

**E**  **Qui-T** European Quality Development System  
for Inclusive Education and Teacher Training



**Criteria Catalogue -  
Recommendations**



This work is part of the Erasmus+ project [EQui-T](#) (ERASMUS-EDU-2022-PEX-TEACH-ACA 101104449)

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The project EQui-T has been funded with support from the European Commission under the Erasmus+ Teacher Academy Programme.



**Co-funded by  
the European Union**

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## Introduction

This Criteria Catalogue is designed to support you in evaluating the quality of **Open Educational Resources (OER)** that you use or create, with a special focus on inclusive education.

We developed this material to support teachers in making sure the OER used or created meets the needs of all students. Whether adapting existing materials or designing new ones, this tool is here to ensure that resources are accessible, adaptable, and support all learners.

The catalogue is structured around four core dimensions:

1. **Inclusive didactics**
2. **Technical & Technological Dimension**
3. **Diversity-sensitivity**
4. **Accessibility**

For each dimension, you will find:

- **concise, practical recommendations**
- **short examples**
- **a downloadable checklist to support reflection and implementation**

**The EQui-T Team wishes you good work with your OER!**

## 1. Inclusive didactics

Inclusive education relies on resources that support **differentiation**, foster **varied pedagogical approaches**, and facilitate **flexible learning formats** such as individual, partner, or group work.

In this section, you will find some recommendations for creating didactically sound materials to support inclusive education that:

- enable differentiation,
- foster the implementation of a variety of pedagogical approaches based on level-oriented didactical models for central domains of learning,
- allow individual, partner and group work in versatile prepared learning environments,
- offer a structure for systematic selection of topics and levels,
- are open to the interests of the students,
- include creative learning processes (Prengel, 2013).

	RECOMMENDATION	EXAMPLE
<b>OBJECTIVES AND AIMS</b>	<p>Provide information on the learning objectives and aims on the cover page of the resource.</p> <p>Ensure that all learning objectives are achievable, measurable, relevant, clearly stated, and concise for learners and other teachers using your OER.</p>	
<b>LEARNING GOALS FOR DIFFERENTIATED TEACHING</b>	<p>Personalise, customise and adapt your OER for optimal learning outcomes, which may not be the same for everyone.</p>	<p>Determine individualised learning objectives; make the OER content accessible according to the different learning needs of students with and without disabilities (see Dimension 4).</p>

## RECOMMENDATION

## EXAMPLE

Ensure that the objectives and contents of an OER are based on the age and the entry-level competence of the learners.

If an OER is designed for young children, it should have child-friendly visual content, such as drawings and simpler text. If the same OER is intended for older children, it should include less visual content and include more content for adults, such as photographs. The text may require a higher reading level.

While creating or using OER, take the needs of your students into account (including learners with disabilities and specific educational needs as well as high performing students), particularly in the design and methodology of the OER. Taking students' needs into account from the beginning can prevent the need for adaptation afterwards.

Try to develop a single version that is accessible for all students considering the diversity of your students. Otherwise, create differentiated versions tailored to the students' needs (see Dimension 4).

## METADATA

Include instructions for the learning activities and explain the methodologies.

State for which target group of learners the resource has been made, as well as the prerequisite knowledge needed.

Note the estimated time needed for completion of the material (exercise sheets or lesson plans) (and prepare extra material and activities for the faster students).

Make sure that exercises and activities are supported by answer keys or scoring guidelines.

## LANGUAGE

Ensure that the language is clear, consistent, concise and readily comprehensible for other teachers and practitioners in the educational field.

## UP-TO-DATENESS

Make sure that contents are current, updated or timeless. If necessary, update them.

## RECOMMENDATION

## EXAMPLE

### STRUCTURE

Ensure that the OER provides a sound structure for knowledge and skills development. Therefore, the content should be structured in logical manageable sequences of modules and/or lessons/sections.

### DIDACTICS

Link new content to the students' previous knowledge, skills, and experience.

Ensure that the OER enables the transfer of new knowledge and skills to different tasks, problems or contexts to consolidate their learning or construct personal meaning.

Associate theoretical constructs and content with examples that are close to the students' lives so that they can be transferred to everyday situations.

If it enhances the students' understanding of the content, present the content of the OER in various formats (texts, graphics, pictures, etc.).

Customise the OER according to your students' living environment.

Engage in exercises with a familiar purpose, such as going shopping, which require mathematical calculations. Especially for students with learning disabilities.

If appropriate, show a video, discuss the content, and provide hands-on activities.

If an OER includes a reading on agriculture that mentions crops such as wheat or maize, but your students live in a region where olive trees and vineyards predominate, you could modify the resource to include examples of these local crops. This makes the content more meaningful and applicable to their reality.

### PARTICIPATION

Ensure that learning activities provide opportunities for interaction that support active learning.

In a Think-Pair-Share activity, students reflect on a question, discuss with a partner and share with the class. This promotes interaction, critical thinking and active learning.

## RECOMMENDATION

## EXAMPLE

When possible, create or adapt the OER to promote collaborative work.

Ensure that the OER facilitates participation of all students, according to their capabilities and abilities, creating learning opportunities for all.

When planning group activities, consider how the group compilation (more heterogeneous or more homogenous) can enable the best possible learning outcome for all students, taking into account the academic and social competences of all students.

### PRACTICAL RELEVANCE

Create or use OER that also supports the acquisition of soft skills, such as cooperation, decision-making, problem-solving, critical thinking, respect, non-violent communication, managing emotions, and stress.

Develop an OER to teach stress management or public speaking.

### REAL-LIFE RELEVANCE

When possible, create or use OER that promotes healthy lifestyles, such as nutrition, mental health, sleep hygiene.

### MOTIVATION

Make sure that the OER is engaging, attractive and appealing, as it may have a positive impact on student motivation.

Ensure that the OER gains and maintains students' attention and interest.

Use humour (if appropriate), use examples from students' daily life, enable playful learning, include students' hobbies & interests, etc.

### FORMATIVE EVALUATION

Include formative observation and summative assessment to ensure that you can follow the learning process of the students.

Students watch a video on the water cycle. The teacher observes discussions (formative) and assigns a short quiz (summative) to check understanding.

## 2. Technical and technological dimension

One key characteristic of Open Educational Resources (OER) is their digital nature, therefore technology is a fundamental element.

In this section, we will address the **technological basis for the creation, use and re-use of OER**:

- the **technical characteristics** of the software that supports open access to accessible and inclusive OER,
- the **platforms and repositories** for their storage and dissemination,
- their legal conditions of use related to their intellectual property **licences**.

	RECOMMENDATION	EXAMPLE
<b>INDIVIDUALISED LEARNING</b>	Critically consider if the technological tools and resources used in the OER facilitate the achievement of the learning objectives/outcomes.	
	Ensure that the technology tools and resources used in the OER support learner participation and active learning.	Use communication tools such as discussion forums, collaborative learning tools, self-assessment tools, etc.
	Consider if all your students have access to the technology required to use your OER.	When choosing your OER, consider whether a computer, internet access and/or a printer are available.
	Guarantee that students with special needs can also easily access the technologies required to use the OER.	Make sure a screen-reader software is available for visually impaired students, or provide an ergonomic computer mouse for students with limited mobility.
<b>ADAPTABILITY</b>	Ensure that you create OER that can be adapted to the different learning environments: in classrooms, on computers or other devices (tablets, electronic whiteboards, etc.), e-learning systems, etc. Ensure that OER can be modified, updated and adapted by others according to their students' interests and needs.	Provide the OER in an adaptable file format (e.g. word), an additional plain text file or the source code that facilitates its modification.

	RECOMMENDATION	EXAMPLE
<b>SECURITY</b>	Develop the OER taking into account all possible electronic security measures to ensure the security, integrity and validity of the information.	Use password protection, encryption, secure platforms, or learning management systems, etc.
<b>ASSISTANCE</b>	Verify that links to or explanations of technical assistance are available in the OER.	Offer solutions to potential technical issues in OER and provide links to technical assistance if needed.
	Ensure that there are help functions that identify the most common user problems and their solutions.	Make certain that the user interface includes mechanisms (e.g., FAQs or help documentation) for users to troubleshoot any problems they may encounter while using the OER. Additionally, the help should be easy to locate, clearly outline the necessary steps, and not be overly extensive.

<b>USABILITY</b>	RECOMMENDATION	EXAMPLE
<b>VISUAL DESIGN</b>	Ensure that the visual design of the user interface is clear and coherent to facilitate learning and efficient mental processing. Avoid visual noise and unnecessary information overload.	Use short headings, legible font, left justification, balanced colours, etc. Avoid using distracting elements such as decorative figures, unnecessary icons, and irrelevant colours that do not contribute to the learning context.
	Make the design of the OER intuitive.	Use a visual design that learners recognize and are familiar with. For instance, incorporating clear icons or images that convey their purpose unambiguously, such as using a trash can to represent the delete function.
<b>CUSTOMISATION</b>	Provide the user with the option to customise the interface, e.g. the background colour, to enhance the contrast, readability and usability.	Use dark colours for the text and light colours for the background. You can check the contrast of colours with tools such as <a href="#">Color Contrast Analyzer</a> .

USABILITY	RECOMMENDATION	EXAMPLE
<b>FONT</b>	Verify that fonts are legible and visually appealing or give the user the possibility to customise the font type, colour and size.	<p>For example Times New Roman, Georgia, Arial, Calibri, Verdana, Tahoma.</p> <p>The minimum font size is 10, although it is advisable to use 12 or 14 for students with visual or cognitive impairment.</p>
<b>FORMAT AND DESIGN</b>	Verify that the design of the user interface should reflect the hierarchy of information.	Design the user interface elements (titles, buttons, links, menus, etc.) to allow the user to understand the information and guide him/her through the interaction with the OER.
<b>NAVIGATION</b>	Ensure that navigation is predictable and efficient.	Use descriptive names for navigation elements. Employ a visual design for navigation elements that clearly distinguishes them from the rest of the user interface.
	Verify that navigation is logical.	Maintain a logical order for the navigation elements (links, navigation bars, menus, etc.) and keep them in the same positions. For example, navigation bars can be placed at the top or bottom of the screen. Additionally, the number of items in a navigation menu should be between 6 to 8.
	Make certain that navigation guidance systems are integrated into the OER site so that learners know where they are in relation to the rest of the site.	Include breadcrumb trails, progress bars, educational paths, site map, etc. in the user interface.
	Confirm that undo navigation actions are available.	Provide the option to return to the previous page or to the home page from any page.

A licence defines what you and other teachers are allowed to do with the material. Licences specify whether materials can be reused, revised, remixed, or redistributed.

## RECOMMENDATION

## EXAMPLE

### OER USE

Ensure that the OER is offered under an open licence, allowing free use or open code, and that its conditions of use are clearly specified within the OER.

**Look for a statement:** check for a licencing statement in the material. It may be at the beginning, end, or in the metadata of digital files.

**Search for symbols or logos:** look for Creative Commons logos (e.g., CC BY, CC BY-SA) or phrases like "licenced under..." followed by a licence type.

**Check the metadata:** for online resources, check metadata (e.g., the file's "properties" or "info" tab) for licencing information. Some websites also specify licences in their footer, or download or privacy policy sections.

### OER DEVELOPMENT

Apply the licence by:

- clearly stating the licence on your material:  
*"[write here the name of your OER]" by [write here your name] is licenced under [licence name] via [link to the website].*
- download the [licence logo](#) from this website and put it on the title page, the end of the footnote of your OER

Here is an example of how to put a CC-BY licence on your work:  
*"Recyclingkreislauf"* by Jessica Berger is licenced under a [CC-BY 4.0 International](#) via [Flickr](#).

Verify that the creation and inclusion of various elements (texts, videos, audio files, and other materials) comply with the OER licence or other similar/compatible licences, such as Creative Commons or the public domain.

Make sure that all resources and materials used are appropriately cited and referenced.

Ensure that texts by other authors included in the resource are properly acknowledged with the correct author citation. Do not use copyrighted material and avoid plagiarism.

Include the authorship and licence of texts, images, videos, etc. in the caption.

Credit images, illustrations, videos, etc. by including the authorship and licence in the caption.

*"[illustration name]"* by *[author name]* is licensed under *[licence name]* via *[website link]*.

## DISTRIBUTION METADATA

Platforms, so-called OER-repositories, are crucial for students and teachers to find and use your materials. Repositories might simplify the search for OER by search masks, filtering and tagging. You can help teachers locate OER that are accessible to all learners, including those with disabilities and those with diverse learning needs and preferences, with metadata that include accessibility criteria or customisable criteria. The term metadata refers to a collection of data that describes and conveys information about the purpose, content, and other aspects of OER.

### RECOMMENDATION

### EXAMPLE

#### METADATA ATTRIBUTION

Ensure that a wide audience can find the OER by having appropriate and relevant metadata associated with them.

Use meaningful and clear information to facilitate its subsequent localisation. For example:

1. Basic Information (title, author, description, language, date of creation)
2. Educational Information (subject, educational level, learning objectives)
3. Licencing Information
4. Technical Information (file format and size)
5. Keywords/Tags
6. Usage Information (accessibility features)

#### ADAPTED VERSIONS

Make certain that there are clear procedures/processes in place for end-users to submit revised or adapted versions of downloaded OER.

Offer options for uploading revised or modified versions of OER. For example, you can use the [eXeLearning authoring tool](#).

### 3. Diversity sensitivity

By taking into account students' different social, economic, and cultural backgrounds, you can create **diversity-sensitive OER**.

Please consider the following recommendations to ensure that your materials do not reinforce or suggest prejudices and stereotypes regarding age, culture, ethnicity, sexual orientation, gender, disability, socio-economic status and religion.

In this dimension, a mindful and thoughtful approach to diversity, regarding role models, gender stereotypes, norms and values, is required. It is important to ensure that the aim here is not to reverse stereotypes and prejudices (e.g. overrepresentation of men or women), but to strive for balance and to encourage questioning of stereotypes. Even if it will not always be possible to implement all of the following recommendations, the goal is to use them in the best possible way.

To provide more freedom in implementation, the following openly licensed image pools could be used: [cocomaterial.com](http://cocomaterial.com), [arasaac.org](http://arasaac.org) or [search.creativecommons.org](http://search.creativecommons.org)

**Note:** The following recommendations focus on selected aspects of diversity and are intended as exemplary. They can be adapted or extended to address other dimensions of diversity as relevant to your specific teaching context.

DIVERSITY-SENSITIVITY	RECOMMENDATION	EXAMPLE
	<p>If possible, the materials should reflect the diverse body of students in class. Offer variety in the illustrations of characters, lifestyles, language, etc.</p>	<p>For example, a comic could include superheroes with different body features and culturally diverse backgrounds.</p>

Ensure that there is no predominance of one gender in visual representations.

In a picture of a group of 4 students, there could be 2 girls and 2 boys. Not in each picture are boys in the centre or in front of the picture, and the girls are behind them or to the sides, but vary the picture you present.

If you cannot find a picture with an open licence respecting this criteria, try using artificial intelligence tools.

Avoid gender stereotypes in texts or images when depicting professional activities or social roles.

Avoid undue use of the combination of male doctors and female nurses or stay-at-home mothers and working fathers.

Make sure not to use sexist language and images in terms of clothing depicted, accessories, attitudes, hobbies, etc.

Girls in a photograph could appear both in skirts and trousers, with short and long hair. Avoid stereotypes, e.g. boys always play football and girls always wear pink.

Avoid using masculine generalisations and singular masculine terms to refer to people of different genders.

Use nouns that are not gender specific.

Instead of saying, "Each student should complete his homework," say, "Each student should complete their homework" or "All students should complete their homework."

Use "officer" instead of "policeman" or "policewoman".

Ensure that contributions made in different fields (e.g., art or biology) by women and men are equally visible.

Offer activities and examples that promote the critical analysis of gender inequalities. Discuss and analyse gender roles in different contexts, such as household responsibilities, careers, or media representation.

For example, students can explore why certain tasks, like cooking or caregiving, are often associated with women, while others, like home repairs or financial management, are linked to men. Encourage students to question these stereotypes, share personal experiences, and propose ways to challenge and redefine traditional gender roles.

## CULTURAL-SENSITIVITY

### RECOMMENDATION

### EXAMPLE

Ensure that there is variety in the visual representation of people (e.g. different physical characteristics) so that each student feels represented.

If there are people of colour in your class, include different graphic representations.

Use examples in the text or other media from various cultures and traditions.

For example, traditional music or preparing food for Christmas and Eid.

Provide intentional possibilities to get to know different cultures.

Include activities regarding traditions from other countries, which might occur around the same time of the year. For example, there is Christian Lent and Muslim Ramadan.

Ensure that content is objective as much as possible and respectful, free from ideological bias.

For history lessons, make sure to include reading texts that show the points of view of the different populations involved.

Ensure that contributions made in different fields of knowledge by people from different cultures are equally visible.

When applicable, name different people related to a topic from different ethnicities (e.g., Nobel Peace Prize winners).

Ensure that content, visuals, and instructional strategies are culturally sensitive considering differences of students according to their ethnics, religions and cultures.

Ensure that the language of the OER is accessible to all students: try to take into consideration their family language and familiarity with the teaching language or multilingualism.

If you have students who speak Spanish and Arabic, translate the OER into both languages, adapt the difficulty of the language or add an automatic translation tool (e.g. Microsoft Immersive Reader, Google translate) to the OER.

## SOCIOECONOMIC STATUS

### RECOMMENDATION

### EXAMPLE

Highlight stories of individuals achieving success or happiness through various means, not solely through their socioeconomic status. Talk with your students about privilege awareness.

Use images or illustrations that do not only imply wealth or privilege (e.g., luxurious homes, expensive brands). Instead, choose visuals that reflect diverse and everyday environments (e.g., public parks, shared spaces, or community settings).

When referring to products in your materials, avoid luxury brand names or expensive items.

Example to avoid: “John bought a pair of (brand name) sneakers for €120.”

Alternative: “John bought a pair of sneakers for €50.”



## 4. Accessibility

### 4.1. Technological Accessibility

This chapter includes guidelines for the creation of accessible multimedia: text, pictures, audiovisual media, video games, websites and web-based applications based on the [Web Content Accessibility Guidelines](#) (WCAG). For a detailed list, please refer to the [EQui-T Comprehensive Framework](#)

TEXT	RECOMMENDATION	EXAMPLE
	<p>For students who might need it, provide different versions of the document, adjusting spaces between letters, words, and lines.</p>	<p>You can enlarge the space between letters, e.g., in Word, by clicking on “font”, “advanced” and then “spacing”. <a href="#">Here, you can find further information.</a> You can also use the <a href="#">immersive reader.</a></p>
	<p>Provide a way for identifying specific definitions of words, phrases or abbreviations that are new to students or used in an unusual way (e.g., idioms and jargon).</p>	<p>If needed, add a section with a dictionary of terms, or include the definition of a word close to it (in the same line, underneath it, in parentheses or as a pop-up) the first time it appears.</p>
	<p>Note that the structure, such as the reading order, and interactive elements can be clearly recognised and displayed by assistive technologies.</p>	<p>The labels for each checkbox must be identifiable by assistive technology, for example, by a screen reader.</p>
	<p>Ensure that information is conveyed in multiple ways, such as using text labels, patterns, auditory cues, colours, shape, size, visual location or orientation.</p>	<p>Instead of using only a red colour to indicate that certain fields in a form are mandatory, also use an asterisk to mark them.</p>

## TEXT

### RECOMMENDATION

### EXAMPLE

Make sure that the content is easily readable in both landscape and portrait display orientations, unless a specific orientation is essential.

Maintain consistency between icons and text with the same purpose throughout the OER.

When creating a list, use the corresponding function.

Use the list function instead of adding symbols or characters, since screen-readers, for example, might not recognise it as a list.

Ensure that text can be resized without assistive technology up to 200 percent, without loss of content or functionality.

For example, text can be enlarged by using Control+ in the browser or by changing its size in the settings of the device used to run the application.

To ensure that the language of the content can be identified by assistive technology, indicate the language at the beginning and when it changes, so the screen reader can read it properly.

## IMAGES, TABLES & GRAPHS

### RECOMMENDATION

### EXAMPLE

Use clear and easy-to-understand images with appropriate quality, size, resolution (number of pixels), brightness, and so on. Avoid blurry images.

If the text explains the water cycle, include a clear diagram showing evaporation, condensation, precipitation, and collection, with labelled arrows and simple visuals to aid understanding.

Describe all images with alternative text so that they can be read by a screen reader.  
The alternative text can be added, for example, by right-clicking on the object and “Edit Alt Text”. Further details can be found [here](#).

An alternative text for the above image could be: ‘Water cycle depiction’.

## IMAGES, TABLES & GRAPHS

### RECOMMENDATION

### EXAMPLE

Ensure that there is sufficient contrast between the background and the foreground in the used images.

If there is a background of sky and mountains behind the cow and grass, it should be clearly distinguishable.

Do not include text in images.

Instead of adding text inside the image, write it down as a title or in a separate paragraph.

When using tables, make sure that they are well-structured and clearly described

Include a header row and keep them simple by avoiding as far as possible empty, combined, divided or nested cells.

Where appropriate, use alternative means (e.g. pattern) rather than colour to differentiate content and functionality.

When presenting graphs, instead of using colours like green and red, use dots and stripes to distinguish them, to provide clarity also for students with colour blindness.

Avoid adding tables in the form of an image/screenshot, but create the table directly in the document.

## AUDIO

### RECOMMENDATION

### EXAMPLE

Make sure that the sound is high-quality in terms of pitch, duration, intensity and tone. If there is the need to, adapt the audio by e.g. reducing background noise

You can adapt audio for example by using the software [Audacity](#).

Avoid background audio or lower it.

There is no background music when someone is talking.

Verify that the voice in the audio is slow and not too soft or loud.

If you record an audio track yourself, ensure that the voice in the audio has good pronunciation and vocalises well. Allow room for pauses, when necessary. Leave your audience enough time to understand the information before providing new information.



## AUDIO

### RECOMMENDATION

### EXAMPLE

Provide tools to pause or stop the audio, which are easy to find and use. If it is possible, include separate volume controls or mutes for effects, speech and background/music.

Make sure there are buttons to stop, pause, change the volume, etc.

If you have students with hearing impairment, include a textual transcription of the audio. See dimension 5.3 (subtitling and audio description). Also, make sure that the students have control over the textual alternatives.

This transcription can be useful for learners who cannot listen to the audio, and can also be translated to other languages or even printed in Braille.  
Make sure there are buttons to show/hide textual alternatives.

## VIDEO

### RECOMMENDATION

### EXAMPLE

Ensure that the video and sound are clear and of high quality.

Provide synchronized alternatives for the video.

Use subtitling, audio description, full transcription or sign language (SL).

Provide textual description and transcription of the video.

Ensure that students have control over the management of the video reproduction and its alternatives.

There are buttons to stop, pause, move forward and backward the video. There are buttons to show the alternatives.

Ensure that there is sufficient contrast between the background and foreground of the video.

Avoid slow and fast motion.

Avoid designing content in a manner that is known to trigger seizures or physical reactions.

Refrain from using flashing elements.

Maintain coherence in the appearance (form, size, colour, location, etc.) of the elements that have the same functionality (links, icons, buttons, etc.) throughout the website, the application or document.

For example, if the icon to search is a magnifying glass, it should be the same throughout the OER.

Make interactive elements, such as hyperlinks, buttons, lists, menus, and dialogue boxes, stand out visually. In the case of hyperlinks, clarify where they lead to.

Underline the text of the hyperlinks, place it in a box.

Make sure that interactive elements and virtual controls are large and well-spaced, particularly on small or touch screens or can be adjusted in size to improve learners' interaction.

The size of a button on a mobile phone screen should be at least 9mm.

Provide options to pause, stop, or hide any moving, blinking, auto-updating, or scrolling information where possible when it meets any of the following criteria: (1) it starts automatically, (2) it lasts longer than five seconds, or (3) it is displayed simultaneously with other content.

If a page includes an auto-playing video with sound, provide clear controls to pause, stop, or mute the video. For instance, a video demonstrating a science experiment should allow learners to start it manually and adjust settings as needed.

Guarantee that all content and functionality with different controls are available using assistive technologies such as screen readers.

Confirm that the elements of the learning environment (i.e., buttons) change their state and position only when necessary, as this helps prevent confusion.

For students with different impairments, it is easier to find the "return"-button if it is always placed in the left bottom corner.

Provide students with opportunities to track their progress, for example, by indicating which parts have been successfully completed.

A scoring system with stars or a progress bar in each exercise can help students understand the level of completion of a session.

Provide students with the possibility to save their progress so they can continue working at a later time.

Use programs that enable pausing, automatically or manually save the work in progress, avoiding the need for learners to re-enter all information.

Include a mechanism for reviewing, confirming, and correcting information before learners finalise data submission.

For example, before submitting the answers, the application should ask the student for confirmation.

Ensure that each section or screen of the website or application includes a clear and meaningful title or heading, and that the order is intuitive, guiding the student through the OER step-by-step.

For example, in a form, the fields should be arranged in the order they are meant to be completed.

Ensure that every digital educational material's functionality is easy to handle through standard input devices (keyboard, mouse) and also through non-standard ones using additional assistive technology (buttons, emulators, etc).

Reduce accidental activation of controls.

For example, for interface elements that respond to a single tap or long press, the corresponding event is triggered when the finger is lifted while still within that element.

Make sure that forms are easy to fill out and provide tools to assist learners in completing them, along with options to prevent and/or correct any errors during the process.

Word predictors, along with the use of lists and checklists with default values, reduce the need for typing and, consequently, minimize errors.

Provide officially supported assistive technologies, which are already fully accessible. Ensure that any third-party tools used are accessible.

e.g. software (eye-tracking)

Ensure that the name, role, states, properties and values of all user interface components (buttons, menus, form fields, links, components generated by scripts, etc.) can be programmatically set and that the notification of changes to these items is available to assistive technologies.

A button to start an exercise should be labelled "start" and its internal name should also be "start", not "button1".



Check that the game is accessible for all students in your class.

If you use <https://genially.com> to create a game, then you can use all the accessible settings offered.

Check that the game is easy to learn but challenging to master.

Several difficulty levels can be provided.

Ensure that the game does not put an unnecessary burden on the player.

The game is adapted to the cognitive level or the motor skills of the learner.

Make sure that the players feel that their actions are meaningful. The actions must have a direct effect on and provide immediate feedback so that the players have a sense of control and influence on the game world.

The game only continues when the player presses a button, in order to activate the game, start a chapter, sound starts playing, etc.

Check that game controls are consistent, intuitive and naturally mapped (i.e., controlled through the most conventional game keys).

The right arrow button or key moves the character to the right.

Offer a tutorial to introduce all general controls necessary to make progress in the game through a series of small tasks.

Before entering the first chapter, the player can learn how to move in the game world step by step.

Check that the challenges in the game are in order so that players apply the knowledge acquired in previous problems to solve the next ones.

First show how you can make a character jump, before putting it in a situation where it has to jump.

Provide information such as descriptions of situations or clues “On Demand” and “Just in Time”.

Do not reveal what is going to happen unless the player asks for it or is in a scene that requires instructions.

Make sure that the goal(s) of the game can be clearly understood by all students, with and without disabilities.

Scores can be displayed as a number, with one or more stars, or with a progress bar.

Use stereo, binaural or surround sound for the localisation of game objects for players with visual impairments. Select distinctive sound and music for all interactive objects and events.

Stereo audio provides a sense of directionality, binaural audio goes deeper into replicating perception, and immersive audio surrounds the listener with a three-dimensional sound environment. Each character can have a distinctive sound when you touch or move it.

Ensure that the game story encourages immersion and identification if the game has a story component.

The background can be somewhere known or meaningful. Avatars can be used for the players to associate/identify them with.

## 4.2. Cognitive Accessibility

Cognitive accessibility means creating an environment where students with diverse levels of cognitive abilities can fully understand, engage with, and benefit from educational materials and activities. This includes using **clear instructions, visual aids, simplified language, flexible teaching methods, and supportive technologies** to ensure all students can participate and succeed in their learning.

For students with literacy difficulties (especially in reading comprehension), with intellectual disabilities and with a first language other than the one used in class, educational content can be made accessible through the use of **simplified or “Easy Language”** or through pictograms for students with severe communication difficulties.

These methods help to bridge communication gaps and promote inclusion in educational settings.

### 4.2.1. Easy language

“Easy Language” is a method of writing or speaking designed to make information clear and easy to understand. It uses **short sentences, simple vocabulary, and a clear structure**, often **supported by visual aids**, to ensure accessibility for a wide audience.

See here as an example the Convention on the Rights of Persons with Disabilities (United Nations, 2006) in Easy Language: [LINK](#)

To translate your educational material into Easy Language, follow these recommendations.

VOCABULARY	RECOMMENDATION	EXAMPLE
<b>SIMPLE AND CONSISTENT VOCABULARY</b>	Use frequently used and simple vocabulary. Consistently use the same word to refer to the same object or fact throughout the text.	
<b>ABBREVIATIONS</b>	Avoid acronyms and abbreviations; if unavoidable, explain them.	
<b>EXPLAIN DIFFICULT WORDS</b>	Avoid using too many abstract, technical, or complex terms. If they are essential, provide an explanation.	
<b>GLOSSARY</b>	<p>Include a glossary. Use glosses – brief explanations placed near the word or expression.</p> <hr/> <p>For long texts, create a dictionary. Underline dictionary entries in the text. Always explain how to use the dictionary.</p>	

SYNTAX AND GRAMMAR	RECOMMENDATION	EXAMPLE
<b>SENTENCES</b>	Create short and simple sentences regarding grammar and syntax depending on the language. If possible, write only one idea per sentence and line. Do not write more than two ideas per sentence.	For German and English follow the “Subject + Verb + Object” order.
<b>PARAGRAPHS</b>	<p>Use paragraph breaks to divide sentences or phrases that have different ideas.</p> <hr/> <p>Do not split paragraphs. If it does not fit completely on a page, let it begin on the next page.</p>	
<b>ACTIVE VERB FORM</b>	Use the active verb form.	

SYNTAX AND GRAMMAR	RECOMMENDATION	EXAMPLE
<b>AFFIRMATIVE SENTENCES</b>	<p>Use affirmative sentences.</p> <p>Exception: when a negative sentence is clearer and more direct. For example in simple prohibitions like "no smoking."</p>	
<b>VERBS</b>	<p>Prefer simple verb tenses. Use the present when possible.</p>	
<b>PRONOUNS</b>	<p>Avoid replacing names with pronouns.</p> <p>Exception: the reference can be easily identified (for example: Elisa plays with the ball. She wants to be a football player).</p>	
<b>NUMBERS</b>	<p>Write numbers in digits.</p> <p>Write large numbers with many digits in words, use qualitative comparisons, or replace them with terms like "several," "thousands," or "millions" when possible.</p>	

DESIGN	RECOMMENDATION	EXAMPLE
<b>BACKGROUND</b>	<p>Do not use a background that makes it difficult to read the text. Use a flat colour that has a good contrast with the text.</p>	
<b>COLOURS</b>	<p>Avoid using many different colours. Use colours sparingly and, if possible, not as the only distinguishing feature.</p> <p>Ensure sufficient contrast (use a contrast calculator).</p> <p>Avoid red-green contrasts.</p>	
<b>FONT</b>	<p>Sans-serif fonts like Arial, Calibri, Cambria, OpenDyslexic or Verdana are generally easier to read due to their clean lines and lack of decorative flourishes, as well as being licence-free fonts.</p>	



DESIGN	RECOMMENDATION	EXAMPLE
	Use a font size between 12 and 16 points. The standard size is 14, but the optimal size may vary depending on the font type.	
<b>FONT STYLE</b>	<p>Avoid using italics, underlines, shadows, outlines, and embossing.</p> <p>Use bold only to highlight important words or words explained in glosses or the glossary.</p> <p>In languages that use uppercase and lowercase, do not write everything in uppercase. Limit uppercase to the beginning of a paragraph or title, after a period, or in proper names.</p>	
<b>ALIGNMENT</b>	Use left justification for Latin alphabet languages and full justification for character-based languages.	
<b>HYPHENATION</b>	Do not split words; always write the full word in one line. Avoid hyphenations at the end of a line.	To be used: "This is an example of a full word on one line."
<b>LINE SPACING</b>	Use a minimum line spacing of 1.5 and adapt it to the font size and the medium of text display.	
<b>PAGE NUMBERING</b>	Number the pages of the text, using a larger font than that of the rest of the text.	
<b>STRUCTURE</b>	Make the structure of the content visually clear, e.g. by using headings or hierarchical levels, paragraphs and white space; use bullet points.	
<b>HEADINGS</b>	Include at least one heading per page. Have a maximum of 3 levels of headings.	

**IMAGES**

Use images (photos, drawings, illustrations) only if they help or complement the understanding of the text.

Images should be placed near the text. Try to put them in a place where they do not affect readability. Place them in the margin or at the top of the text block.

The same concept should always be represented with the same image.

Use high-resolution colour images when possible.

Include an alternative text for images in digital content.

Here instructions to add an alternative text: [LINK](#)

## 4.2.2. Pictograms

Pictograms are simple, **universally recognizable images** that represent objects, actions or concepts.

Pictograms can be used to **support communication**, both in understanding and expression, helping to bridge communication gaps and promote inclusion in educational settings.

They can be a valuable tool for students with severe communication difficulties, such as:

- learners with non-verbal autism without literacy,
- learners with intellectual disabilities without literacy,
- learners with cerebral palsy (and related conditions) without literacy, and many others.

Pictograms can help to **promote personal autonomy** in carrying out tasks related to the educational resource.

Examples of good practices are:

- pictograms for giving instructions,
- pictograms for orientation in the educational resource,
- pictograms for distributing information in space
- pictograms to structure the types of activities.

## MATERIAL

## RECOMMENDATION

## EXAMPLE

### SUPPORT

Learners must have access to the pictograms on appropriate and (digitally) adaptable material.

1. Some users point to a material. This could be paper, plastic or have a digital support. If users access through their vision, they need digital support. Some users with motor disabilities may also need digital support.

2. If digital support is used, some users may need additional material in order to lower brightness in their screens. When adapting content, different material possibilities should be taken into account.

3. Some users may need stronger types of paper or cardboard.

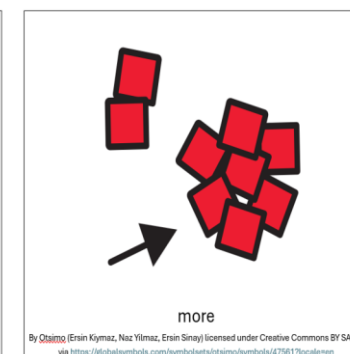
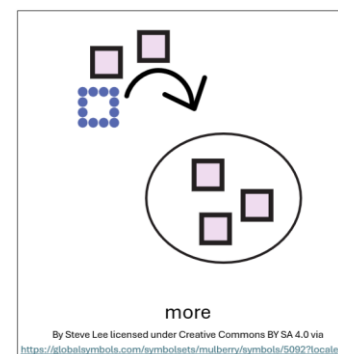
### ACCESS

Learners must have physical access to point and select pictograms with ease.

### PICTOGRAM SYSTEMS

There are several pictographic systems, differing from each other in their graphic design. Choose pictograms that do not differ much from each other. Above all, try not to make them contradictory.

Pictograms for the word “more” in different systems:



### SOURCES

Freely available pictograms can be either pictograms for augmentative and alternative communication (AAC) or pictograms for graphical illustrations.

## MATERIAL

## RECOMMENDATION

## EXAMPLE


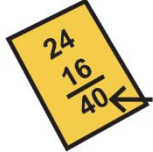

### OPEN-ACCESS IMAGE BANKS


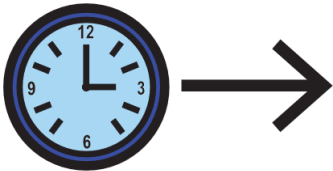
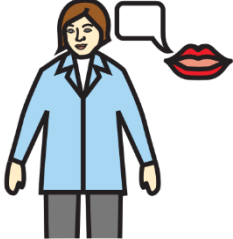

Search in open-access image banks. They are another useful resource for OER.



For example:

1. Coco Material <https://cocomaterial.com/>
2. Mulberry Symbols <https://mulberrysymbols.org/>
3. Open Moji <https://globalsymbols.com/symbolsets/openmoji?!ocale=en>
4. Stellar Symbols <https://globalsymbols.com/symbolsets/stellar-symbols?locale=en&page=8>



FORM	RECOMMENDATION	EXAMPLE
SIZE	The size of the pictograms should be appropriate to the means of access used by the learner.	
CONTRAST	Pictograms should have high contrast for visually impaired learners. Pictograms for learners with visual cortical damage should use red, yellow, black, white.	
BACKGROUND	Pictograms usually have a white background.  In the case of Augmentative and Alternative Communication users, pictograms may have a coloured background depending on the Grammatical class of the word being represented.	
TEXT	Some pictograms may be difficult to guess if they don't show their label.  Pictograms should have a caption or transcription above or below the picture in the learner's native language.	 <p>answer</p> <p><small>By Steve Lea - Creative Commons BY SA 4.0 via <a href="https://gettagymbols.com/tagymbols/multibarrysymbols/2156/local/en">https://gettagymbols.com/tagymbols/multibarrysymbols/2156/local/en</a></small></p>
BILINGUAL TEXT	In the case of bilingual contexts, one language may be placed above and one below.	<p>schüchtern</p>  <p>shy</p>
TRANSCRIPTIONS	If a transcription of a text is needed, do not make a word-for-word translation of the pictogram text. Use pictograms for the most important words in the text or use other visual aids (visual scenes).	

USE	RECOMMENDATION	EXAMPLE
<b>COHERENCE</b>	Use the same pictograms throughout the resource, i.e. do not change the type of pictogram you have used for the same concept throughout the resource.	
<b>AMBIGUITY</b>	Explain to the learner that many concepts can be represented by the same pictogram and vice versa.	 <p data-bbox="1809 443 2107 576">Example of the same pictogram for the words: "to win", "the first one", "winner" .</p> <p data-bbox="1525 571 1677 616"><b>winner</b></p> <p data-bbox="1413 619 1789 651"><small>by Paxtoncrafts Charitable Trust licensed under CC-BY-SA 4.0 via <a href="https://www.opensymbols.org/symbols/mulberry/winner-985799e67id=15643">https://www.opensymbols.org/symbols/mulberry/winner-985799e67id=15643</a></small></p>
<b>ABSTRACTION</b>	Avoid pictograms that are too abstract. It is difficult to interpret their meaning.	 <p data-bbox="1413 839 1879 871"><small>"future" by Paxtoncrafts Charitable Trust licensed under CC-BY-SA 4.0 via <a href="https://www.opensymbols.org/symbols/mulberry/future-920e87067id=14123">https://www.opensymbols.org/symbols/mulberry/future-920e87067id=14123</a></small></p>
<b>DETAILS</b>	Always try to use pictograms that match the complexity of what they represent.	 <p data-bbox="1413 1131 1852 1163"><small>"speech language therapist" by Paxtoncrafts Charitable Trust licensed under CC-BY-SA 4.0 via <a href="https://www.opensymbols.org/symbols/mulberry/speech-language-therapist-2a-94ef89a77id=15221">https://www.opensymbols.org/symbols/mulberry/speech-language-therapist-2a-94ef89a77id=15221</a></small></p>
<b>VARIETY</b>	Illustrations are useful for complex scientific content. Visual scenes provide a useful context for storytelling, processes or facts.	

ADAPTATION	RECOMMENDATION	EXAMPLE
<b>DIDACTICS</b>	Pictograms should represent concepts that the learner understands or can understand (zone of proximal development).	
<b>AGE OF USERS</b>	Pictograms should be appropriate to the age of the learner.	<p>Pictograms for the word “woman” for adult and younger learners:</p>  <p><small>by Sensory App House with Global Symbols · Creative Commons BY SA 4.0 via <a href="https://globalsymbols.com/symbolsets/ai-cartoon-symbols-picom-core-fringe-set/symbols/64390?locale=en">https://globalsymbols.com/symbolsets/ai-cartoon-symbols-picom-core-fringe-set/symbols/64390?locale=en</a></small></p>
<b>LITERACY LEVEL</b>	Use pictograms appropriate to the learner's level of literacy.	
<b>PERSONAL AUTONOMY</b>	<p>Pictograms can help to promote personal autonomy in carrying out tasks related to the educational resource.</p> <p>Example of good practice:</p> <ul style="list-style-type: none"> <li>- pictograms for giving instructions,</li> <li>- pictograms for orientation in the educational resource,</li> <li>- pictograms for distributing information in space</li> <li>- pictograms to structure the type of activities.</li> </ul>	<p>Pictograms for giving instructions:</p>  <p>read                  write                  cut out</p>

### 4.3. Accessibility for blind and partially sighted learners

**Visual content** (e.g., videos, images, diagrams, tables) can be made accessible to people with visual impairments through **Audio Description (AD)**.

**AD is a technique that provides spoken descriptions of key visual elements of a resource. It narrates details** such as actions, settings, facial expressions, and other important visual information, **ensuring a full understanding of the content.**

AD is mostly used by people with total blindness but also helps those with low vision. Besides, it is also useful for individuals whose first language is not the one used in the OER content, and it can assist those who want to follow a video or a lesson via audio for other reasons: lack of time, multitasking, etc.

The recommendations below will help you create an AD that is as tailored as possible to the needs of your students. Try to implement as many of them as possible in your work.

#### 4.3.1. Audio description for images

**Audio Description (AD) for images** is a spoken explanation of visual elements in an image, such as objects, people, colours, settings, and actions. It conveys essential details on the content and context of a visual resource to make it accessible to people with visual impairments (congenital or acquired) or low vision. It might not be functional to describe that e.g. a kid is wearing a red pullover, but providing those pieces of information enable students with visual impairments to create their own opinion and interact like the other learners.

LANGUAGE: CONTENT	RECOMMENDATION	EXAMPLE
<b>RESOURCE</b>	Indicate what type of resource is being described, such as photos, drawings, illustrations, diagrams, slides, or maps.	
<b>PICTURE DESCRIPTION</b>	<p>Describe the most representative visual information, so the listener can understand the described image. Provide details of the image, clarifying the “when”, “where”, “who”, “what”, and “how” of each image.</p> <p>Describe additional information with vivid details. Provide information about the colours and tones of the image.</p>	
<b>CHARACTER DESCRIPTION</b>	When describing people, include clearly recognizable attitudes and emotional states if they contribute to the understanding of the picture.	<i>“The child on the left appears to be sad.”</i>
<b>ORDER</b>	Describe the visual elements in a specific order: from top to bottom and from left to right, if the image allows it.	
<b>WRITTEN TEXT AND SYMBOLS</b>	Point out any text in the picture and read it out.	
<b>NEUTRALITY</b>	Stay neutral. Do not add personal opinions or interpretations.	
<b>INCLUDE SOUNDS</b>	Add music or sound effects to create a context or help identify the image before or during the AD.	
<b>QUALITY CHECK</b>	Ask someone with experience to review and correct the AD script to ensure quality. This reviewer could be a person with visual impairment.	

VOCABULARY & SENTENCES	RECOMMENDATION	EXAMPLE
<b>AGE-APPROPRIATE VOCABULARY</b>	Tailor vocabulary to match the age and comprehension level of the students.	Instead of “The child retrieves the book from the shelf,” you could say, “The boy picks up the book from the shelf.”
<b>VARY THE VOCABULARY</b>	Use a rich vocabulary with synonyms to avoid repetition, as long as it doesn’t cause confusion. The vocabulary should be suitable for the type of image and the young audience. Nevertheless, keep the simple language in mind.	
<b>NEW CONCEPTS AND TERMS</b>	If you use or introduce unfamiliar concepts or words, explain them in a simple way, embedded in context.	“The teacher points to the ‘volcano,’ a big mountain that can erupt with lava.”
<b>SPECIFIC VOCABULARY</b>	Avoid complex vocabulary or abstract concepts not suitable for the age of the students. Use specific words for objects and actions, and avoid vague descriptions or figurative language.	Avoid for example: “to fly into a rage”, or “to take on the world”.
<b>ANALOGIES AND METAPHORS</b>	Use analogies and metaphors with elements from the students' reality.	“The building's shape looks like a shoebox” or “The planet is round like a soccer ball”
<b>SENTENCE CONSTRUCTION</b>	Use short, clear sentences. Each sentence conveys one idea. Avoid overly complex sentences and subordination. Use active voice and direct action verbs.	
<b>TENSES</b>	Describe in the present tense to make the description easier to understand.	

### 4.3.2. Audio description for videos

Audio Description (AD) for videos is a **narration added to a video to describe visual elements**, such as actions, settings, and characters, making the content accessible to blind or visually impaired viewers. It provides spoken information during natural pauses in dialogue, ensuring that all viewers can understand and enjoy the video equally.

See an example of commercials with AD here: <https://adp.acb.org/commercials.html>

To adapt your AD of video content for blind and low-vision children, it is needed to **prioritise clarity, engagement, and accessibility** while **considering the developmental stage and learning styles of children**.

LANGUAGE: CONTENT	RECOMMENDATION	EXAMPLE
DESCRIPTIONS: KEY VISUAL ELEMENTS	Describe what’s most important. Clarify important details like “when,” “where,” “who,” “what,” and “how” in each scene. Focus on visual details that are relevant to the storyline or learning goals.	
DESCRIPTIONS: ACTIONS	Explain actions and provide context for the ones that are hard to infer from dialogue or sound, like facial expressions, gestures, or colours that hold significance to the lesson.	If a teacher is smiling, say, “The teacher smiles happily.”
TRANSITIONS BETWEEN SCENES	Children may struggle with changes in scenes if there is no context for the transition. Explain transitions clearly to avoid confusion. Use simple phrases like “Now we’re in...” or “Next, we see...” to prepare children for changes in scene or time.	“Now we’re outside at the playground, and it’s sunny.”
DESCRIPTIONS: EMOTIONS	Include descriptions of emotions. Children may rely heavily on understanding emotions and actions to follow a story or lesson. Highlight facial expressions, body language, and character interactions in a vivid yet concise way.	“The boy looks excited—his eyes are wide, and he’s smiling.”

LANGUAGE: CONTENT	RECOMMENDATION	EXAMPLE
<b>CHARACTER'S DESCRIPTION</b>	Focus on essential, easy-to-visualize traits like height, body type, and age, but keep it simple and relevant to the story. Mention traits that will help children distinguish between characters, such as a noticeable accessory or clothing item, while omitting unnecessary or overly detailed descriptions.	"Lily is a tall girl, about the same height as an adult. She's wearing a leather jacket, and her hair is tied back in a ponytail."
<b>CHARACTER'S NAMING</b>	Always use characters' names when they first appear in the story and refer to them regularly in the narration to help children follow who is who. Repeat names frequently, especially for primary characters, to reinforce their identity throughout the story.	"This is Emma. Emma is an adventurous girl with long brown hair, and she's wearing a green coat."
<b>SENSORY DESCRIPTIONS</b>	Refer to other senses. Use rich, multisensory descriptions to engage the student's imagination. Consider including sounds, smells, or textures that cannot be conveyed visually but help in building a mental picture.	
<b>TEXT AND SYMBOLS</b>	If a text is present, explain that a text is shown in the video and read it aloud. Be sure to explain symbols or numbers as they appear.	"The words say, 'Water is important for all living things.'"
<b>INTERACTIVE ELEMENTS</b>	Incorporate interactive elements into the AD by prompting children to guess or anticipate actions, recall information, or solve a problem. Ask simple questions or prompt the student to think about what is being described.	"Can you guess what the rabbit is going to do next?" "Can you guess what animal will come out next?" "Remember, that's the same bird we saw earlier!"
<b>FUN AND ENGAGING DESCRIPTIONS</b>	Infuse descriptions with a sense of fun where appropriate to enhance the learning experience. Use adjectives and verbs that evoke excitement and curiosity without overwhelming the listener.	"The superhero zooms through the sky with a big smile!" instead of "The superhero flies quickly."
<b>POSITIVE REINFORCEMENT</b>	Include encouraging phrases in AD to motivate students, especially when describing challenging or unfamiliar content. This will make the learning experience more enjoyable and supportive.	"Great job if you remembered the answer! You're doing awesome!"
<b>CULTURAL SENSITIVITY</b>	Be mindful of cultural references. Ensure AD includes context for cultural references that might be unfamiliar to children, explaining in a way that is accessible and relatable for their age group.	If a character is performing a cultural dance, describe what the dance represents and why it's important, but in simple, relatable terms.

VOCABULARY & SENTENCES	RECOMMENDATION	EXAMPLE
AGE-APPROPRIATE VOCABULARY	Tailor vocabulary to match the age and comprehension level of the students.	Instead of “The child retrieves the book from the shelf,” you could say, “The boy picks up the book from the shelf.”
SPECIFIC VOCABULARY	Avoid complex vocabulary or abstract concepts not suitable for the age of the students. Use specific words for objects and actions, avoiding vague descriptions or figurative language.	Avoid for example: “to fly into a range”, or “to take on the world”).
SENTENCE CONSTRUCTION	Use <b>short, clear sentences</b> . Each sentence conveys one idea. Avoid overly complex sentences and subordination. Use <b>active voice</b> and <b>direct action verbs</b> that are easy for students to understand.	
NEW CONCEPTS AND WORDS	If you use or introduce unfamiliar concepts or words, explain them in a simple way, embedded in context.	“The teacher points to the ‘volcano,’ a big mountain that can erupt with lava.”
CLEAR EXPLANATIONS FOR SCIENTIFIC CONCEPTS	When complex concepts are introduced, make sure the AD provides clear, concise explanations. Provide simple analogies or comparisons to help children grasp difficult concepts. Break down explanations for scientific or historical concepts into smaller, more understandable parts for younger audiences.	

TONE AND VOICE	RECOMMENDATION	EXAMPLE
PACE AND TIMING ADJUSTMENTS	Ensure that the pace is adequate. Provide longer pauses for younger learners. Modulate the rhythm to enhance understanding.	“The girl hugs the dog,” instead of “The girl quickly bends down and hugs her dog tightly.”
TONE AND VOICE	Adopt a warm and friendly tone appropriate for the content. The narrator’s voice should be engaging, warm and expressive to maintain the child’s attention.	

TONE AND VOICE	RECOMMENDATION	EXAMPLE
AD WITH AI SOFTWARE	Use a human-like voice with an expressive tone.	
PROFESSIONAL NARRATOR	If possible, contact a professional narrator.	

TAILORING AND ADAPTATION	RECOMMENDATION	EXAMPLE
TAILOR DESCRIPTIONS TO DEVELOPMENTAL STAGES	Use simpler descriptions for younger children (e.g., ages 3-6) and progressively add more details for older students. For younger children, focus more on action, while older children might need more detailed explanations of context and visuals.	
TAILOR DESCRIPTIONS TO COGNITIVE ABILITIES	Take into account language comprehension and cognitive abilities: children may have a range of abilities beyond visual impairments, such as learning or intellectual disabilities.	
ENGAGE OTHER SENSES	Where possible, add tactile or kinaesthetic cues in conjunction with AD (e.g., in live educational settings or with physical learning tools). For example, pairing AD with touchable objects related to the video can enhance learning for children with multiple disabilities.	If the video is on a type of flower, provide one to the student to explore using other senses.
CUSTOMIZATION AND ADAPTABILITY	Be ready to adapt the AD based on feedback from children, educators, or caregivers. What works for one group of children may need to be adjusted for others. Incorporate flexibility to adjust descriptions based on the developmental needs of children with varying visual impairments.	

## 4.4. Accessibility for deaf and hard of hearing learners

In this section, you will find recommendations on how to make your OER accessible for deaf and hard of hearing students. Auditory content can be made accessible to them through **Subtitling or Sign language**.

### 4.4.1. Subtitling

Subtitling is the process of **displaying written text on a screen to convey spoken dialogue, sound effects, and other relevant audio information in a video**.

For an example, click [HERE](#).

The recommendations below will help you create subtitles that are as tailored as possible to the needs of your students. Try to implement as many of them as possible in your work.

SOFTWARE	RECOMMENDATION	EXAMPLE
Level 1	Use an automatic closed captioning (CC) tool.	YouTube Studio: <a href="https://studio.youtube.com">https://studio.youtube.com</a>
Level 2	Use free software to create subtitles. These tools allow you to manually adjust timing and add important details, such as sound effects or speaker identification to enhance accessibility.	Aegisub: <a href="https://aegisub.org/">https://aegisub.org/</a> Subtitle Edit: <a href="https://www.nikse.dk/subtitleedit">https://www.nikse.dk/subtitleedit</a>
Level 3	Use paid software to create professional-grade subtitles. These tools provide advanced features, such as precise timecoding, speaker identification, and options for customising the appearance of subtitles, to ensure high-quality and accurate accessibility.	EZtitles: <a href="https://www.eztitles.com/">https://www.eztitles.com/</a> Ooona: <a href="https://www.ooona.net/ooona-tools/">https://www.ooona.net/ooona-tools/</a>

TECHNICAL ASPECTS	RECOMMENDATION	EXAMPLE
COLOURS	<p>If you use colours for subtitles, ensure they contrast with the video background to avoid visual fatigue.</p> <p>To check this, you can use, for example, Colour Contrast Analyser (<a href="https://www.tpgi.com/color-contrast-checker/">https://www.tpgi.com/color-contrast-checker/</a>)</p>	<p>Example: use yellow on a black background.</p> <p><b>Yellow on a black background</b></p> <p>If the colour of the character matches the background, the subtitle can be framed in a coloured box to obtain sufficient contrast.</p> <p><b>White on a black background</b></p>
FONT	<p>The choice of font must respond to the criteria of maximum legibility.</p>	<p>Example: Arial or Calibri are legible types of fonts.</p> <p><b>Calibri as a legible type of font</b> <b>Arial as a legible type of font</b></p>
SUBTITLE ENTRY AND EXIT TIME	<p>The entry time or start time of a subtitle and the exit time or end time of a subtitle must coincide with the lip movement of the characters or people talking. It should also coincide with the sound information.</p>	
DURATION	<p>The duration of a subtitle, that is, the time it remains on the screen, must allow it to be read without difficulty. The maximum recommended speed is 12 characters per second.</p>	
LENGTH	<p>Subtitles must occupy two lines maximum and, in exceptional cases, three.</p>	<p><b>Subtitles must occupy two lines and, exceptionally, three.</b></p>
DIVISION IN LINES	<p>When dividing a subtitle into lines, you should:</p> <ul style="list-style-type: none"> <li>- take advantage of speech pauses and silences,</li> <li>- take advantage of grammatical pauses or punctuation marks,</li> <li>- write the conjunctions and connections on the bottom line.</li> </ul> <p>These subtitles should not be separated into two lines:</p> <p>syllables of the same word, nominal, verbal and prepositional phrases.</p>	

TECHNICAL ASPECTS	RECOMMENDATION	EXAMPLE
<b>CHARACTERS NUMBER</b>	<p>The maximum number of characters per line should range between 37 and 42 characters for a general adult audience.</p> <p>Keep in mind that children and young audiences have a lower reading speed than adults, so it is recommended to reduce the number of characters. The priority is that the student can read the subtitles displayed on the screen.</p>	
<b>POSITION</b>	<p>Subtitles should appear at the bottom of the screen. If the subtitle obscures relevant information displayed at the bottom of the screen, then you may move the subtitle box.</p>	
TEXT	RECOMMENDATION	EXAMPLE
<b>SPELLING AND GRAMMAR</b>	<p>Subtitles must be spelling and grammatically correct.</p> <p>Inaccuracies in speech should be corrected, except when they are relevant to the argument. In that case, they must be enclosed in quotes.</p>	<p>Original spoken text (with dialect/accent): <i>I ain't got no idea where he went.</i></p> <p>Corrected subtitle (if pronunciation is not relevant to understanding): <i>I have no idea where he went.</i></p> <p>Subtitle with inaccuracy: <i>I ain't got no 'idear' where he went.</i></p>
<b>NUMBERS AND SYMBOLS</b>	<p>Natural numbers from zero to ten, inclusive, must be written in letters, except when accompanied by abbreviations, signs or symbols.</p>	<p>ten sheep</p> <p>10 €</p>
<b>WORDING</b>	<p>Subtitles should be as literal as possible.</p>	
<b>SUMMARY</b>	<p>If you need to reduce or eliminate information from the dialogue, try to remove less relevant or unimportant information. You could also condense the content as effectively as possible.</p>	

<b>CONTENT:</b> CHARACTERS; DIALOGUES; MUSIC AND SOUND	<b>RECOMMENDATION</b>	<b>EXAMPLE</b>
<b>CHARACTERS IDENTIFICATION</b>	The different characters involved in the audiovisual text must be identified. Use a different colour for each character or include their name in parentheses and in capital letters.	<div style="display: flex; justify-content: space-around;"> <div style="background-color: black; color: white; padding: 5px;">- Hello!</div> <div style="background-color: black; color: white; padding: 5px;">- [MARIA] Hello!</div> </div> <div style="display: flex; justify-content: space-around;"> <div style="background-color: black; color: yellow; padding: 5px;">- Hi!</div> <div style="background-color: black; color: white; padding: 5px;">- [GEORGE] Hi!</div> </div>
<b>DIALOGS</b>	In dialogues, a new line must be started for each participant. You can use dashes to differentiate between characters.	<div style="background-color: black; color: white; padding: 5px;">- Character 1</div> <div style="background-color: black; color: yellow; padding: 5px;">- Character 2</div>
<b>VOICE OVERS</b>	Voice-overs (i.e., those emitted by characters who do not appear on screen) must be subtitled. You can use a label [voice-over] or italics to indicate the dialogue in the voice-over.	<div style="background-color: black; color: white; padding: 5px;">[voice-over] You can use this label.</div> <div style="background-color: black; color: white; padding: 5px;"><b>[voice-over] You can use this label.</b></div> <div style="background-color: black; color: yellow; padding: 5px;"><i>You can write the voice-over in italics.</i></div>
<b>CONTEXTUAL INFORMATION</b>	Contextual information must be included, in parentheses and in capital letters or square brackets and lower-case letters, before the text to which it applies and on the same line.	Examples of contextual information are: (SHOUTS), (SARCASTIC), (FRENCH ACCENT), (BOTH), (ALL) or [shouts], [sarcastic], [French accent], [both], [all]. <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="background-color: black; color: white; padding: 5px;">- Good morning!</div> <div style="background-color: black; color: white; padding: 5px;">- Good morning!</div> </div> <div style="display: flex; justify-content: space-around;"> <div style="background-color: black; color: yellow; padding: 5px;">- (ALL) Good morning!</div> <div style="background-color: black; color: white; padding: 5px;">- [all] Good morning!</div> </div>
<b>SOUND EFFECTS AND MUSIC</b>	Describe sound elements if they are relevant for the understanding of the message: music, background noises, sounds of animals or things. The information should be provided in parentheses or brackets, with the first letter in capital letters and the rest in lowercase. This enables a differentiation from the rest of the dialogue.	Example: (Doorbell) or [Doorbell].

## 4.4.2. Sign language

Sign language is a visual and spatial communication system used mainly by people who are deaf or hard of hearing, as well as an augmentative or alternative system of communication.

Each country or region usually has its own sign language, with grammatical structures and lexicons that may differ significantly, reflecting the cultural and linguistic diversity of deaf communities worldwide. Like spoken languages, sign languages are rich and complex, capable of expressing any idea or concept.

There are also other sign systems used to support oral communication for people with disabilities.

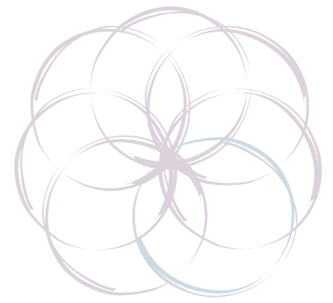
Please follow these recommendations if you want to provide the audio content of a video in sign language for your students.

LANGUAGE'S CHOICE	RECOMMENDATION	EXAMPLE
	<p>Choose the sign language of the main audience. If there are several audiences, consider using more than one or including international signs as well.</p> <p>Inform which sign language the content is offered in.</p>	<p>If your deaf students come from different countries, consider international signs to deliver the information. If your content is in British Sign Language, specify it.</p>
	<p>Include captions according to your students' preferences, in the main language of the video or translated into their native language and synchronize them with the sign language translation.</p>	<p>For a lecture on Shakespeare's plays, provide English captions that appear at the bottom of the screen simultaneously with the sign language interpretation, reflecting the original spoken content.</p>

CONTENT & TRANSLATION	RECOMMENDATION	EXAMPLE
	Provide a sign language version of the text/audio description to understand key information, ideas and processes.	For a documentary on climate change, include a detailed sign language interpretation of the script that explains key concepts and data visually through signing.
<b>ADAPTATION</b>	If the original text is not adapted for the target audience, provide an adapted signed version.	If the original text uses advanced vocabulary about neurological diseases, the signed version might use simpler language and more visual explanations to clarify complex concepts.
<b>TRANSLATION</b>	Consider hiring a deaf translator.	Employ a deaf translator to oversee the translation of historical texts into sign language to ensure that cultural nuances and historical contexts are accurately conveyed.
	Collaboration with the deaf community in the co-creation of content.	Work with deaf educators and students to design a curriculum module in sign language, ensuring the content is culturally sensitive and pedagogically sound.
	Conduct user testing with sign language students to evaluate the material.	Invite a group of sign language students to view new educational materials and provide feedback on the clarity of the sign language interpretation, the effectiveness of captions, and the overall accessibility of the content.

TECHNICAL IMPLEMENTATION	RECOMMENDATION	EXAMPLE
<b>TIMING</b>	Synchronise the sign language translation to the audio.	Ensure that the timing of the sign language translation precisely aligns with the corresponding audio segments to facilitate coherent comprehension.

TECHNICAL IMPLEMENTATION	RECOMMENDATION	EXAMPLE
<b>SYNCHRONIZATION</b>	When using fingerspelling, synchronise the subtitle of the spelt word with the sign language video on the screen.	When the interpreter fingerspells technical terms, such as "DNA," the corresponding subtitles should appear on the screen at exactly the same time to aid comprehension.
<b>POSITION ON THE SCREEN</b>	Video of sign language interpreters should be clearly displayed and available in full-screen format.	Allow users the option to view the interpreter in full screen by clicking on the interpreter's video, making it easier for viewers to focus on the signing if needed.
	Providing a synchronized video of the sign language interpreter that can be displayed in a different viewport or overlaid on the image by the viewer.	Provide a picture-in-picture feature that shows the sign language interpreter in a small window overlaying the main educational video, which can be moved and resized as per the viewer's preference.
	If visual elements such as titles, subtitles, etc., are included, consider the placement of the interpreter on screen.	Position the interpreter in the lower right corner of the screen during a PowerPoint presentation so that they do not block the textual content and graphical data being displayed.
<b>BACKGROUND</b>	If a chroma with a transparent background is used, consider background elements for an adequate contrast.	If using a green screen behind the interpreter, choose a background that contrasts well with the interpreter's attire and the signing space, such as a muted blue or grey.
<b>INTERPRETER CLOTHING</b>	The clothing of the signing person should have a high contrast to their skin colour, uniform colour and texture, without any elements that stand out.	A caucasian interpreter should wear a dark uniform colour and texture, avoiding patterns that might distract the viewer.
<b>SETTING</b>	Good illumination of the face and body of the person signing should be ensured avoiding excessive light, and shadows on the person and the background.	Arrange the lighting to brightly illuminate the signer's face and hands without causing glare or shadows, ensuring clear visibility of each sign.
<b>FRAMING OF THE INTERPRETER</b>	Provide medium or medium-long framing.	Frame the interpreter from the waist up, allowing the viewer to see all hand movements, facial expressions, and upper body language that are part of the signing.



# EQui-T

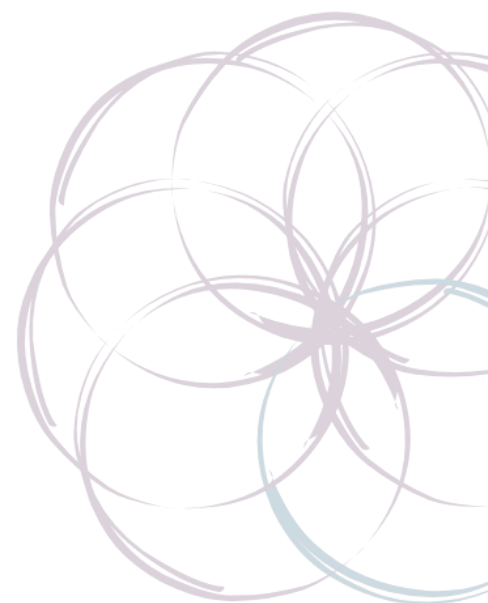
## European Quality Development System for Inclusive Education and Teacher Training



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