



UNIVERSITAT DE  
BARCELONA

EINFOSE



## EINFOSE Project

E2-Workshop on the development and application of evaluation  
criteria

Test package for content authors and evaluators



<http://creativecommons.org/licenses/by-nc-sa/3.0/es>

# Our commitment

- **Guidelines** for creators and selectors of learning resources.
- **Templates** for creating accessible learning resources.
- **Information resources** for the professors.
- **Evaluation checklist** for course moderators/professors.

# The rationale

## Who for?

- Professors
- Learning platform administrators

## When for?

- Planning and production of learning resources
- Selection of learning resources

## Who benefits?

- Students with disabilities
- Students with difficulties in understanding content, owing to language or learning barriers

# Evaluation scope

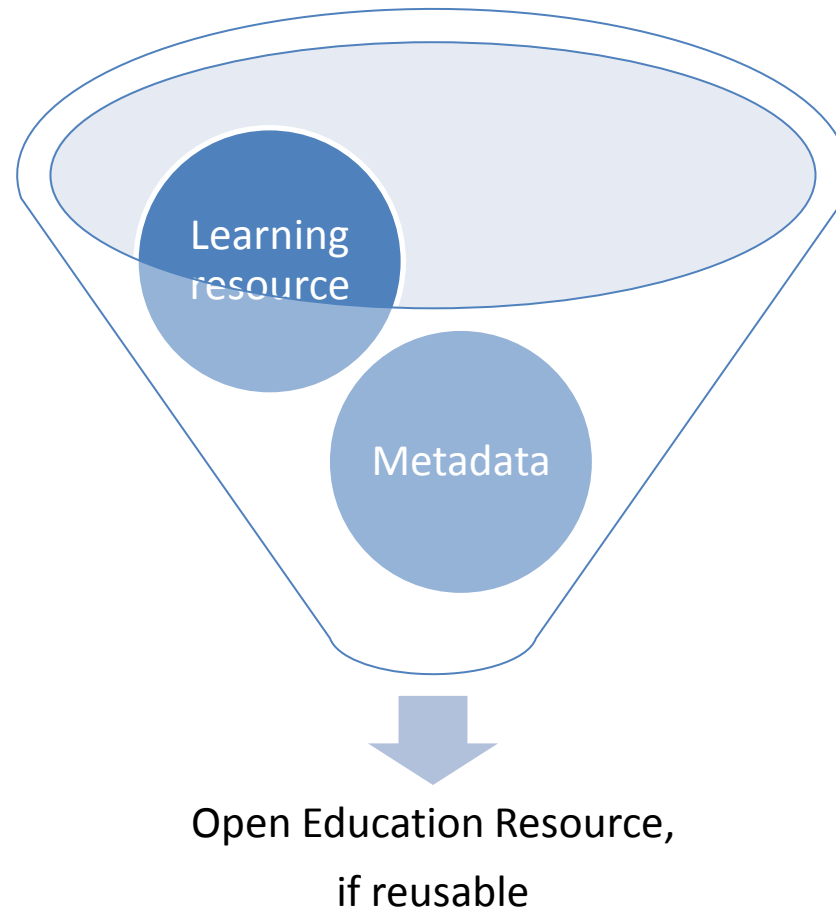
Learning resources  
consisting mostly  
in text

Learning resources  
consisting mostly  
in still image

Learning resources  
consisting mostly  
in video

Learning resources  
combining two or  
more resources

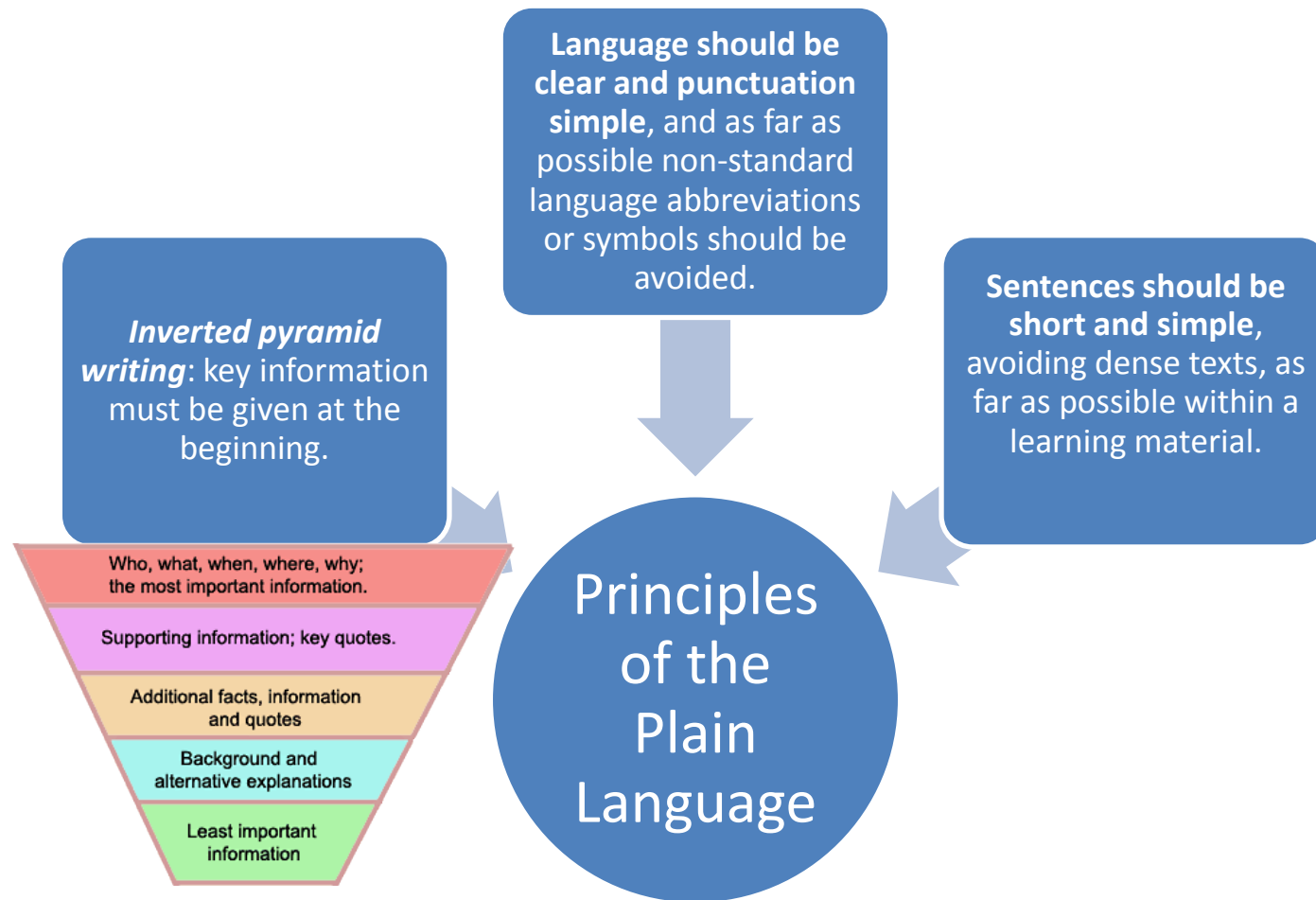
# Evaluation scope (2)



# Learning resources consisting mostly in text

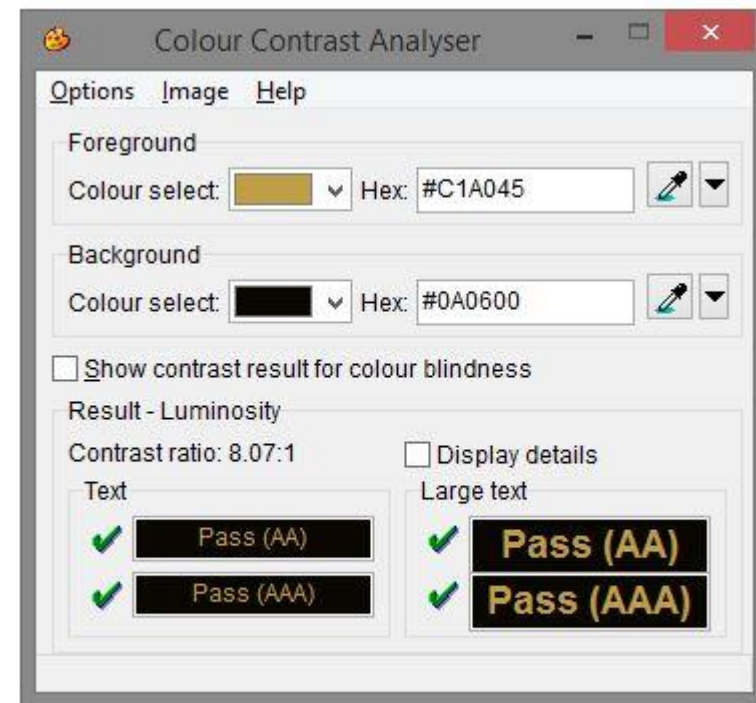
- Main issues to consider:
  - Language and writing.
  - Format and semantic structure, including:
    - Fonts, paragraphs and typographic styles.
    - Language(s).
    - Headers.
    - Lists.
    - Tables.
    - Notes (footnotes and endnotes).
  - Accessibility checkers in MO Word and MO PowerPoint.

# Language and writing



# Fonts, paragraphs and typographic styles

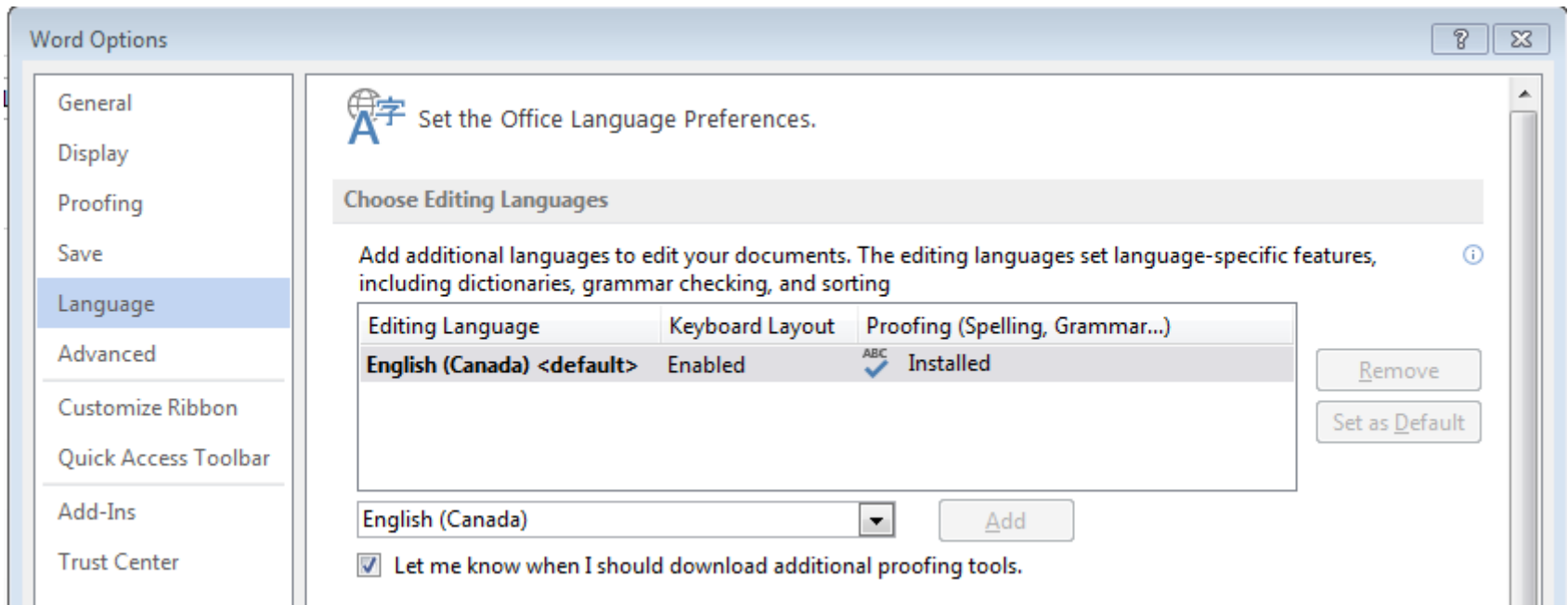
Display 4	Light 112sp
Display 3	Regular 56sp
Display 2	Regular 45sp
Display 1	Regular 34sp
Headline	Regular 24sp
Title	Medium 20sp
Subheading	Regular 16sp (Device), Regular 15sp (Desktop)
Body 2	Medium 14sp (Device), Medium 13sp (Desktop)
Body 1	Regular 14sp (Device), Regular 13sp (Desktop)
Caption	Regular 12sp
Button	MEDIUM (ALL CAPS) 14sp



Colour Contrast Analyser main window

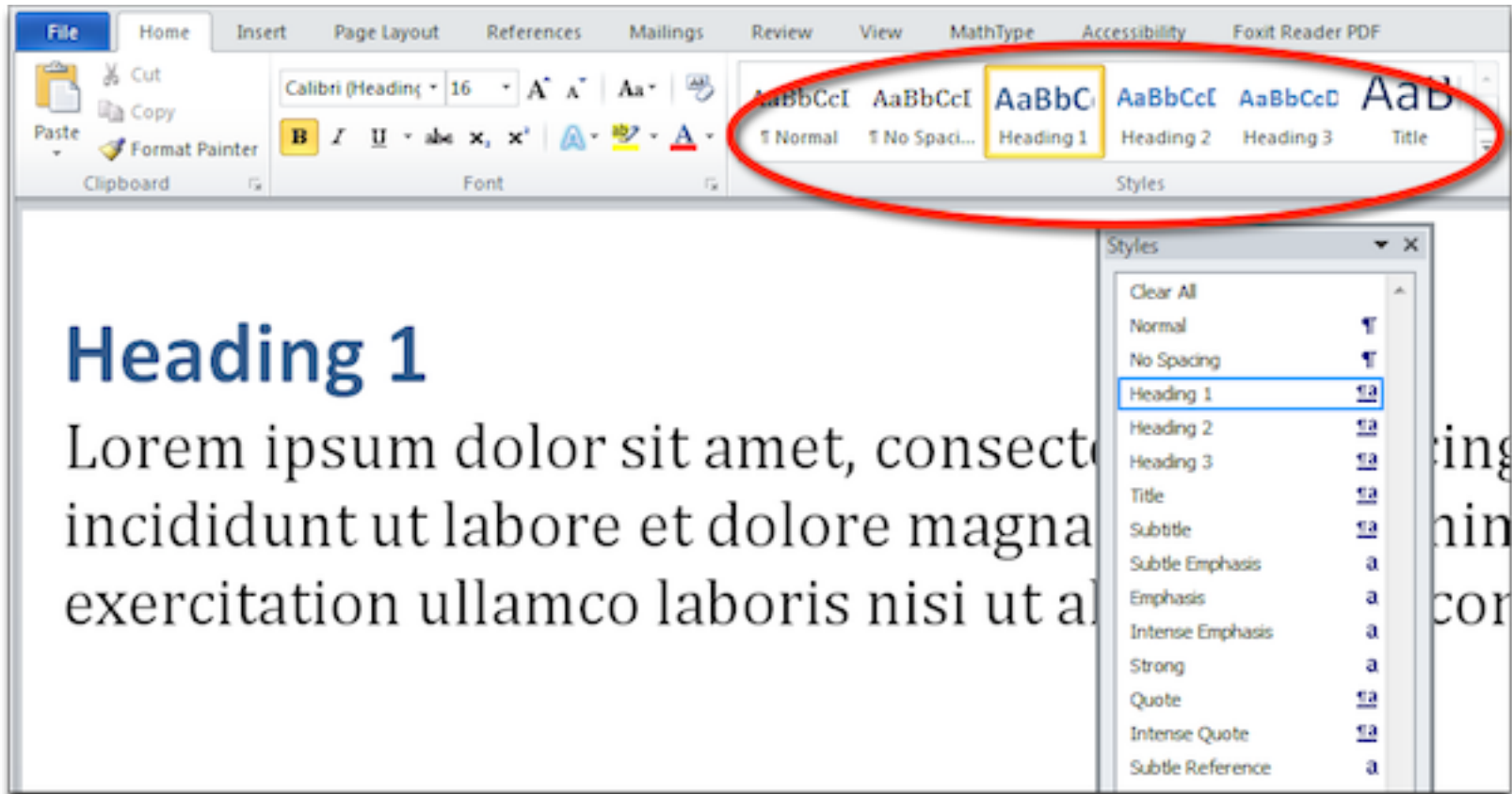


# Language(s)

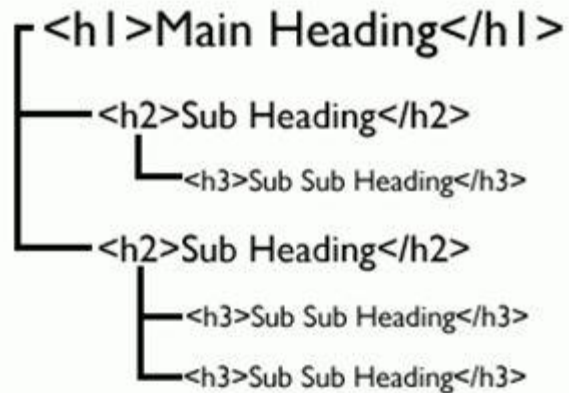


Specify the main language used in the writing and other languages used, either in quotes, loanwords, etc.

# Headers



# Headers (2)

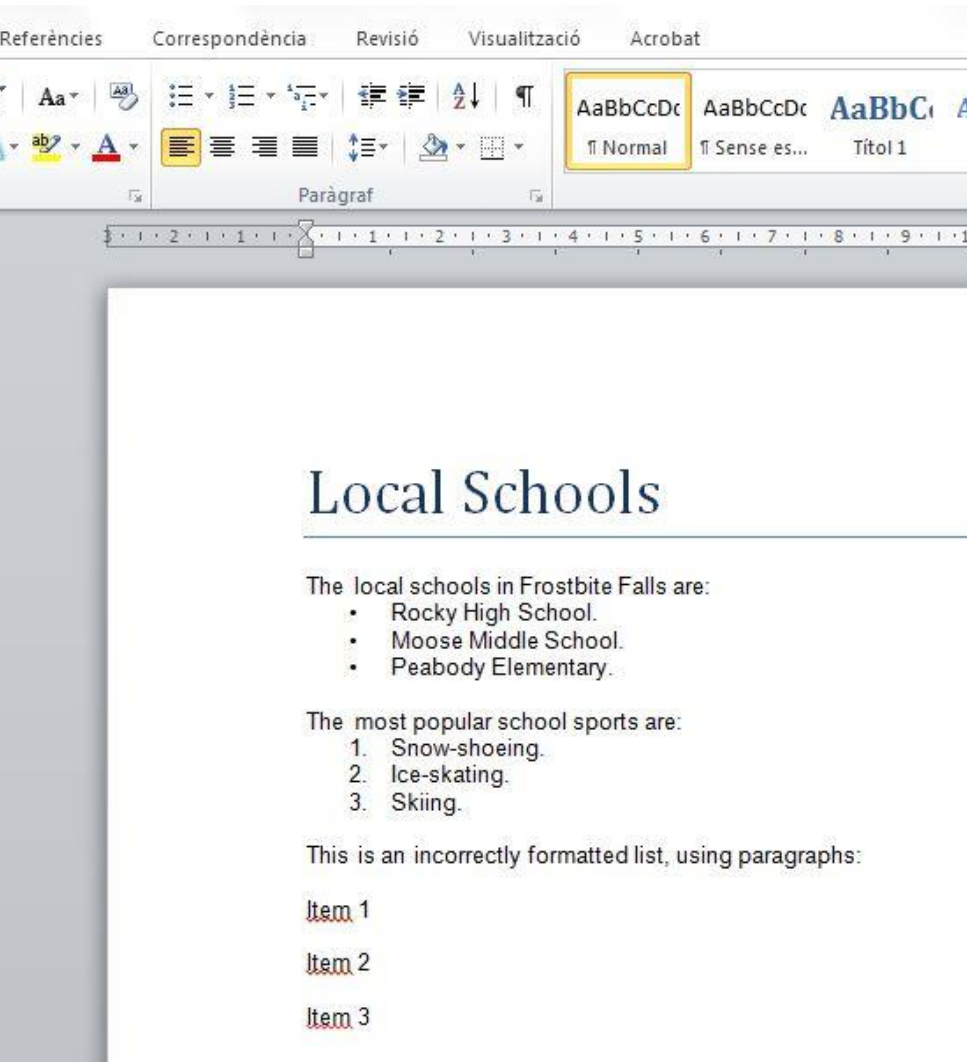


```
<h1>Main Heading</h1>  
├── <h2>Sub Heading</h2>  
│   └── <h3>Sub Sub Heading</h3>  
└── <h2>Sub Heading</h2>  
    ├── <h3>Sub Sub Heading</h3>  
    └── <h3>Sub Sub Heading</h3>
```

Headings must follow a hierarchical structure.

- Respecting all the depth's levels.
- Avoiding skipping levels.
- Avoiding empty headers.

# Lists



- What for?
  - Organizing a text.
- How?
  - Build them using the **suitable style**, so as to identify them in a structural way and to assign an easy-to-read format.
  - End each element of a list with a **punctuation mark** in order to make it easy reading it with a speech synthesizer.
  - You can define the following **types of lists**:
    - Apply bullets to mark important points.
    - Apply numbers to make a sequence.

# Tables

## Example table

This is an example of a data table.

Disability Category	Participants	Ballots Completed	Ballots Incomplete/ Terminated	Results	
				Accuracy	Time to complete
Blind	5	1	4	34.5%, n=1	1199 sec, n=1
Low Vision	5	2	3	98.3% n=2 (97.7%, n=3)	1716 sec, n=3 (1934 sec, n=2)
Dexterity	5	4	1	98.3%, n=4	1672.1 sec, n=4
Mobility	3	3	0	95.4%, n=3	1416 sec, n=3

## Pros

- One of the most commonly used resources for summarizing data.

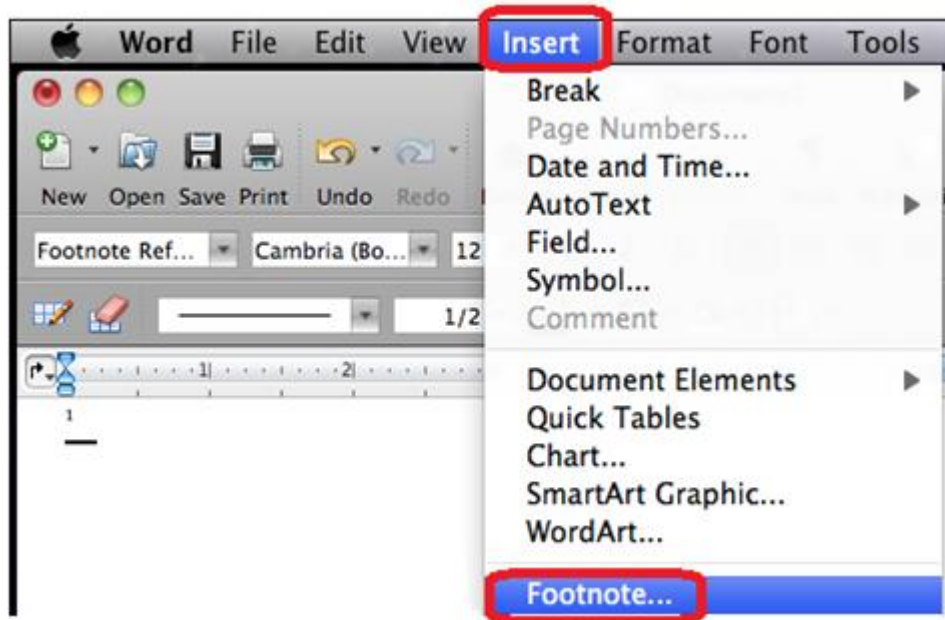
## Cons

- But should never be used to layout or diagram contents.
- The tables have accessibility disadvantages, therefore, it is recommended that they be as simple as possible and not modify their structure once created.

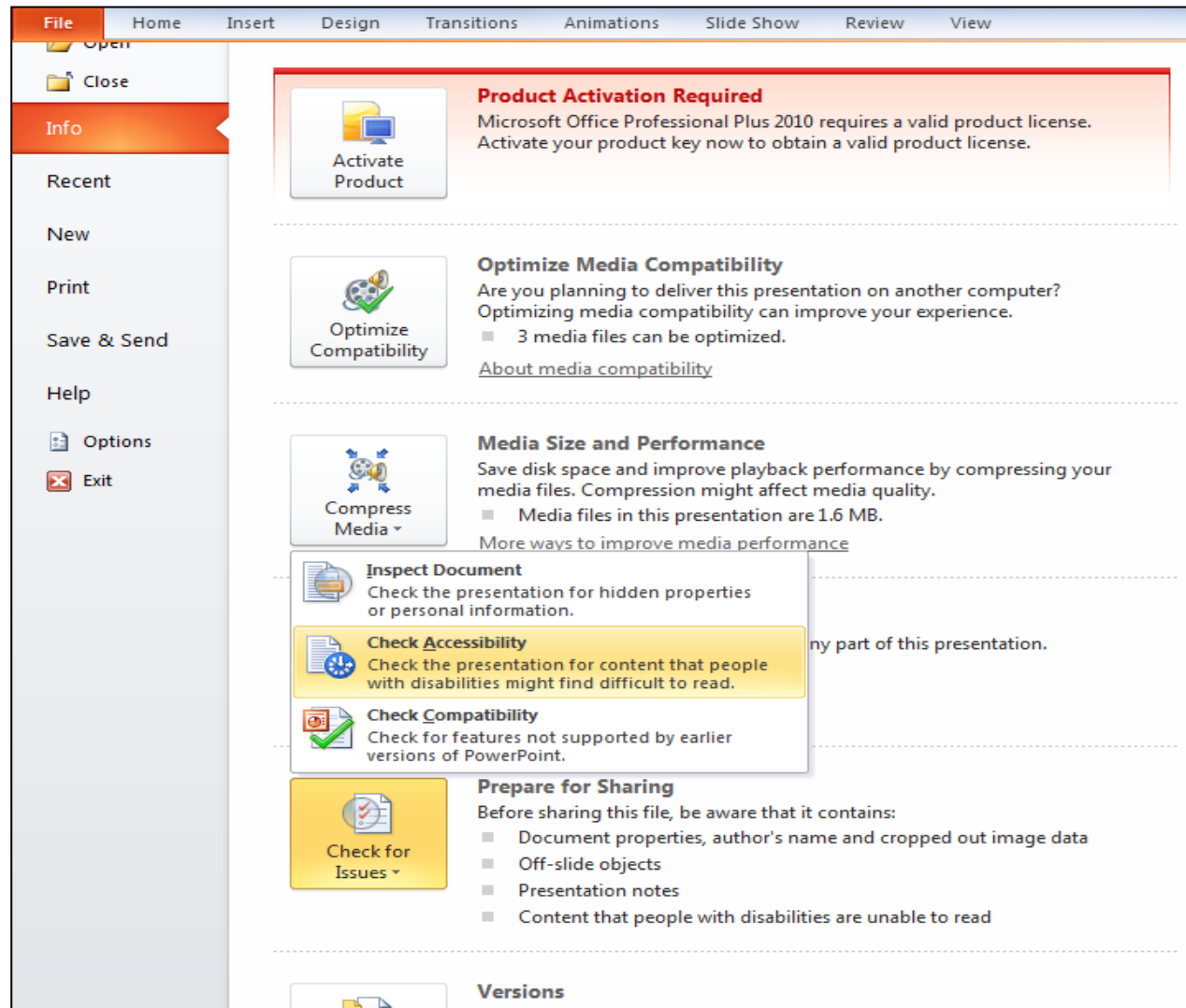
# Tables (2)

- Recommendations for creating simplest tables:
  - Replace complex tables with several simple tables, with few columns, that make sense when reading from left to right and top to bottom.
  - Provide a table summary that clearly and concisely explains the contents of the table.
  - Use table headers for each column.

# Notes (footnotes and endnotes)



# Accessibility checkers in MO Word and MO PowerPoint





# Textual learning resources: demonstrations

- Showing templates for MO Word and PowerPoint documents.
- Issuing documents based on the templates.
- Using accessibility checkers in MO Word and MO PowerPoint.

# What is an Accessible Image?

- An image which is related to and enhance the content to be explained.
- An image which provides different mode of access to visual information contained in it.
  - Basic alt mode of access: Text/audio description
  - Other modes of access: Tactile graphic, Sonification, Smart image, Multi-modal access
- Accessible images allow users who use assistive technologies equal access to information provided by an image.

# Recommendations concerning the content of the images

- Images should add to the content but should not be the content.
- Images should provide some kind of added value. Avoid decorative images.
- Visual metaphors should be recognizable and understandable to any user, from any country and culture.

# Recommendations concerning the content of the images (2)

- Guidelines for graphics:
  - They should be simple, with clear data.
  - It is advisable to consolidate composite graphics into a single image, with only one alternative text/audio information.

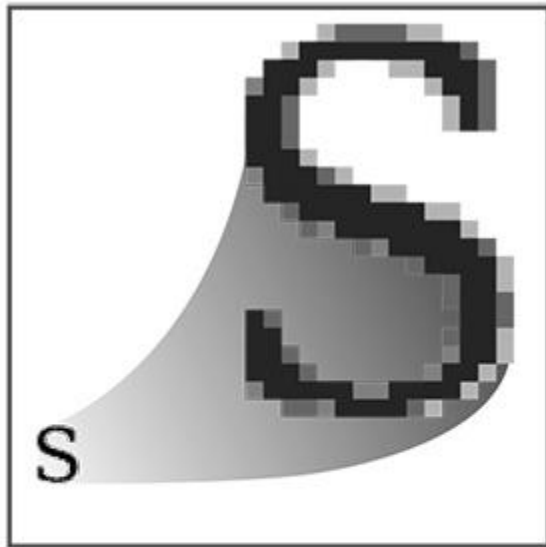
# Accessible Still images: technical requirements

- Use an image editing software such as Adobe Photoshop (commercial) or GIMP (open source).
- Images should be neatly trimmed.
- The images must have a good resolution.
  - At minimum, 300 dpi.
- The images must have a good color contrast.
  - Check it with tools!

# Accessible Still images

- Technical requirements (cont'd).
  - Include alternative text for the image by following these basic recommendations:
    - The content of the alternative text should effectively and efficiently describe the image and its meaning.
    - Follow the inverted pyramid model (with the most important descriptive information in the first line) and be as concise as possible.
    - Alternate text should be incorporated into the "alt" attribute.
  - Include the title of the image if it has it.
    - It should be included in the "title" attribute.

# Comparison between raster and vector image formats



**Raster**  
.jpeg .gif .png



**Vector**  
.svg

Source: [How to convert PDF to vector by Ivan Cook \(pdf.iskysoft.com/convert-pdf/convert-pdf-to-vector.html\)](http://pdf.iskysoft.com/convert-pdf/convert-pdf-to-vector.html)

# Comparison between raster file formats

Extension	Colour	Compression	Common Uses
JPG, JPEG	24-bit	Lossy	Photos, web pics
GIF	8-bit	Lossless	Web graphics – buttons, icons, etc
PNG	up to 24-bit	Lossless	Web – replacement for GIF
TIF, TIFF	24-bit	Lossless	Professional Photos etc

Source: [Image file formats: a talk for the Harrow Computer Club on the characteristics of different image by Bob Watson \(www.slideshare.net/bobwatson/image-file-formats\)](http://www.slideshare.net/bobwatson/image-file-formats)



# Accessible Still images: demonstrations

- Using contrast check tools: [Color Contrast Analyzer](http://www.paciellogroup.com/resources/contrastanalyzer/) ([www.paciellogroup.com/resources/contrastanalyzer/](http://www.paciellogroup.com/resources/contrastanalyzer/)) and [Contrast Checker](http://webaim.org/resources/contrastchecker/) ([webaim.org/resources/contrastchecker/](http://webaim.org/resources/contrastchecker/)).
- Inserting an image into Moodle courses, and incorporation of all required attributes.
- Inserting an image into MS Word and MS PowerPoint documents.

# What is an accessible video?

A video is fully accessible when anyone can access the content of the video, even if they have hearing, visual, motor, etc. disabilities, or difficulties in understanding the content, either because they do not know the **original language** or because of **learning disorders**.

Accessibility matters throughout the entire life cycle of the video.

# When accessibility matters?

- At the **planning and production stage**, the following should be taken into account:
  - The clarity of the visual content, which should offer sufficient brightness and contrast, no excessive transitions and a suitable rhythm.
  - The clarity of the textual content or script, which must follow the principles of plain language, be coherent and presented at an appropriate pace.

# When accessibility matters? (2)

- At the **planning** and **production** stage, the following should be taken into account:
  - Video must include adaptation resources to different kinds of students.
    - **Transcription** for the deaf and hearing impaired (SpS).
    - **Subtitling** for the deaf and the hearing impaired (SpS).
    - **Audio description** for blind and visually impaired (AD) persons.
    - Ideally, **interpretation in different sign languages** of the receiving public (ILS).

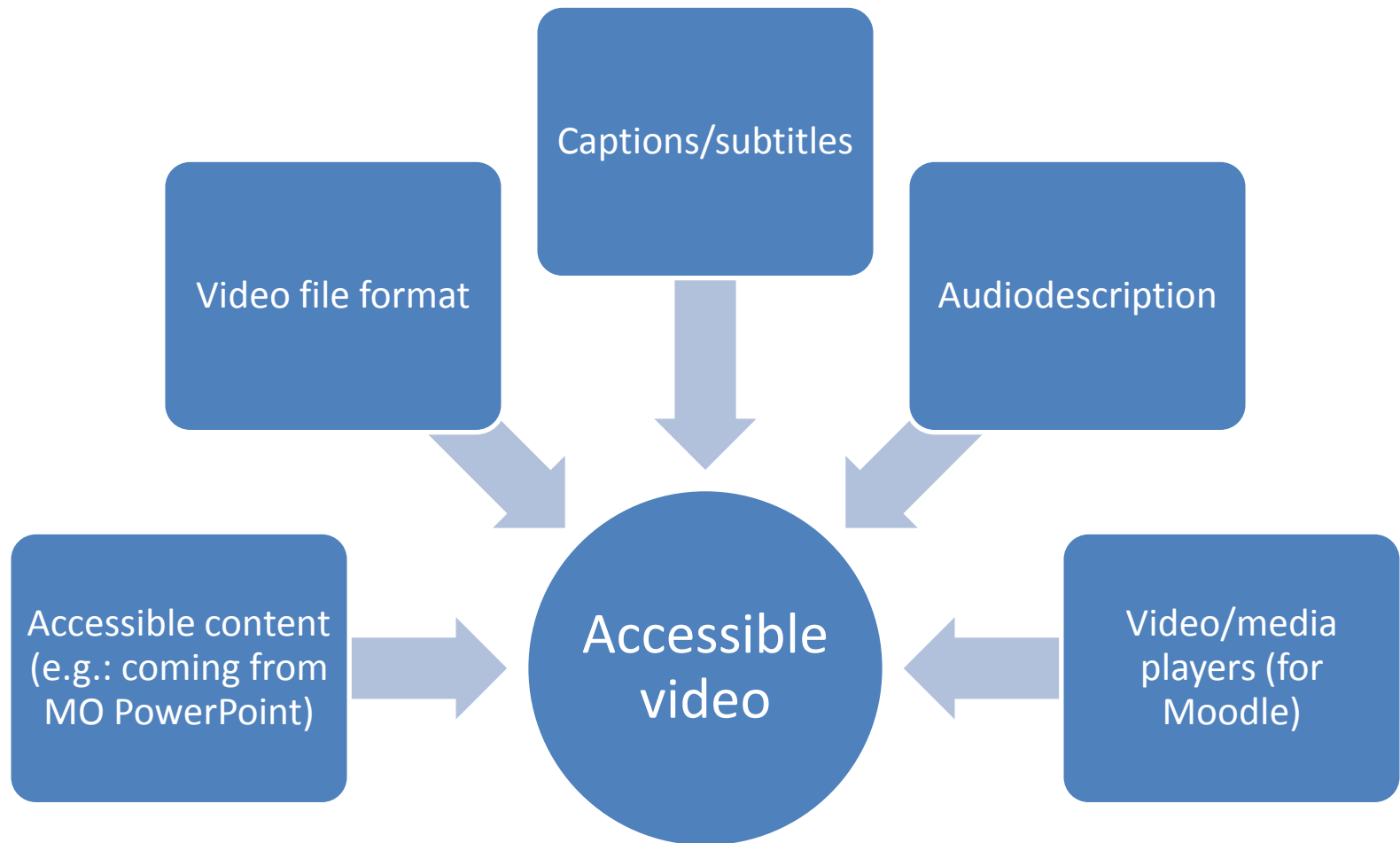
# When accessibility matters? (3)

- At the **publishing or broadcast** stage:
  - The video must be offered through an accessible media player.
  - ideally, video downloading should be allowed for use on the student's choice device.

# Accessible Videos... in EINFOSE Project

In the context of the EINFOSE project, we consider that an accessible video incorporates **subtitles** and **audio description**, and can be visualized through an accessible **media player**.

# Features of an accessible video



# Does the video file format matter?

- Yes, if possible, choose...





# Captions/subtitles

- Transcription or translation of audio content visually presented together with the content.
- Two different types of subtitles can be distinguished:
  - Subtitles that transcribes the dialogues to another language.
  - Subtitles specially focused on deaf people, not only transcribing dialogues but also voice-over, information about characters, sound effects, supralinguistic elements, etc.

# Captions/subtitles (2)

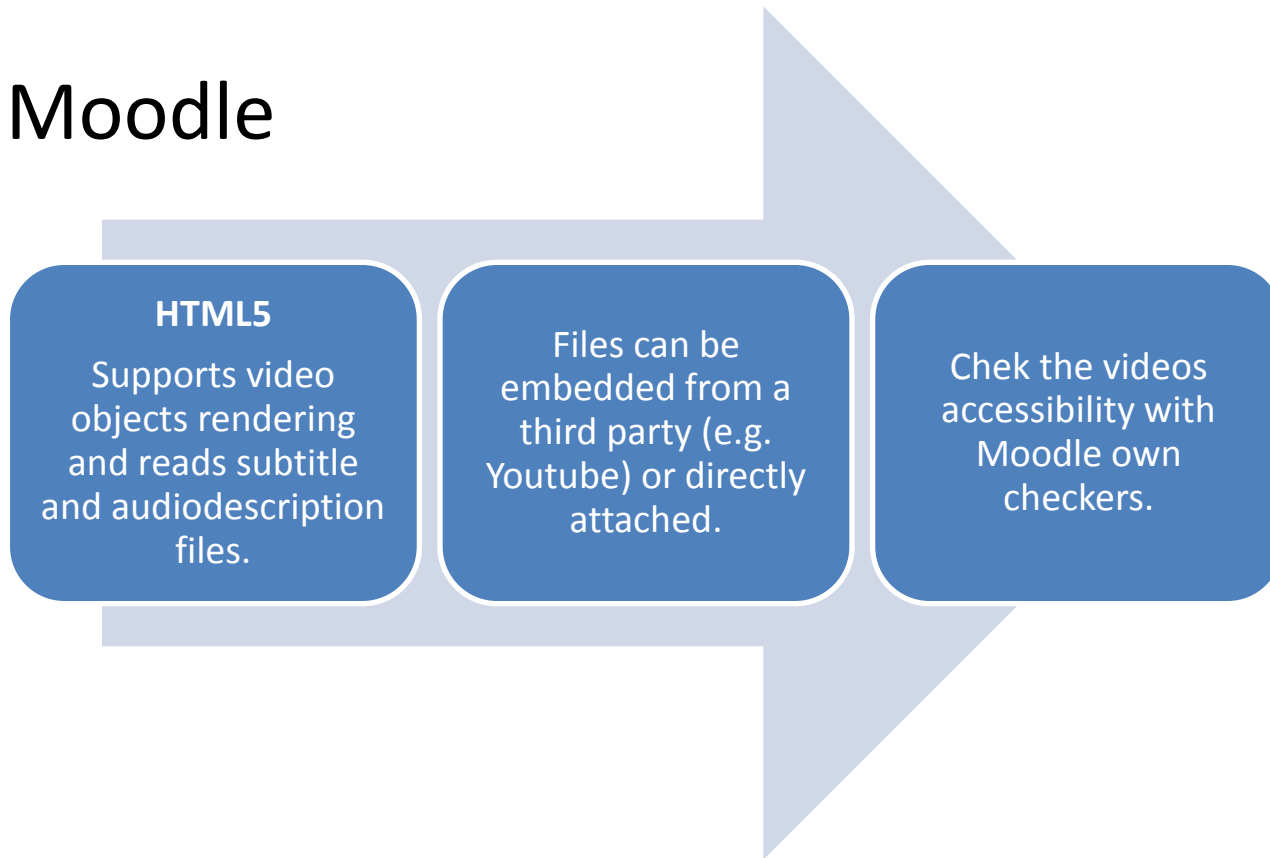
- Standards
  - International standard: ISO/IEC TS 20071-25:2017(en)
  - National standards.
    - There are specific recommendations for each language -e.g. taking into account grammar issues-; nevertheless, key guidelines are common to all languages.
    - E.g.: for Spain, UNE 153010, and recommendations of the CESyA (Centro Español de Subtitulado y Audiodescripción).

# Captions/subtitles (3)

- Guidelines for captions/subtitles
  - Faithfulness
  - Clarity of expression
  - Proper location
  - Character differentiation
  - Abbreviation
  - Suitable rhythm

# Accessible video players

- For Moodle



# Accessible Videos: standards, formats and tools

- Standard to use → Web Video Text Tracks Format (WebVTT).
- File format → .vtt format.
- Editing tool → Cadet, developed by the National Center for Accessible Media.
- Video accessibility checkers:
  - [Accessibility Developer Tools](https://chrome.google.com/webstore/detail/accessibility-developer-t/fpkknkljclfencbdbgkenhalefipecmb)  
([chrome.google.com/webstore/detail/accessibility-developer-t/fpkknkljclfencbdbgkenhalefipecmb](https://chrome.google.com/webstore/detail/accessibility-developer-t/fpkknkljclfencbdbgkenhalefipecmb)).
  - [aXe](https://chrome.google.com/webstore/detail/axe/lhdoppojpmngadmnindnejefpokejbdd)  
(<https://chrome.google.com/webstore/detail/axe/lhdoppojpmngadmnindnejefpokejbdd>).

# Accessible Videos: demonstration

- Showing the content of a vtt file for audio description.
- Using the tool Cadet to insert a vtt audio description file into a video.
- Checking the accessibility of a video.

# EPUB(3) Features

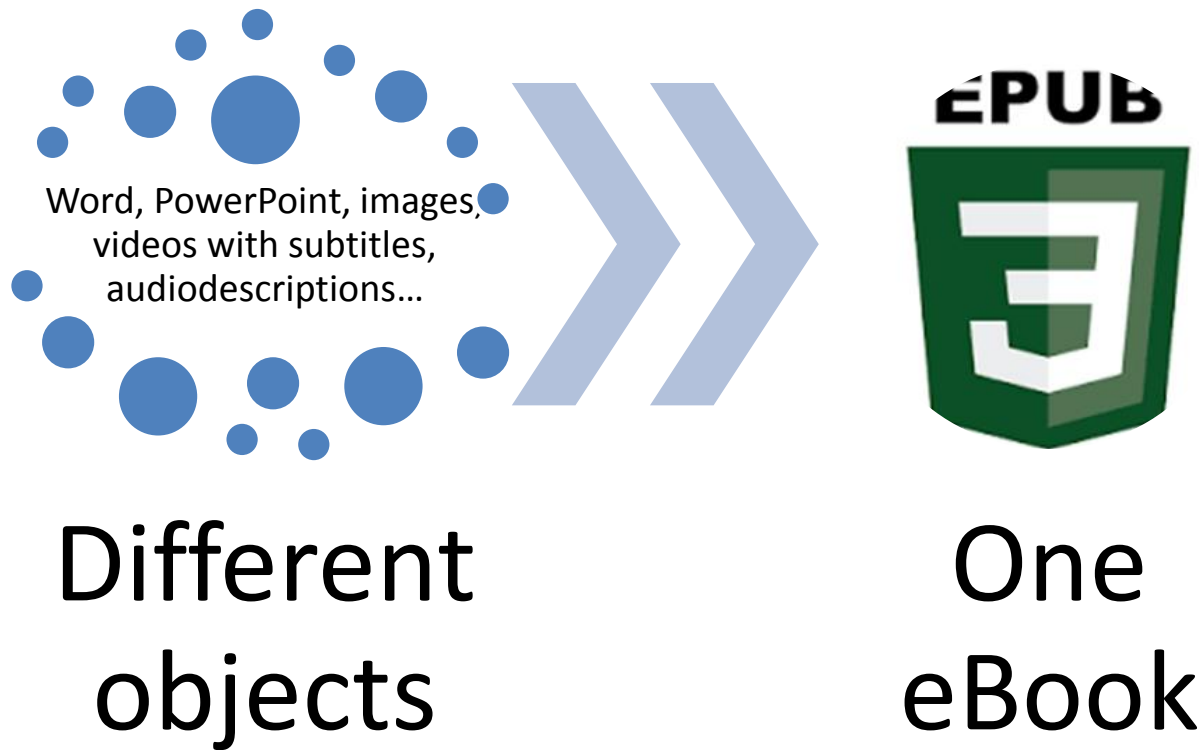
- EPUB3 is considered the "**gold standard**" in the publishing industry for the production of accessible digital books.
- When its accessibility features are used correctly, it let us produce multiple combinations, for example:
  - an audiobook with a synthesized voice;
  - electronic braille (braille read on a computer with a refreshable braille keyboard), etc.

# EPUB3 improvements

- Inclusion of multi-media content audio and video format.
- Use of HTML5 and CSS3.
- Enhanced support for character styles, sets and languages.
- Use of JavaScript for making the eBook more interactive.
- Improved reference and link creation.
- Better metadata management.



# EPUB3 workflow



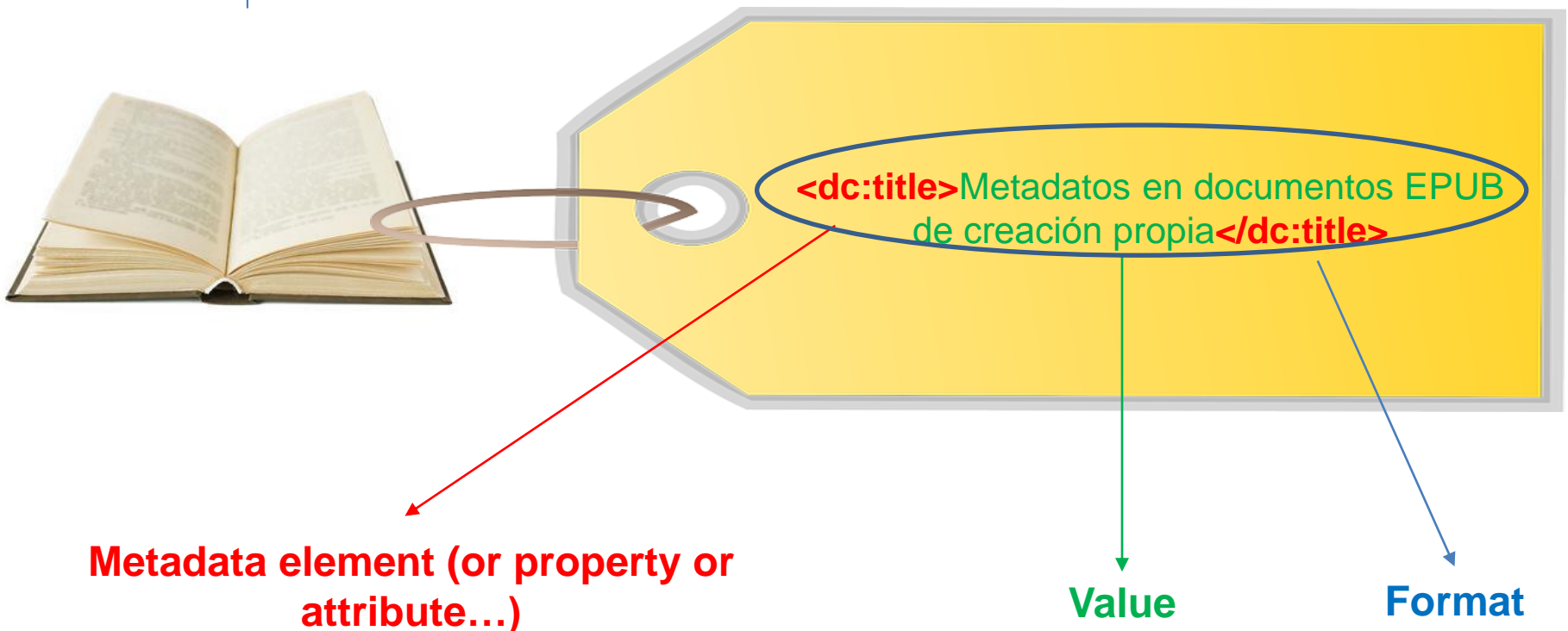
# EPUB3: demonstration

- (Automatically) converting an MS Word document into EPUB3 with [\*Robobrace\* \(robobrace.org\)](http://robobrace.org).
- Reading an EPUB3 publication with [\*Readium Epub3 App\*](https://chrome.google.com/webstore/detail/readium/febnknkadjhjahcafoaglimekefifl)  
([chrome.google.com/webstore/detail/readium/febnknkadjhjahcafoaglimekefifl](https://chrome.google.com/webstore/detail/readium/febnknkadjhjahcafoaglimekefifl)).

# Metadata components

An objec “Book”

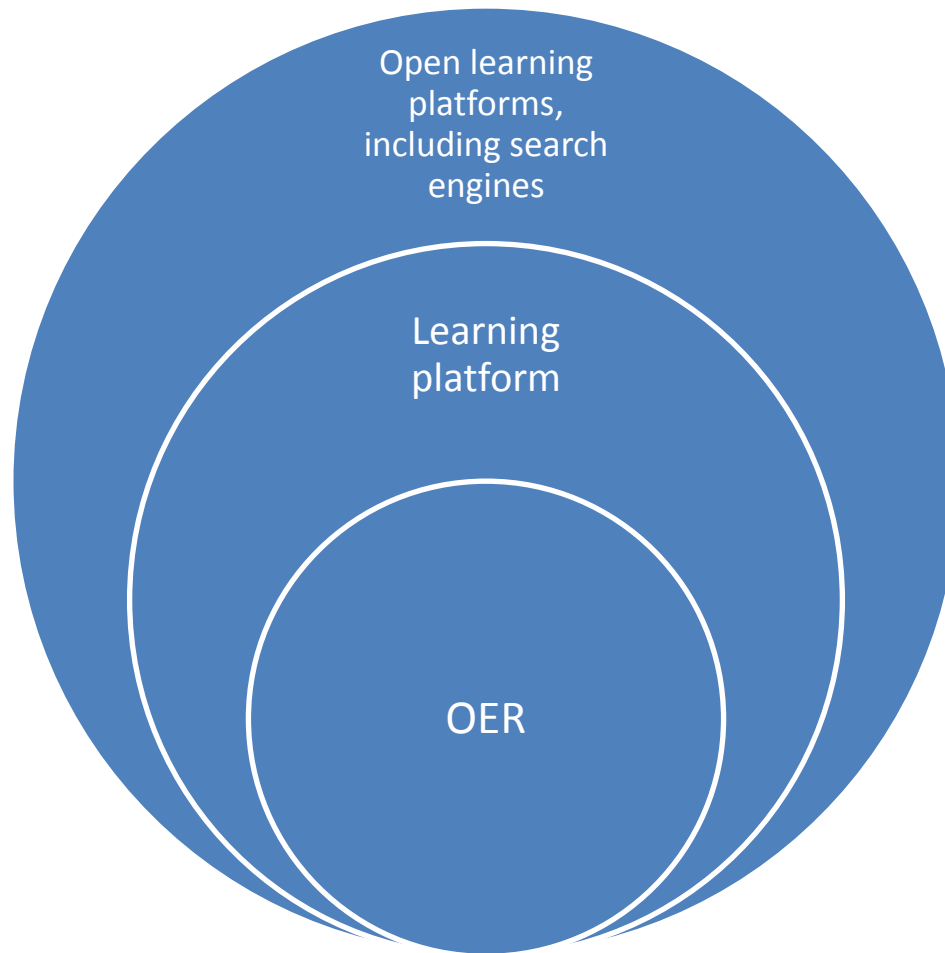
A metadata statement



# Why metadata?

- Type of metadata and Function/purpose
  - Discovery of resources
  - Versioning management
  - Technical management
  - SEO
- Discovery and use of accessible resources

# Metadata: the broad vision



# OER: which metadata elements?



At minimum, they must include the standard metadata elements:

- Author
- Title
- Subject
- Keywords
- Category
- Status
- Comments

# OER: which metadata elements? (3)



At minimum, must include 9 compulsory metadata elements:

- dc:identifier
- dc:title
- dc:language
- dcterms:modified
- media:duration

In addition, it should include accessibility metadata elements to conform with the specification *EPUB Accessibility 1.0*, namely:

- accessMode
- accessibilityFeature
- accessibilityHazard
- accessibilitySummary
- etc.

# OER: which metadata elements? (4)



It depends on the file format, but generally:

- Standard (mostly descriptive) metadata, including title and alternative information.
- Technical embedded metadata.



# OER: which metadata elements? (5)



It depends on the file format, but generally:

- Standard (mostly descriptive) metadata, including title and alternative information.
- Technical embedded metadata.

# Education platform: which metadata elements?

- Metadata in basic configuration of Moodle.
  - A reduced number of elements are populated when uploading files.
  - Metadata are not used for discovery.
- There are some options to broaden and enhance the assignment and use of metadata.
  - When learning objects are applied: SCORM packages, IMS content packages...
  - When metadata plugins are installed.

# Education platform: which metadata elements?

The screenshot displays a web interface for an education platform. On the left, there is a 'Search in Library' sidebar with several filter sections:

- Title:** A search box with a dropdown menu set to 'contains'.
- Description:** A search box with a dropdown menu set to 'contains'.
- Keyword:** A search box with a dropdown menu set to 'contains'.
- Content type:** A list of checkboxes for various content types: all / none, Collection, Data set, Event, Image, Moving image, Still image, Software, Physical object, Interactive resource, Service, Sound, and Text.
- Format:** A search box with a dropdown menu set to 'contains'.
- Duration:** A search box with dropdown menus for 'mins', 'secs', 'days', and 'hours'.
- Learning resource type:** A list of checkboxes for: all / none, Exercise, and Simulation.

The main content area on the right lists three resources, each with its title, URL, and metadata:

- Coursera.org**  
URL: <http://www.coursera.org>  
Read the notice  
Keywords: <  
Used: 1  
Viewed: 1  
Liked:
- Document SHR 1**  
URL: <http://dev.moodle24.fr/mod/sharedresource/view.php?identifier=f946e783f24f291940286ee52f07949fe99ff3ff>  
Read the notice  
Keywords: rtf,shr  
Description des ressources mutualisées  
Used: 0  
Viewed: 1  
Liked:
- Essai de publication à partir des fichiers personnels**  
URL: <http://dev.moodle24.fr/mod/sharedresource/view.php?identifier=52f7f9bd7aa07185d753198c65fa8ecb687d33ab>  
Read the notice  
Keywords: <  
Used: 0  
Viewed: 2  
Liked:
- Icone élément de cours**  
URL: <http://dev.moodle24.fr/mod/sharedresource/view.php?identifier=a7fc99d77b1283ceeb653ca1f1764fc3fec6868>  
Read the notice

# Education platform: which metadata elements? (2)

