



Accessible E-Learning and Teaching

**Checklist for Creating and Reviewing
Accessible PowerPoint Slides**

University of Bremen
**The BALLON Project – Accessibility in E-Learning and
Teaching**

These checklists were created as part of the BALLON Project (Accessibility in E-Learning and Teaching), which was launched at the University of Bremen in January 2021. The aim of the project is to develop a support system for teaching staff and students for accessible digital learning and teaching at Bremen universities as part of the implementation of digital and hybrid studies. Further information and support are available directly from the BALLON Project. This document contains descriptions on how to implement accessible design as well as checklists for reviewing different formats and materials: Word, PDF documents, PowerPoint, websites, online classes, and information videos. You can also download the checklists separately on the BALLON website under “Checklists and Tools”:

[Checklist for accessible Word documents](#)

[Checklist for accessible PDF documents](#)

[Checklist for accessible PowerPoint slides](#)

[Checklist for accessible online classes](#)

[Checklist for accessible websites](#)

[Checklist for accessible information videos](#)

Checklists for Creating and Reviewing Accessible Digital Content

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Introduction

Barriers at universities

There are a wide range of different hurdles at universities that result in unequal access to university education and can even prevent access in the first place. These barriers are distributed across different inequality dimensions such as age, background, gender, disability, and other aspects. The resulting disadvantages experienced by some students have become further exacerbated since 2020 in the course of the COVID-19 pandemic and the associated switch to digital learning and teaching formats. This transformation posed a challenge to students, teaching staff, and the administration alike – and continues to do so in some cases. Disadvantages, including greater social distance, limited communication, and sometimes poor technological infrastructure, constitute barriers for all students, but affect students of already marginalized groups in particular. The **barriers** in e-learning and teaching raise a number of questions:

- *How should I study for an exam if the learning material is only available as an audio file, which is inaccessible to me due to my deafness?*
- *Home alone with a poor internet connection and/or with German as a foreign language – how will I ever be able to pass the course?*
- *My student is unable to read the slides – how can I make them compatible for a screen reader?*
- *What exactly are digital barriers?*

Aim and target group of the checklists

The checklists provide general **information on creating and reviewing accessible digital content**.

The checklists are aimed at everyone who is interested in supporting equal-opportunity access to digital content, with a particular focus on accessible e-learning and teaching. For this reason, they are intended especially for **teaching and administrative staff** who play a decisive role in student access to digital studies. The aim is to raise awareness of the topic of digital accessibility and provide a guide to

creating, designing, and reviewing Word and PDF documents, PowerPoint slides, websites, online classes, and information videos. Moreover, the checklists refer to helpful tools and further information. Accessible study material from teaching staff, work from students, and information material from administrative staff contribute toward a diverse and inclusive university and should be the norm. From easy-to-use forms and PDFs legible to screen readers, to high-quality online videos with live subtitles: every barrier prevented and dismantled ultimately benefits *everyone*.

Legal foundation

In some areas of university, full accessibility is already **legally mandated** – for example, by the UN Convention on the Rights of Persons with Disabilities, the Basic Law of Germany, the German Higher Education Framework Act, the Bremen University Act, and other legislation. You can find details about the legislation under “[Further Information](#)” in the “Guide for Teaching Staff: Supporting Fully Accessible Teaching” (KIS, University of Bremen, 2018). The foundation for accessible online content is provided by the global standards of the [Web Content Accessibility Guidelines \(WCAG\) 2.1](#), upon which the German [Accessible Information Technology Regulation \(BITV\) 2.0](#) is also based. These standards are currently outdated and a draft of the [WCAG 3.0](#) has already been published. As a result, Bremen universities are obligated to enable equal access to studies for all students – irrespective of social dimensions such as disabilities or illnesses.

How to use the checklists

The checklists can be accessed or used in two ways:

1. Are you about to start designing or creating materials and would like to make sure they are accessible? In this case, pay attention to the sections titled “**Implementation**” in the documents. Here you can find the aspects that should be kept in mind as well as information on specific settings in the relevant programs.
2. Have you already created your materials and would like to test their accessibility? You can review your materials yourself using the “**Checklists**.” Cross off the applicable checkpoints and use the information under “**Implementation**” to work through aspects that have not yet been fulfilled.

The checklists refer to work with the programs **Microsoft 365 Professional Plus 2019** and **Adobe Acrobat Pro**. Your software versions may differ in terms of the respective functions or presentations. You can find support at [Microsoft: Make your Word documents accessible to people with disabilities](#) and [Adobe: Create and verify PDF accessibility \(Adobe Pro\)](#).

Alternatively, you can use OpenOffice or LibreOffice. You can find guides for these programs here: [Accessible PDFs with OpenOffice and LibreOffice](#). In addition to Adobe Acrobat Pro, you can also use [axesPDF](#) and [Kofax Power PDF](#).

1. Creating accessible content: PowerPoint (PPT)

The information provided in this chapter can help you create PowerPoint slides that are as accessible as possible. We recommend noting the information in subchapter 3.1 "[Implementation in PowerPoint](#)" before or while creating slides. This way, you can keep any necessary work on corrections to a minimum. The list in subchapter 3.2 "[Checklist for PowerPoint](#)" is intended to help you check existing documents for accessibility yourself. If you only have slides in the form of a PDF document, please see chapter 2 "[Creating accessible content: PDF](#)" in this guide.

1.1. Implementation in PowerPoint

Slide design

Here you can find information on how to improve the accessibility of your PowerPoint slides with appropriate design and formatting. It is important to treat the content and layout as distinct parts of the document. Combined with background information including image descriptions, the layout is required for compatibility with screen readers. Only the content element is relevant for visibility. Open the PPT document and implement the following settings step by step using the PPT menu bar. If the functions cannot be found in the location described, you can find them using the search function in the menu bar.

a) Corporate design:

It is advisable to use the university's own template from the corporate design portal (see "[Further information](#)"). Otherwise, you can utilize pre-configured slide layouts in PPT (Home – Layout). Avoid making manual design changes with spaces and empty rows. When using pre-configured slide designs, there is the advantage that some of the underlying settings (e.g. reading sequence) already meet the requirements for accessibility. But beware: A (manual) check is still required after preparing the file!

b) Slide numbers:

These are indispensable for orientation and should always be inserted (Insert – Slide number).

c) **Line spacing:**

In order to ensure the text is also legible with limited eyesight, the line spacing should ideally be 1.5.

d) **Font:**

To make sure the font is legible and compatible for screen readers, a common sans-serif font style like Arial should be used. Employees of the University of Bremen use the fonts defined in the corporate design (Sharp Sans or Arial). The font size must be at least 18 pt, or 24 pt for headings.

e) **Structure:**

The document must be structured clearly and consistently for the text to be logical and legible for everyone. The correct structure can be created in the master slide view (View – Slide master). Make sure each slide only contains a few keywords. Use bullet points where possible, rather than whole sentences.

f) **Slide titles:**

Every slide needs a slide title, as this is necessary for the structure of the document. A screen reader uses slide titles to navigate. For custom layouts, insert a placeholder for the slide title instead of a text field (View – Slide master – Insert layout – Insert placeholder – activate the checkmark for “Title”).

g) **Columns:**

Text columns should be added automatically, not manually (Home – Paragraph – Add or remove columns). The text is divided into the chosen number of columns, and the width and spacing can be adjusted individually. Screen readers don't recognize manual columns.

h) **Lists:**

Lists and bullet points need to be configured using the corresponding functions to ensure screen readers can recognize the text as a type of list and read it out correctly. Do not use manual lists. Instead, different types can be selected and adjusted via “Home – Paragraph”: bullet points, numbering, and multi-level lists. Roman numerals should be avoided as bullet points.

i) **Text flow:**

Texts must be left-aligned and unjustified for legibility. Margin justification that is typically used can distort the text and make it unreadable.

j) **Hyphenation:**

Refrain from hyphenation for splitting words. This is for several reasons: It is

not always correctly applied when converted to PDF files, sometimes screen readers read out hyphens as “hyphen”, and hyphens can impair legibility for people with learning difficulties or reading and writing disabilities.

k) **Contrast:**

All content must have a sufficient color contrast between the foreground and background. Low-contrast content is a visual barrier. The combination of red and green should generally be avoided. Using the function “View – Color/gray scale – Black and white,” you can check whether content has enough contrast to be discernable in black and white. Under “[Further information](#),” you can find an external tool for automatically testing contrasts. The contrast ratio should be at least 4.5:1. Highlighting should follow the multi-channel principle. Color effects should be combined with bold print or similar. This makes the highlighted content also distinct in black and white.

l) **Reading sequence:**

PPT tells screen readers the sequence that slide elements should be read in. For this reason, you should check the sequence and make corrections if necessary (View – Arrange – Selection area – arrange elements via arrow keys). Here it is important to note that the lowest element is read by the screen reader first, and the highest element last. Alternatively, you can use the function “Review – Check accessibility – Reading sequence area.” But beware: The warnings produced by the accessibility check regarding reading sequence do not always disappear in PPT. If you have already checked and corrected the reading sequence, you can simply ignore these warnings. Likewise, PPT may fail to automatically recognize an incorrect reading sequence. A manual check should therefore always be performed.

Pictures, tables, and integrated media

In order for the content of integrated media, images, and tables to be comprehensible to everyone, including via screen readers for people with visual impairments, a number of settings need to be implemented. These are explained below and improve accessibility for everyone.

a) **Image properties**

The images used should be clear to everyone. It is important to use a suitable size and resolution. Black and white content should also still be discernable.

b) **Alternative texts:**

All information from graphic elements and tables also has to be provided via a non-visual channel, in accordance with the multi-channel principle. Here, alternative texts can be used as image descriptions that can be inserted in PPT (right click on the image > Edit alternative text). Logos, symbols, pictograms, photos, diagrams, and other types of graphics likewise require an alternative text. Where images are only intended for layout design, they should be marked as “decorative” (right click on the image > Format image > Alternative text > activate the checkmark for “Mark as decorative”). This is necessary so that people with impaired vision can have a screen reader read out relevant content. An alternative text should be worded briefly, precisely, and objectively to describe the core message of the image. Everything that can be seen on the image should be described objectively, so that people with and without vision experience the same content. In principle, image descriptions should be structured consistently, starting with general information before going into detail. Do not use the automatic function “Generate description for me,” as the result will not meet requirements.

c) **Grouping:**

The following points should be kept in mind when grouping elements on PowerPoint slides for the purpose of accessibility: PowerPoint treats grouped elements like graphics and requires an alternative text to be inserted for them. The problem here, however, is that after inserting the alternative text for the grouped elements, only the alternative text is read out by the screen reader. The content of any text fields contained in the group as well as alternative texts for individual elements will no longer be read out. The decision therefore has to be made whether people who rely on the use of a screen reader should benefit more from the information content of individual graphical elements or whether an informative alternative text for the entire group is enough to convey the content. In other words, you have two options:

1) *Ungroup*

If you decide that the content of individual elements should be read out by a screen reader, we recommend ungrouping the elements and only

reactivating the group only while editing the slides: Right click on the group – Group – Ungroup.

2) *Group as an image*

If you think an alternative text is enough to convey the information content of the group, we recommend saving the group in JPG format (right click on the group – “Save as image”), inserting it into the slides as an image, and then adding an alternative text. This way, you can avoid potential error messages in PowerPoint regarding the reading sequence of individual elements. The saved alternative texts will also be transferred when exporting the slides to a PDF document.

d) **Tables:**

Tables need to have a defined “header line” as a point of reference for screen readers (Table format options – activate the checkmark for “Header”). Here you should also add alternative texts that convey the content of extensive tables (right click on the table – Edit alternative text). Moreover, tables should only be used for tabular data and not for layout design. Use the table tool to insert tables. Avoid Excel spreadsheet tables as these result in errors during export and need to be fixed.

e) **Videos:**

Video files need to contain subtitles for people with hearing impairments, including a translation into (German) sign language if applicable. Audio or video descriptions are required for people with visual impairments.

f) **Audio:**

Audio files need to be accompanied by a transcript or an audio description. This is important for people with hearing impairments or no hearing at all, and in the case of language barriers.

g) **Links:**

Links and references should be recognizable as such in the text. They must be formatted accordingly as a link and labelled with link text and a screen tip. The link text and screen tip should contain a suitable name for the webpage destination. Make sure a working link is entered.

Presentation settings

Here are some possible settings listed according to the KISS principle (“keep it short and simple”):

a) **Slide transitions:**

Avoid automated and complicated slide transitions. Use simple transitions instead.

b) **Animations:**

They can be distracting or make it hard to discern content. Animations are best avoided for this reason. Any animations that are necessary should be kept as short and simple as possible.

Document properties

At this level, you can find information on settings that you should configure regardless of the content of your documents in order to increase the accessibility of your text.

These properties are relevant for everyone, especially when publishing PPT presentations.

a) **Meta information:**

Accessibility also requires certain document properties (File – Information). A document title and the author are entered here.

b) **Document language:**

Correctly configured document languages are important for voice output. They can be assigned individually to every document (Review – Language – Language settings/Set proofing language). The defined document language must be identical to the language of the text content, otherwise this can result in readout errors with screen readers. If individual paragraphs in the document are in another language, they can be assigned a different language setting.

Additional information for accessibility

In this section, general criteria are listed that optimize the accessibility of your slides and the presentation content, removing any existing barriers. Clear information that is accessible and transparent for everyone is helpful in research and teaching.

a) **Language:**

The language you use should be based on the target groups. However, to make sure everyone can understand the language, simple language is important. Sentences should be clear and unconvoluted. Abbreviations and foreign words should be explained or listed in a glossary, and a gender-appropriate language should be considered.

b) **Testing accessibility:**

The function “Check accessibility” (Home – Review – Check accessibility) in PPT reveals a number of typical mistakes and should always be performed after creating content. Once the check is done, the detected errors must then be corrected.

c) **Transcript:**

PPT is normally used for a presentation. Offer the audience a full transcription. This is important for people with hearing impairments or no hearing at all, and in the case of language barriers. In fact, a transcription is generally helpful for all participants.

d) **Subtitles:**

PPT is now able to integrate automatic subtitles for a live presentation (Screen presentation – Subtitles). They only need to be activated and adjusted via the settings.

e) **Multi-channel principle:**

With PPT presentations, it is important that the verbal presentation is identical to the slide content. This way, all the information is conveyed by at least two channels. For instance, key information should always be visible in writing on the slide, quotes read out in full, and the content of images described.

f) **Publication as a PPT:**

We recommend saving and publishing your presentation as a PowerPoint document. The PPT file is often exported and published in PDF format. However, some important properties of the PPT are lost in this process, which reduces the accessibility of the PDF. This can be fixed with subsequent corrections in the PDF (see chapter 2 “[Creating accessible content: PDF](#)”). To export the file as a PDF, proceed as follows: “File – Save as – Options – Document structure tags for accessibility – activate the checkmark”. If a PPT format is

unwanted, Word is a possible alternative. Convert the slide content to Word and begin each slide section with the slide number and slide title.

1.2. Checklist for PowerPoint

Here you can find information for reviewing your PowerPoint presentation. This is intended to help you check existing slides for any barriers that may exist. You can also use the checklist at the end of the chapter for implementation.

Slide design

Does your draft match the prescribed corporate design?

Please always consult the materials provided by the University of Bremen. This allows you to prevent a number of barriers from the outset.

Does your document have full and continuous slide numbering?

The slide numbers are always contained in the PPT template of the University of Bremen. Please do not delete them. When using custom templates, insert the slide numbers as they are essential for orientation.

Does your line spacing amount to 1.5?

The text body should also ideally have 1.5 line spacing on slides. The spacing of other content should not fall below 1.25.

Have you used a sans-serif font with a size of at least 18/24 pt?

The font type is likewise predefined in the PPT template of the University of Bremen (Arial, Calibri is also possible in custom templates for example). Please use this font. The font size is also specified depending on the content type and should not fall below 18 pt (text body) or 24 pt (heading).

Is your document structured logically and consistently?

A logical document structure helps a screen reader read out the content correctly. A logical structure is already configured in the PPT template of the University of Bremen. Please do not change it, and check for any errors after completing the draft or using custom templates.

Does each slide only contain a few bullet points?

Has the content been prepared in an appealing and legible manner? Prefer bullet

points over sentences. Also, more slides are better than overfilled and unreadable content.

Does each slide have an individual slide title?

The PPT template in the corporate design of the University of Bremen contains different slide types, each including a slide title. Make sure that the slide title is kept and also present in custom slide templates. This is because it determines the structure for screen readers, for example.

Did you create columns using the corresponding functions?

Text columns should always be inserted automatically using the program's internal column function. This is important to be read out correctly by a screen reader.

Did you create lists using the corresponding functions?

Lists and bullet points should also be generated using the relevant PPT function, and not manually.

Is your text left-aligned and unjustified?

In contrast to common practice, you should format the text left-aligned and without justification. This allows people with dyslexia and reduced vision to follow the text flow better.

Is your color contrast sufficient (minimum ratio: 4.5:1)?

Check your content has enough contrast – both in black and white and for color content. No red/green contrasts may exist, and the content should still be discernable in black and white.

Have you checked and revised the reading sequence?

Screen readers read elements in the order they were inserted. Therefore, it may be necessary to correct the content sequence.

Pictures, tables, and integrated media

Are all your images embedded in sufficient size and resolution?

Generally, images may only be used when their size and resolution satisfy an

accessible standard of quality. Here too, you should check how discernable they are in black and white.

Do all your images have an appropriate alternative text?

Following the multi-channel principle, information in graphics must also be available via a non-visual channel. All images should therefore have an alternative text as an image description.

Have you marked layout graphics as decorative?

Where images are only intended for layout design, they should be marked as “decorative.”

Have you added alternative texts correctly to grouped elements?

In order for alternative texts for grouped content in PPT to be informative for everyone and compatible with screen readers, please check the grouped elements on your slides. If the content is conveyed in the alternative texts for the individual elements, only group them while editing the file and then ungroup the elements afterwards. In the case of a more complex group, we recommend inserting an alternative text to convey the group content.

Do all your tables have a header line?

Tables need to have a defined “header line” as a point of reference for screen readers.

Do you only use tables for tabular data?

Tables should only be used for tabular data and not for layout design.

Do extensive tables have an alternative text?

Alternative texts should also be added here to convey the content of large tables.

Do videos include subtitles and video descriptions?

Embedded video files should contain subtitles, including a translation into (German) sign language if necessary. Moreover, audio descriptions or video descriptions are necessary.

Are all your audio files accompanied by a transcription?

A transcription or audio description should be created and provided for audio files embedded in the presentation.

Do all your links have a corresponding description and screen tip?

Are all links formatted as a link and are they labeled with a link text and screen tip? Both must reflect the content or destination of the link.

Presentation settings

Are your slide transitions simple and free from time limits?

Remove any automated, complex slide transitions with time limits and only use simple transitions, as specified in the PPT template of the University of Bremen.

Have you avoided animations or only used them sparingly?

Animations can be distracting. Remove them whenever possible.

Document properties

Have you entered all the meta information?

Are the corresponding document properties present and correct? If necessary, add a document title and the author.

Is the document language configured correctly?

The defined document language should be identical to the language of the text content, otherwise this can result in readout errors with screen readers. This goes for the entire document as well as any individual paragraphs in other languages.

Additional information for accessibility

Is the language used appropriate for the target group?

The language used should be based on the target group and meet the normal requirements of the University of Bremen.

Is the language easy to understand?

Make sure your content is written in a clear language with easy-to-understand

sentences or bullet points. This facilitates teaching and learning, also in a university setting.

Are foreign words or technical terms explained?

Have you explained all abbreviations and foreign words or listed them in a glossary?

Have you performed an accessibility check and corrected any errors?

Run an internal PPT accessibility check and fix any errors that are detected.

Have you created and handed out a transcript for the presentation?

PPT is normally used for a presentation. Offer the audience a full transcript. Although it takes time to prepare a transcript, it comprehensively records spoken content.

Are internal PPT subtitles activated?

Check whether automatic subtitles in PPT make sense for your presentation.

Have you followed the multi-channel principle for all content?

All information should be provided via at least two channels to improve accessibility. Therefore, check whether all written content is also conveyed verbally in the presentation, whether a slide or transcript is available for all spoken content, and whether color highlighting is additionally formatted with bold text for example.

Have you published the presentation as a PPT?

Have you saved and published your presentation as a PowerPoint document? When exporting PPT to PDF, more barriers to accessibility should be expected due to the technical requirements. For this reason, avoid exporting to PDF format unless you then edit the converted file. Inserting the slide contents into a Word document is a possible alternative.

Further information

Contrast Checker:

<https://contrastchecker.com>

Corporate design of the University of Bremen:

<http://www.uni-bremen.de/corporatedesign>

KIS and kivi, University of Bremen (2020): Guide for Teaching Staff.

[LoB Broschuere 2020.pdf \(uni-bremen.de\)](#)

ZMML, University of Bremen (2021): Accessible Digital Teaching. Tips for Teaching Staff: General, Lectures and Seminars, Accessible Documents and PowerPoint Presentations:

<https://www.uni-bremen.de/zmml/lehre-digital/zugaengliche-digitale-lehre>

List of links

Create and verify Adobe PDF accessibility (Adobe Pro):

<https://helpx.adobe.com/de/acrobat/using/create-verify-pdf-accessibility.html>

axesPDF:

<https://www.axes4.com/de/produkte-services/axespdf>

BALLON:

<https://www.uni-bremen.de/digitale-transformation/cdo-projekte/ballon>

Accessible Information Technology Regulation (BITV) 2.0:

https://www.gesetze-im-internet.de/bitv_2_0/BJNR184300011.html

Kofax Power PDF

<https://www.kofax.de/products/power-pdf>

Accessible PDFs with OpenOffice and LibreOffice:

<https://www.netz-barrierefrei.de/wordpress/barrierefreies-publizieren/barrierefreie-pdfs/barrierefreie-pdfs-mit-openoffice-und-libreoffice/>

Microsoft: Make your Word documents accessible to people with disabilities:

<https://support.microsoft.com/de-de/topic/gestalten-barrierefreier-word-dokumente-f%C3%BCr-personen-mit-behinderungen-d9bf3683-87ac-47ea-b91a-78dcacb3c66d>

Web Content Accessibility Guidelines (WCAG) 2.1:

<https://www.w3.org/TR/WCAG21/%23contrast-minimum>

Web Content Accessibility Guidelines (WCAG) 3:

<https://www.w3.org/WAI/standards-guidelines/wcag/wcag3-intro/>