The guide is not a substitute for formal training of teachers.

Introduction to this teaching guide

Low vision/partial sight

Low vision consists in a non-correctable vision loss that interferes with daily activities. It is defined in terms of function, rather than [numerical] test results. It takes into account both visual acuity and visual field.

Teachers must take into account the variety of partially sighted students (different pathologies, central or peripheral visual difficulties, daily or nocturnal vision etc.) and therefore different strategies and recommendations must be selected for each of them.

Partially Sighted Students' teaching and learning approach is not the same as that for the blind students, however in both cases teachers must know that total or partial lack of vision is not an obstacle to learning.

Unlike blind students, partially sighted students have a partial command of the experiential world around them, often they can take advantage of the experience accumulated before the loss of sight.

Modern pedagogical criteria referred to students with disability are based on the International Classification of Functioning (ICF)[1]. ICF measures both health and disability, takes into account the context and therefore teachers must base their strategies on the functioning profile and not only on the disability of their students.

Teachers may consider creating individual educational plan for each student with visual disability, based on the learner's abilities, needs, special requirements, prior learning, individual experiences, specific areas of strength and weakness. The individual plan should include strategies based on each student's pace and learning style, And be aimed at reaching the student´s educational goals. It needs a continuous re-adjustment according to the feedback received from the student (new skills, knowledge, attitudes) and his/her learning outcome.

Sensory-perceptual learning

Partially sighted persons spontaneously use alternative channels to acquire and re-organize information. Anticipatory function of sight: a full sighted person can "see" the door handle while he/she is approaching the door; the blind or partially sighted person must first go through the details of the door using a "touch mode" and only after decide what to do.

The perceptual process to acquire information goes through sequential steps, it is not a global, simultaneously visual approach as with sighted people.

[1] ICF is the WHO framework for measuring health and disability at both individual and population levels. (2001 Resolution WHA 54.21)

Teachers should encourage this alternative mode and base teaching and learning strategies on the use of all the senses: visual (sight), auditory (hearing), kinaesthetic/tactile (touch and balance), gustatory (taste) and olfactory (smell). They represent an integrative support to help the student acquire the missing details and re-adjust distorted information. Each student will have his own channel of preference and his own perceptual mode. The multisensory approach is recommended for **all** students and is an inclusive strategy.

Narrative, descriptive mode: More complex situations, items and themes can be introduced during a lesson through a descriptive, narrative, mode to compensate for the lack of interaction with the real object or situation.

The support of life-like situations can help stimulate concept development and cognitive functions.

Specialised pedagogies for teaching foreign language to partially sighted students

Foreign languages are an important part of education in every European country. Many educationalists recommend to study foreign languages at an early stage. Young children pick up languages very easily. Their brains are receptive to language acquisition and this facilitates learning another language in addition to their mother tongue.

The Inclusive features and values of learning a foreign language are unique: Since the 1990s, the Common European Framework of Reference for Languages (CEFR)[2] has tried to standardise the learning of languages across Europe.

Learning a foreign language can have multiple functions: social, educational, cultural, emotional and inclusive. It represents:

- Personal fulfilment.
- A culturally broadening exposure and experience in linguistic and cultural diversity.
- A path to European mobility exchange.
- A contribution to the strengthening of general literacy skills and knowledge through the links and comparisons which can be made between patterns of mother tongue and foreign language.
- An interactive way of learning.

The partially sighted students may need adjustments in the format of teaching material and response material (large print, colours and contrasts, audio, digital format). They may also need adjustments in timing and length of work. Knowledge in a foreign language must meet the requirements for:

- Measurability – through specialized tests for each level, consistent with the first five levels of the common European framework.
- Feasibility – the minimum requirement for the degree level of proficiency in a foreign language, i.e. should be attainable for around 80% of the students.
- Integration and interdisciplinary connections
- Speed – a partially sighted pupil often need extra time to solve a problem.

[2] The Common European Framework of Reference for Languages (CEFR) is a European Indicator of Language Competence. It was put together by the Council of Europe as a way of standardising the levels of language exams in different regions. There are six levels:
A1, A2, B1, B2, C1, C2

Challenges relating to the disability/specific learning difficulty

General challenges

In some countries, all pupils are taught foreign language from first grade. In books, the learning is often based on illustrations. These – and especially details in the illustrations - may be very difficult to see if the child is partially sighted.

The most common barrier to teaching partially sighted students is represented by the traditionally sight based visual teaching approach, with information and teaching material offered only in a visual format. It could be:

- Inaccessible textbooks (small print, too many images, diagrams, illustrations).
- Handwriting difficulties.
- Copying from the chalkboard.
- Timed tests.
- Lack of eye contact and impossibility to catch non-verbal communication such as facial expressions and gestures.

Other barriers may be:

- Lack of assistive technology.
- Lack of specific teaching competence related to visual disability and its implication in the learning process.
- Difficulty in understanding and complying with the partially sighted students' learning style.

It is essential that the teacher assess the visual condition and modality of the partially sighted student (central vision, peripheral vision, visual acuity, visual field etc.) and their preferable communication channel (tactile, auditory, verbal).

A good level of space perception and coordination is fundamental in the learning process of students with partial sight.

Specific challenges

Special attention must be given to the specific aspects of learning a foreign language such as new and different sounds (pronunciation) and grammatical or spelling rules.

The complexities and syllabus of a foreign language

In primary school learning a foreign language foresees the achievement of the same basic skill as mother tongue (listening and speaking, reading and writing).

In secondary school learning a foreign language involves the use of categories and concepts formed in the framework of other school subjects (history, civilization and geography).

Linguistic competences to be achieved are oral comprehension and oral production, written comprehension and written production.

A description of suitable teaching methodologies

Creating adjustable, flexible, sequential teacher's presentations

- Step by step presentation and description of the subject, theme, problem, procedure.
- Extra timing allowance.
- Replace written tests with oral tests.
- Setting (lighting, possibility to sit near the blackboard).
- Classroom design tips.
- Labelling system.
- Explain what steps are needed to reach the desired outcome.
- Repetition and routine.

Relief strategies

- Visual communication must be integrated by descriptions, exploratory and experiential approach.
- Face to face learning activities.

Figure 1: Student making eye-contact with teacher

- Instruct classmates to avoid no-verbal language /to be aware of the non-verbal language, that a partially sighted student might not observe or understand (gestures, mimics that need eye contact) or addressing the student without calling out his/her name.
    - Please note: It is difficult to avoid using non-verbal language among students, when communicating. The partially sighted students have to cope with that anywhere else. It is perhaps better, that the other students are aware of the lack of ability to perceive non-verbal language.

Figure 2: Teacher's pointing hand (inappropriate body language)

- Notify changes in the classroom (obstacles, students sitting in different desks from the previous day).
- Life-like situations must be selected in order to stimulate concept development and cognitive functions.
- Continuous exposure to listening and understanding (relying on partially sighted students vocal-auditory abilities).
- Integration of alternative sensory channels to stimulate imagination, to acquire missing details or re-adjust distorted information:
    - Auditory channel (e.g., noise of water/sea, the perception of a draft air, a distant emergency alarm sound).
    - Tactile channel or olfactory medium (the smell of freshly cut grass or burning smell etc.).
- Drama (role play, speech and drama).
- Adaptation of curriculum.
- Support of conceptual maps.

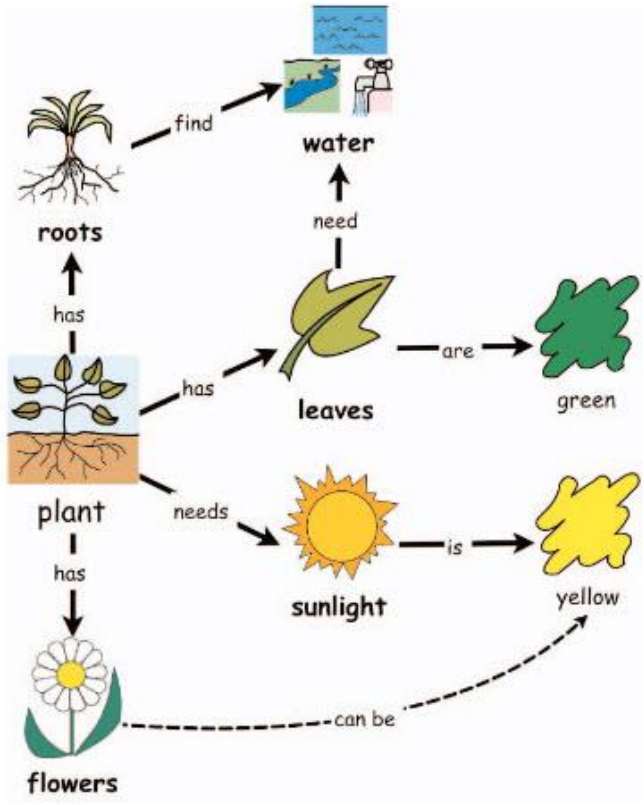

Figure 3: Conceptual map of chlorophyllin function in photosynthesis

Adjustable, flexible format of teaching material and test material:

- Large print (font size 16 and over), bold print (avoid slanted/italic printed characters).
- Avoid crowded, close together or full pages of print.
- Preferable font style: sans-serif.
- Marked graphic contrast.
- Simple shapes.
- Digital presentation.
- Use of broad felt pens or markers (black or coloured), with special pencil grips for the student, if necessary.
- Use of highlighter markers to help with reading (if needed).
- Use of preferred colours and shade of contrasts.

Figure 4: Student writing with a broad felt pen

- Reduce the number of items per page to avoid clutter.
- Allow partially sighted students more time for copying from the board and/or move students closer to the chalkboard, or place material to be copied on his/her desk.
- Provide students with a accessible scanned versions of educational material allowing use of assistive technology.
- Facilitate frequent breaks when the student is required to read larger portions of text.

Adaption of educational material

Teachers may adapt the format of the educational material to the residual visual acuity of each partially sighted student. For some students enlarged copies and paper material could be sufficient, other students may need digitalized material.

Educational material containing pictures and other illustrations necessary to the understanding of the text should be clearly described.

In case a text includes lists, they should be clearly organized and ordered. e.g. with numbers or letters.

Extra spaces and blank lines should be avoided.

Reflowable e- books may also be a suitable option as they allow for individual preferences in terms or fonts, size, colours and contrasts - (turn to the “Learning technologies section”).

Presentation and adaptation of tests

The format of multiple choice exercises, filling the gap exercises and combination of sentences are very hard to visualize.

- **Matching exercises** should be completely adapted and written in two lists, sequentially placed in the document in two different vertical rather than horizontal columns, in order to facilitate the reading or the items by the partially sighted students.

  e.g. *Match the questions with the right answers*

1. Are you coming with us? A. No, he didn't
2. Did he tell you about it? B. Yes, they do
3. Do they understand the problem? C. No, we aren't

This exercise may be adapted for the partially sighted students in this form:

1. Are you coming with us?
2. Did he tell you about it?
3. Do they understand the problem?

A. No, he didn't
B. Yes, they do
C. No, we aren't

Another solution to be considered is putting the information into a proper table structure in order to ease navigation using assistive technology.

- **Filling blank spaces**

  Exercises that require **filling blank spaces** may be adapted in various ways. It is important that the teacher and the partially sighted student find the most suitable way to present the exercise.

  Filling the gaps exercises represents a problem because it is difficult for the partially sighted students to visualize the exact position of the gap to fill in.

  One solution is to place the gaps at the beginning of the line. The gaps should be identified as empty spaces (3 or more) in order to facilitate the reading or through a screen reader.

  Another way to present these exercises is to define a word together with the teacher who will then replace the gaps with the chosen word.

  Example:

  "Complete the descriptions with the words below**:"**

  red house

  ice cream pizza

  1.When I was in Italy, I ate a delicious …. in a typical restaurant.

  2. My favourite colours are …… and blue.

  3. Our son loves having an …….. on Sundays with his friends.

  4. Is your ……. right there?

Adaptation 1:

The words are positioned below the exercise in list form:

red

house

ice cream

pizza

Adaptation 2

The blank space is replaced by a chosen word = e.g. *wow*

red

house

ice cream

pizza

1.When I was in Italy, I ate a delicious *wow* in a typical restaurant.

2. My favourite colours are *wow* and blue.

3. Our son loves having an *wow* on Sundays with his friends.

4. Is your *wow* right there?

Educational materials for young learners

With young learners, teachers are able to be more practical. They usually have more time to focus on real objects and allow physical activities in order to improve the learning process.

Figure 5: Interactive Whiteboard

REALIA (objects from real life like plastic bottles, glasses and toys) will strengthen the learner`s association between words and the objects.

Songs and videos supported by voice output help students of all ages to learn the foreign language with the correct pronunciation and have fun at the same time.

Learning technologies that support inclusive teaching to partially sighted students

Electronic devices for partially sighted

Electronic Magnifiers (or CCTVs closed circuit television systems) are tools used to enhance vision. They enlarge or magnify print, pictures, artwork, or whatever else is placed under the camera; in addition, they can also enhance the contrast and brightness, reverse colours, apply rulers and reduce canvas to facilitate reading. They come in different varieties and sizes. The desktop or table-top version has a camera system that displays a magnified image on a monitor. Some models also have (OCR), along with speech output in order to hear the text being read aloud at the same time it is displayed on the monitor. In addition to seeing the reading material on the monitor, models with OCR optical character recognition and speech output allow the student to hear text and documents read out loud.

Figure 6: Desktop Magnifier

The portable version is a device with a camera on the underside that captures the image of text, pictures, or other items, and a monitor on the top side that displays the image. It can also have a built-in bright light. It can be hand held or meant to be placed directly on the reading page. A hand-held magnifier is especially useful for brief "spot" reading and for portable use. They have a smaller field of view than a CCTV.

Figure 7: Hand-held portable video magnifier

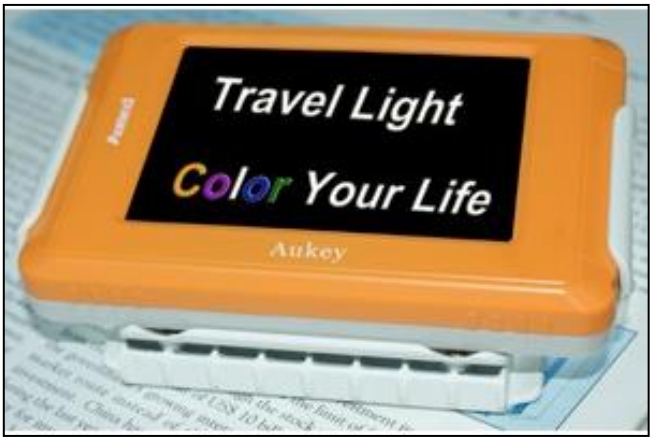

Figure 8: Portable video magnifier

Figure 9: Portable magnifier combining distance and near viewing

Figure 10: Long arm video magnifier

There are also models specifically produced for use in the classroom, because they have a flexible camera that can be directed towards the blackboard and display on the student's monitor what the teacher is writing on the board.

Computer-based assistive technology

The two main computer accessibility tools are screen magnifiers and screen readers. They are both used for ASR audio supported reading. A screen magnifier is a software that interfacing with a computer's graphical output, enlarges part (or all) of a screen. Some screen magnifiers enlarge text, icons, cursor and other graphics up to 20 times or more. Screen magnifiers provide features such as colour inversion, cursor customisation, different magnification (the presentation of the enlarged portion can cover the full screen, provide a lens that is moved around the un-magnified screen, or use a fixed magnified portion). Screen magnifiers also offer speech output. It can be used in concert with a screen reader. The digital text is displayed in on-screen magnified print in synch with speech driven by screen reader technology. Partially sighted students accessing visual and audio information simultaneously can have the advantage of seeing each word highlighted as it is spoken via synthesized speech.

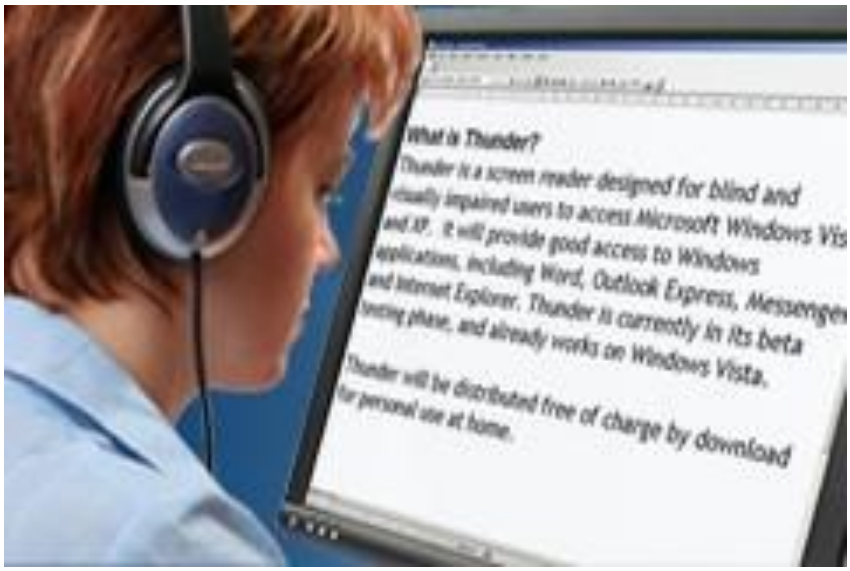

Figure 11: Screen reader

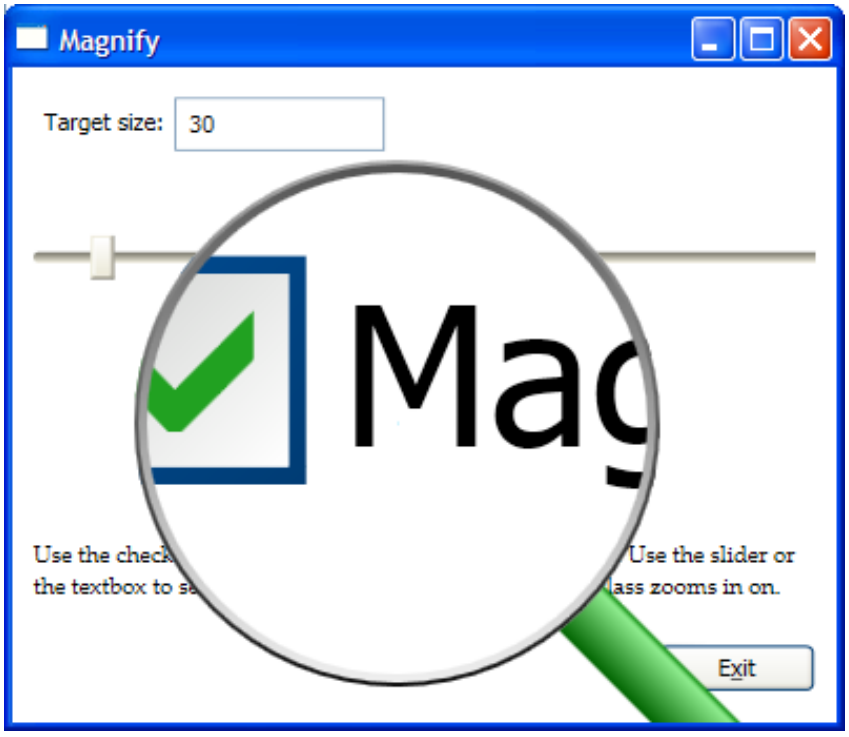

Figure 12: Screen magnifier

A Screen reader is a reading software, which reads aloud all of the text and text-based elements (such as characters, words, titles, paragraphs) displayed on a computer screen. Screen readers speak letters, words, numbers, punctuation, and elements aloud, sending the voice output to the computer speakers or connected headphones. Screen readers announce each keystroke as you press it, decode and describe icons, and even describe certain graphic images. Screen readers also include special mouse navigation keys to manipulate the mouse pointer, moving it on the screen and to press other keys to perform a mouse click or double click. Screen readers are meant for blind students by they are also used by partially sighted

students because they reduce eye strain and because sometimes the magnification offered by a screen magnifier is not sufficient.

Digital books

Partially sighted readers, though supported by enlarged prints or magnifiers take appreciably longer to complete tasks requiring reading than do their sighted counterparts and their reading rate levels are not comparable to those of average print readers. Students therefore supplement their print access with audio supported digital material.

An electronic book (or e-book) is a book publication made available in digital form, consisting of text, images, or both, readable on the flat-panel display of computers, e-book readers, tablets or other electronic devices. Reflowable e-books support the individual needs of students with partial sight in terms of magnification, contrast, fonts as well as foreground and background colours. The two most common reflowable eBook formats are Mobi Pocket for Amazon Kindle and EPUB for all the other major devices including Apple's iPad and iPhone, B&N's Nook, Kobo, Google Play and OverDrive. A reflowable document is a document that can automatically rearrange its layout to fit any output device. For audio support, e-books can be read via smartphones and tablets. Some smartphones and tablets feature default accessibility options like magnification, colours inversion, speech output etc.) In particular, Apple devices feature a built-in screen-reader called Voice Over, which comes pre-installed in all Apple devices, including smartphones, tablets, TVs and watches. The Android OS features a similar application, called Talk Back, which is often already present on the device or that can be installed manually.

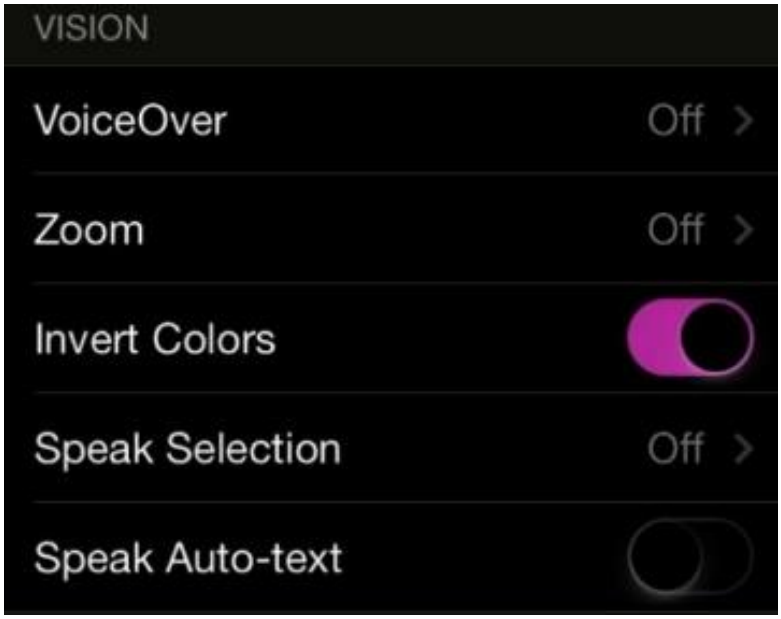

Figure 13: Smartphone screen with inverted colours

Figure 14: Smartphone with speech output

The DAISY Talking book is a format that boosts special features that can improve reading experience, such as deep navigation functions, bookmarking, spelling, adding notes, etc.

Text to speech

A Text-to speech synthesizer is a piece of software that can convert text from an electronic document into an audio file using a synthetic voice that closely reproduces human voice. TTS engines are available in a variety of languages, and can coexist on the same machine, thus making it easier for foreign language students to convert long blocks of text into audible format. In addition, some screen-readers combine TTS with magnification so that a student can hear spoken text and watch it at the same time, this activates both auditory and visual perceptions.

The RoboBraille service

Digital material can be converted into accessible alternative formats by using the RoboBraille service.
RoboBraille is a web and email service capable of converting educational material and other textual material into a range of accessible formats including mp3 files, e-books, digital talking books and Daisy. The service can furthermore be used to convert otherwise inaccessible documents such as scanned images and pdf files into more accessible formats. RoboBraille offers the partially sighted students three categories of services:

1. Audio services: All document types listed in the previous section may be converted into mp3 files. Furthermore, RoboBraille is capable of converting well-structured

Word documents (doc, docx, xml) into Daisy Talking Books complete with audio. Similarly, RoboBraille can convert docx documents containing math (composed in MathType) into Daisy books with spoken math. The audio conversion services currently include high-quality voices for the following languages: Arabic, Arabic/English bilingual, Bulgarian, Danish, Dutch (male, female), English/American, English/British, French, German, Greenlandic, Hungarian, Icelandic, Italian, Lithuanian, Polish, Portuguese, Romanian, Russian, Slovenian Spanish/Castilian and Spanish/Latin American.

2. E-Book services: Most document types listed above may be converted into the popular EPUB and Mobi Pocket (Amazon Kindle) e-book formats. The service also supports conversion of documents into the EPUB3 format, including EPUB3 books with media overlay. Furthermore, EPUB may be converted to Mobi Pocket and vice versa. To accommodate users with low vision, the base line of the body text in an e-book may be raised to allow for more appropriate text scaling in mainstream e-book readers.
3. Accessibility services: Otherwise inaccessible documents such as image files in gif, tiff, jpg, bmp, pcx, dcx, j2k, jp2, jpx, djv and image-only pdf, as well as all types of pdf files can be converted to more accessible formats including tagged pdf, doc, docx, Word xml, xls, xlsx, csv, text, rtf and html. Word and rtf files are converted into text or tagged pdf files subject to the format specified by the user in the subject line, e.g., txt or pdf. PowerPoint files are converted into tagged pdf, web projects or rtf files. In addition to the traditional email-interface, RoboBraille is available via the web form at http://www.robobraille.org/

Other tools

Online translation: Google translator is very useful because in addition to the translation, Google software gives the correct audio pronunciation. https://translate.google.com. For mobile devices there are specific apps for both Apple and Android

How to use Google Translate:

- Choose the language (from native to foreign)
- Write the selected word or sentence
- The translation appears on the screen
- Click on the symbol of the microphone to hear the exact pronunciation
- Zoom the word to check and memorize the correct spelling

Online dictionaries accessible with Voice Over are:

- New Oxford American Dictionary – totally accessible
- Cambridge Advanced Learner's dictionary - Cambridge University Press - partially accessible with voiceover, totally accessible with screen magnifier

- WordReference Random House Learners Dictionary of America English and Collins Concise English Dictionary are free online dictionaries.

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