INCLUSION OF AUDIENCE
WITH VISUAL IMPAIRMENT

General Objective

The aim of this practical sheet is to present information about visual impairments and the challenges that people meet when working with online materials. In addition, this sheet will provide you with an overview of existing techniques and strategies to make online materials inclusive and accessible for people with visual impairments.

In this practical sheet, you will:

- ✓ Learn about the types of visual impairments
- ✓ The challenges people with visual impairments meet while accessing digital content
- ✓ Learn strategies and techniques to make online materials more inclusive and accessible for people with visual impairments

You will need:

- ✓ Computers with internet connection;
- ✓ Install the following tools:
  Web Developer for Firefox, Chrome and Opera -
  https://chrome.google.com/webstore/detail/web-developer/bfbameneiokkgbdmiekhjnmfkcnldhhm?hl=es
  WAVE Evaluation Tool -
  https://chrome.google.com/webstore/detail/wave-evaluation-tool/jbbplnpkjmmeebjpijfedlgcdilocofh

Firefox browser - https://www.mozilla.org/en-US/firefox/all/#product-desktop-release

Challenges and issues

Many people think of disability as a characteristic of a person. Let´s have a look at it from a different perspective.

Watch the video: https://www.ina.fr/video/PUB2867758021/institutionnel-diversite-video.html

In the world of the video, the person who is not using a wheelchair, who doesn´t know braille and sign language, is disadvantaged.

So, it is not about a person´s abilities or impairments, it´s about the design. Bad design is disabling. When design provides flexibility to meet all users´ needs, then it is enabling.

Disability is caused by a mismatch between the design and the person.

On one hand, web removes barriers to communication and interaction that many people face in a physical world. On the other hand, badly designed webpages, applications, technologies and tools create barriers than exclude people from using the Web.

That is why it is very important to design the web content in such a way so that anyone could access it despite of their abilities.

Nobody is prevented to obtain some kind of disability (temporal or permanent) at some point of their lives. Accessibility functionality is also used by people without disabilities (people using mobile phones, smart watches, smart TVs, and other devices with small screens, different input modes, etc; people with "situational limitations" such as in bright sunlight ; older people with changing abilities due to ageing) Therefore, web accessibility is essential for some and useful for all.

When we talk about visual impairments, they range from mild or moderate vision loss ("low vision") to substantial and uncorrectable vision loss (blindness").

Low vision can include poor acuity (blurry vision), tunnel vision, central field loss, and clouded vision. It affects about 4% of the world´s population. Some people have reduced or lack of sensibility to certain colours ("colour blindness"), or increased sensibility to bright colours.
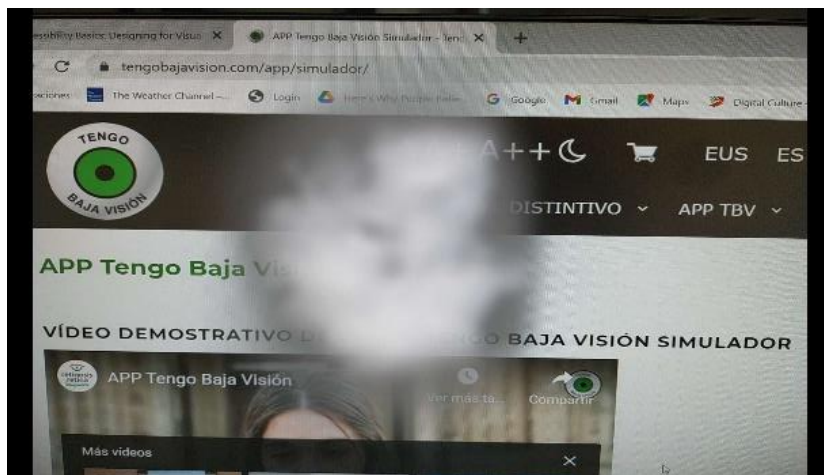
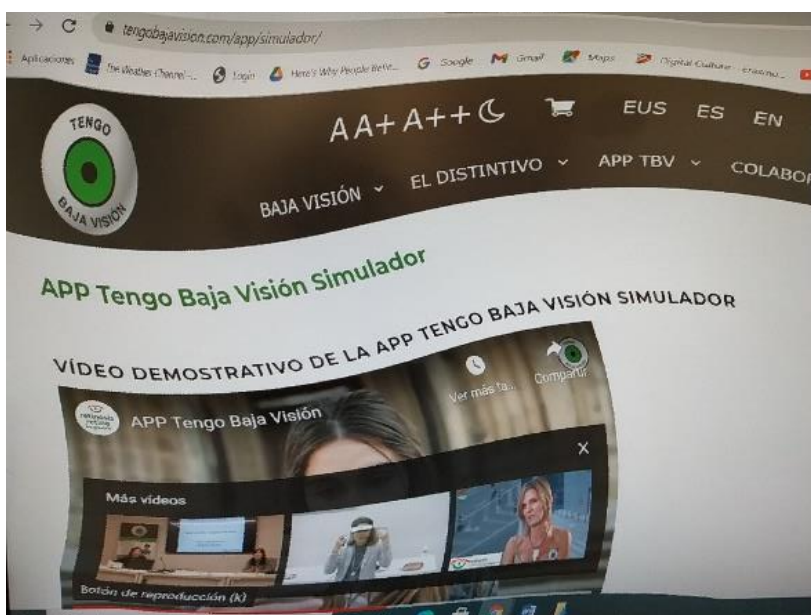Here are some examples simmulating low vision:

 - Loss of visual field
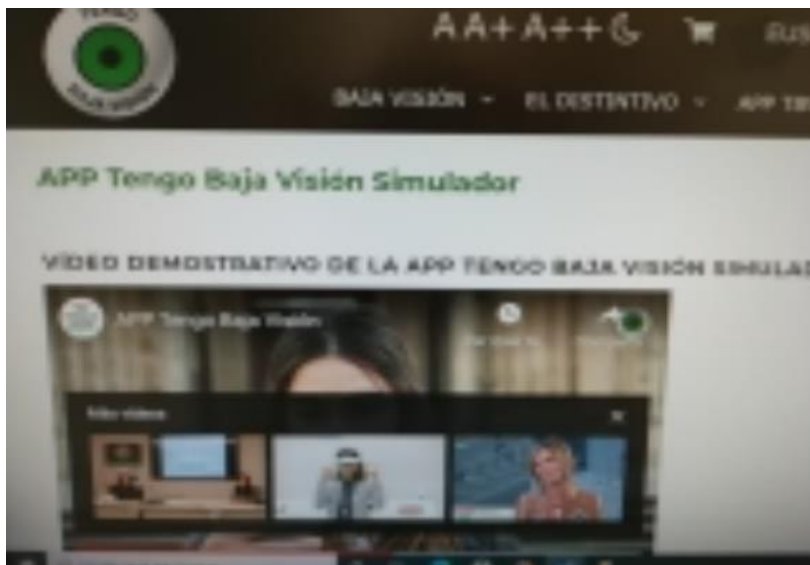
 - Loss of visual acuity

Erasmus+

- Loss of central vision

- Distorted vision

Depending upon the type of visual impairment people perceive the web differently. Some often use zoom what sometimes makes it easy to lose the track of an active item, or they need to scroll all ways in order to be able to read the text.

Some pages are not navigable for sighted keyboard users or people relying on screen readers (ex. when hoovering with the mouse some information appears over some items but not when we use a keyboard; the focus order is not logical, skipping links are missing; unclear links or buttons). Watch the following video to learn more about a screen reader and what challenges can be met when using it: https://www.youtube.com/watch?v=dEbl5jvLKGQ

Erasmus+

Adaptation

Though on the legal level there are no requirements yet for web pages to be accessible (except for the public institutions), 3WC has elaborated guidelines for web accessibility – WCAG (Web Content Accessibility Guidelines). These guidelines define four principles, known as **POUR**:

Perceivable – information should be presented in different ways so it could be perceived through sight, sound and touch, for example in braille, different text sizes, text-to-speech, or symbols, etc.

Operable –functionality should be used in different modalities, for example, keyboard, mouse, sip-and-puff, speech input, touch, etc.

Understandable – information and functionality is understandable, for example consistent navigation, simple language, etc.

Robust – content should be interpreted reliably by a wide variety of browsers, media players, and assistive technologies. The site visitors should be able to choose their own technologies to access, read and interact on the site.

Let´s have a look how do we apply these principles, taking into account visual impairments.

1. **Provide text alternatives.**

Images and multimedia are an obvious challenge for people with visual disabilities when not presented with text alternatives. Text alternatives are needed for images, buttons, controls and video. Images that are meaningful or perform an action (such as a link or button) must all have a text alternative that accurately and succinctly describes the meaning or purpose. Here is an example of an accurate alternative text
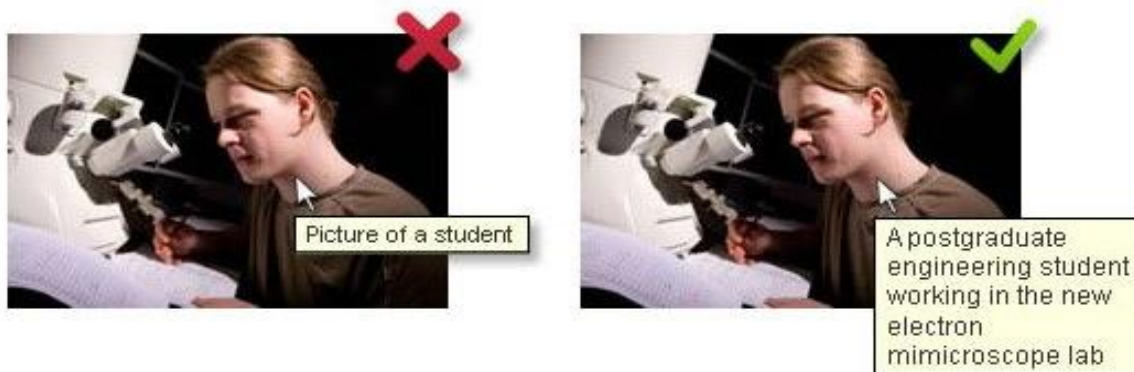
2. Provide alternatives for time-based media (video and audio files)

When it comes to videos, people with visual disabilities rely on Audio Description (AD) and text transcripts. AD is an additional commentary that explains what is happening on screen. It describes body language, expressions, movements, and on screen changes that are editorially significant.

Here is an example of accessible video that provides a descriptive transcript and a media player with accessibility support, including an interactive transcript: https://www.w3.org/WAI/perspective-videos/contrast/ (press "Enable Audio Description" to note the difference).

3. Create content that can be presented in different ways (ex. simpler layout) without losing information or structure.

Clear headings, lists, paragraphs, data tables, and form labels are key to understanding the layout and structure of content. Visual styling helps to distinguish between them for most of the users, but those relying on screen readers, need a relevant semantic tags that can be correctly interpreted by a screen reader.

Erasmus+
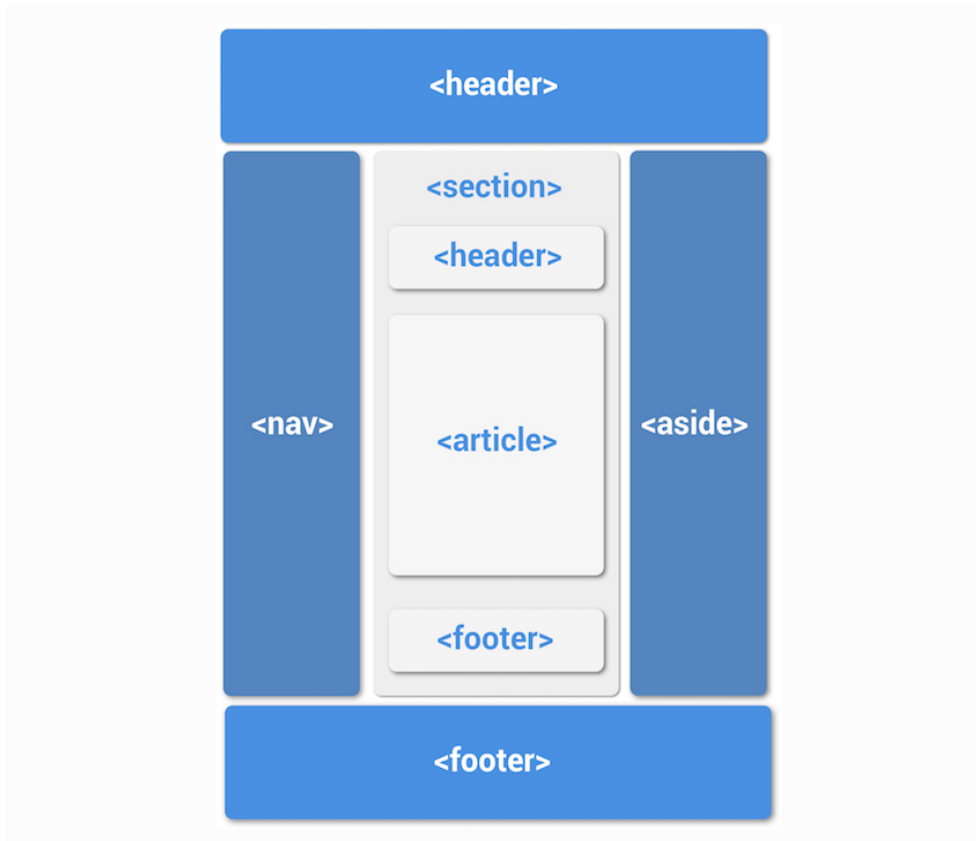
Example of a website layout using correct semantic tags

4. **Provide distinguishable content**

How can you achieve distinguishable content:

- Avoid using only colour to convey information
- Provide sufficient colour contrast between background and foreground
- Make sure no information is lost when users resize text or change text spacing

Here are some examples:

Erasmus+

Example: Using color to convey meaning

⊗ Color only

Required fields are in red

Name [_____]

Email [_____]

⊘ Color and symbol

Required fields are in red and marked with an *

Name [_____]

Email * [_____]

⊗ Insufficient

Some people cannot read text if there is not sufficient contrast between the text and background. For others, bright colors (high luminance) are not readable; they need low luminance.

⊘ Sufficient

Some people cannot read text if there is not sufficient contrast between the text and background. For others, bright colors (high luminance) are not readable; they need low luminance.

Practical examples and inspiration

Here are we offer you some tools and activities that you can use in order to check web accessibility.

Easy checks tools:

WAVE Web accessibility Evaluation tool. It can be used in different ways:

- Enter the location of the web page you want to test in the "web page address" field and run
- Install browser extensions so that you can launch the tool directly from your browser

You can use it to check the text alternatives of a web page, check the headings.

Web Developer for Firefox, Chrome and Opera -adds a toolbar button with various web developer tools.

Colour Contrast Checker - https://contrastchecker.com/ - is a tool where you can test colour contrast compliance with the WCAG. To run your test, select a foreground and a background colour. The results will automatically generate

and you will receive your scores. You will receive a pass margin or fail, depending on your selections.

Activity 1 – Check the headings:

Open the WAVE Web Accessibility evaluation tool https://wave.webaim.org/ , type the web page address in the form field and press enter. A web page will show up in browser with little icons on it:
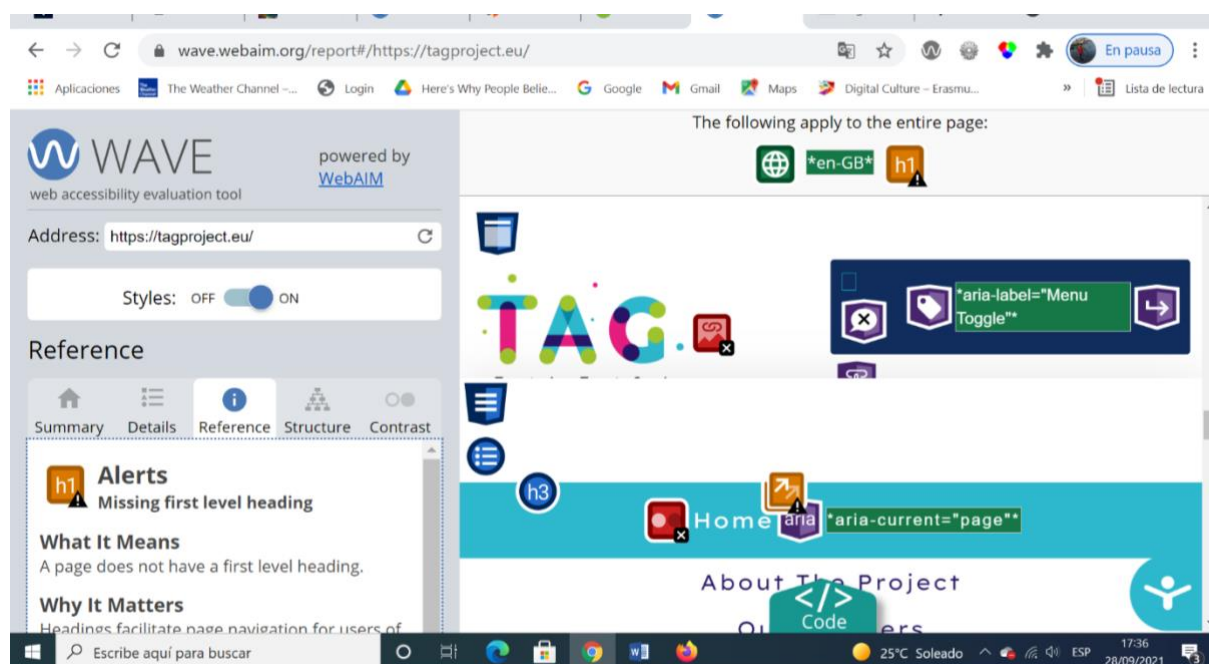

Anything that looks visually like a heading should have a heading icon (H1 WAVE Tool Icon, H2 WAVE Tool Icon, H3 WAVE Tool Icon, etc.) before it.

Activity 2 – Check text alternatives

Now, let´s use a Web developer tool that you added to your browser.

Choose any page you would like to check for text alternatives for images. Now use the Web Developer Toolbar to show the alternative text for all the images on this page: Web Develop Toolbar > Images > Display Alt Attributes.

Erasmus+
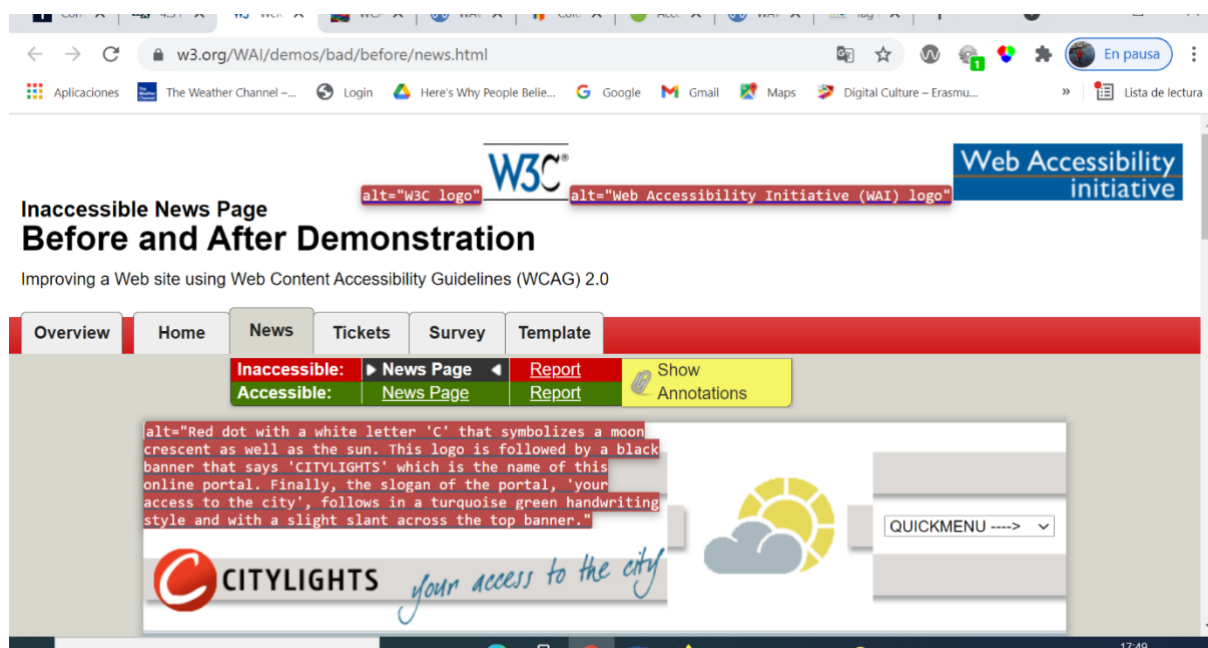
Activity 3 - Check text resize

Increasing font size functionality is only available in FireFox web browser.

1. Set zoom to text only.

2. From the menu bar, select View > Zoom > Zoom Text Only.

3. Increase zoom to 200%.

4. To incrementally increase zoom with the keyboard:

o Windows, press Ctrl+[+] (hold down the control key and press the + key at the same time).

o On Mac, press command+[+] (hold down the command key and the + key at the same time).

5. Usually 4-6 key presses gets to 200%.

6. To check or set the zoom percent from the menu option:

o Click the menu button.

o Firefox customization menu zoom percent settings.

- In the customization menu, click the + button to zoom larger. The number before the + button is the current zoom percent.

- To confirm that you have text-only zoom set from step 1, make sure that only the text is getting larger, not the images.

Additional resources

https://www.w3.org/WAI/people-use-web/user-stories/#shopper – testimonies of web users with some kind of disability

https://www.youtube.com/watch?v=5TNU_t-9w1A – Accessible vs. Inaccessible

https://www.youtube.com/watch?v=hs8sykCaf3E – POUR: the four principles of accessibility

https://www.youtube.com/watch?v=3f31oufqFSM – Web Accessibility Perspectives

https://www.youtube.com/watch?v=JPCkZTwUFMw