







DIGITAL ACCESSIBILITY TOOLKIT

SHORT GUIDELINE

Programme Reform of TVET in Viet Nam

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OBJECTIVE AND AUDIENCE





This toolkit promotes the inclusion of people with disabilities and other vulnerable groups in society by supporting the creation of accessible digital content, documents and learning sessions, ensuring that all people can equally participate in digital activities. It builds on existing accessibility guidelines such as the toolkit from Christian Blind Mission (CBM), the Toolkit on Disability for Africa of the United Nations and several national and international standards. It makes these international standards and insights available to the Vietnamese audience and provides additional information on locally available technology and resources.



This toolkit was created to provide all interested persons and especially education institutions, vocational training institutes, educators, students, trainees, in-company trainers, and other relevant stakeholders in the education sector with the knowledge and tools to create and use accessible digital products.



There are two versions of this toolkit: (i) a complete version that gives a comprehensive overview and contains additional guidance for people with knowledge about information technology (IT), such as software developers, IT officers and related persons; (ii) and a short version that provides basic knowledge to persons who create or work with digital content, such as teachers, trainees, students, management, and administration officers. This report is the short version. You can find the full version on tvet-vietnam.org.

1.1 INCLUSION IN SOCIETY AND EDUCATION

Worldwide, **15%** of the population live with some form of disability (United Nations, Report on the World Social Situation 2018 2018). In Viet Nam over **7%** of the population aged two years and older, or around 6.2 million people, live with a disability (General Statistics Office (GSO) – United Nations Children's Fund (UNICEF) 2017).



*

15%

of the population live with a disability in the world

7%

of the population live with a disability in Vietnam

The Convention on the Rights of Persons with Disabilities 2006 (CPRD) is an international treaty signed by the United Nations on the Protection of the Rights of Persons with Disabilities signed by 164 countries worldwide. It emphasizes that people with disabilities should have full equal rights under the law and be able to participate fully in society. However, many people with disabilities and other vulnerable groups such as ethnic minorities, migrant workers, and others around the world face barriers to participating in social, educational, and economic activities. These include barriers in and around buildings and facilities, attitude barriers, economic barriers, and others.

To ensure that everyone can equally participate in society, countries worldwide

need to promote inclusion of people with disabilities and other vulnerable groups together. One important element of strengthening inclusion is improving accessibility of social, educational, and economic activities for marginalised groups. Accessibility means that a product, device, service, or environment can equally be accessed and used by everyone, including people without disabilities and people with disabilities, the elderly and youth, and people with different economic and social backgrounds.

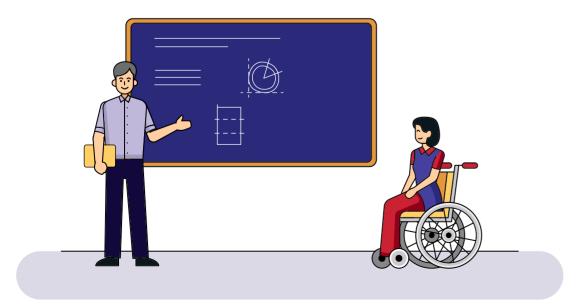
Promoting inclusion and accessibility in education is especially important because inclusion is a door to accessing information, participating in society, politics, and the labour market. **Inclusive education** aims to remove the barriers limiting

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the participation and achievement of all learners in different learning environments. It respects diverse needs, abilities and characteristics and eliminates all forms of discrimination (UNESCO, Inclusion in education n.d.). Every learner matters equally and has the right to receive relevant, high quality, equitable and effective educational opportunities (UNESCO 2020). In inclusive education environments, people with disabilities and without disabilities and people from different social, ethnic, and economic backgrounds are taught together. All learners can benefit and learn from each other and support each other on the learning journey.

Accessibility in education means ensuring that all learners can access facilities, training programmes and materials, learning platforms, classrooms, all information related to learning and the support structures of the education institutions. Therefore, implementing inclusive

education requires careful planning and structural changes to ensure that all learners have enough and suitable means and methods to equally participate in the learning environment, especially people with disabilities. Technical and Vocational Education and Training (TVET) plays a special role in the education system as it provides vocational skills and knowledge that facilitate the entrance into the labour market, amongst others for students who did not graduate from upper secondary general education. Inclusive TVET can according to the International Labour Organization TVET promote the inclusion of people with disabilities in employment and reduce income inequality (International Labour Organization 2013). Inclusion in TVET is also an explicit goal of the 2030 Sustainable Development Goals (SDGs). The SDGs include the target of ensuring equal access to vocational training at all levels for people with disabilities along with other vulnerable groups (Target 4.5).



1.2 DIGITAL ACCESSIBILITY

Information and Communication Technology (ICT) is ubiquitous in everyday life. It also becomes more and more important in general education and TVET. From digital communication about education and training to digital learning materials and e-learning platforms, technology is shaping the school and vocational education environments. The technology offers new opportunities for interactive and distance learning and teaching. This has been especially relevant during the COVID-19 pandemic that began in 2020 as it forced schools and TVET institutes all over the world to shut down. Many digital solutions were applied to replace or complement the traditional classroom.

Nevertheless, technology can sometimes also create new barriers for people with disabilities and other disadvantaged groups, preventing them from accessing education and training. Especially people with disabilities face many challenges when they are confronted with digital tools and materials that are not designed to be accessible. People with visual disabilities might face issues when working on a learning platform that is not compatible with screen reader software or which has low contrast. People with auditory disabilities could have difficulties watching educational videos if no subtitles or captioning is provided.

Therefore, it is important to promote and achieve **Digital Accessibility**. This means that digital tools, platforms, and materials are designed in a way that they can easily be used by many people with different abilities.

This can be ensured by designing a



document or product according to the principles of **Universal Design**.

According to the CPRD (United Nations 2006), universal design can be understood as the design of products, environments, programmes, and services to be usable by all people, to the greatest extent possible, without the need for adaptation or specialised design. In general education and especially in TVET, universal design means that learning materials, learning platforms, training programmes and facilities are designed technically accessible and that the training programmes are also using a variety of training techniques to maximize the accessibility of learners according to their learning styles (ILO 2013).

For example: A teacher has a lesson plan and training materials which include many pictures. If information is only conveyed through pictures, not text, then it will be difficult for blind students to access that information. A screen reader

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software cannot describe the content of the picture, it can only read the text. To create training materials according to universal design principles, the teacher would add explanatory text for each picture. Instead of using an inaccessible lesson plan and only adapting it when there is a person with a disability in the class, the teacher will design the lesson plan in the most accessible way from the beginning.

Universal design has many advantages. Designing documents in this way will reduce the time for adjustments and changes afterwards. The documents can be widely shared, and people can access them on their own, not being dependent on another person's guidance. This contributes to ensuring equality between people with and without disabilities. When designing a document in this way, we express valuing diversity and wanting to share the documents not only with a majority but with all people. We aim not to only make people without disabilities, but a diversity of people with different abilities and interests the standard. Universal design improves the access and understanding of all people because it offers many ways to learn and use documents, mirroring the diversity and different learning styles of humans.

When a material or product is not universally designed yet or if it was universally designed but still does not meet the demand of a person, we can use the reasonable accommodation approach.

Reasonable accommodations according to CPRD are necessary changes or adaptions not imposing a disproportionate or undue burden, where needed in a particular case, to ensure to persons with disabilities the enjoyment or exercise on an equal basis with others of all rights and fundamental freedoms. In each specific case, people can adjust a document, process, or product so that a certain person can use it. Reasonable accommodation in the education system includes allowing a student more time during tests, on request providing alternative materials to the original learning materials, having a sign language interpreter when needed or choosing a room on the ground floor for class if there is a person in a wheelchair and no suitable elevator is available.

Reasonable accommodation is a way to react to a specific emerging problem for a specific person. It helps us to act flexibility and find adaptions in education and training for every learner. Nevertheless, this model has its limitations. Whenever there is no one to support or people lack skills and knowledge about potential accommodations, then the persons having difficulties will not be able to access the service, product, or environment. Moreover, using reasonable accommodations on a larger scale can be challenging as it is an approach focused on individual solutions. This is the reason why we need the universal design approach: it is a process for creating accessible documents and other products from the beginning. Using universal design will reduce the need for reasonable accommodation. However, there are still situations in which universal design is not sufficient to ensure each need will be met. In these cases, accommodations are needed. Therefore, we will follow the universal design approach and add reasonable accommodations when needed.



The CPRD is an important framework for inclusion and accessibility. All states which signed the CPRD must implement the rights explained in the convention in a way which respects differences and ensures that disabled persons are not forced to endure degrading circumstances in the exercise of their human rights (Arstein-Kerslake 2018).







The Convention underlines eight guiding principles, including respect for the inherent dignity and individual autonomy, non-discrimination, full and effective participation and inclusion in society, respect for difference and acceptance of people with disabilities as part of human diversity, equality of opportunity, accessibility, gender equality and respect for the rights of children with disabilities (Article 3 of CRPD (United Nations 2006)). Moreover, Article 9 CRPD highlights accessibility as one of the essential civil and political rights. It has to be ensured that people with disabilities have access to the physical environment, to transportation, to information and communication technology, and to other facilities and services open or provided to the public (United Nations 2006). As a member of CRPD, Viet Nam recognizes and aims to protect and ensure all rights of people with disabilities that are presented in the convention (United Nations 2018).

To ensure digital accessibility, there are several common international standards and design principles used. The World Wide Web

Consortium (known as the W3C: https:// www.w3.org) issues the most widely used guidelines for accessibility of web content; referred to as Web Content Accessibility Guidelines (WCAG). WCAG provides guidance regarding the accessibility of web-based resources, including hypertext documents and, more recently, interactive applications. WCAG 2.1 has 13 guidelines (W3C, Introduction to Understanding WCAG 2.1 2018). Each guideline is specified by testable success criteria, which correspond to three levels of conformance. These criteria are relevant for IT professionals and can be found in more detail in the complete version of this toolkit and on the website of W3C.

Viet Nam also enacted several national legislations to provide guidance and standards on accessibility, based on WCAG for information and communication technology. Among these are the following:

The Law on Persons with Disability No. 51/2010/QH12 asserts that people with disabilities shall have the right to accessibility in public construction, public transportation,

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HOW TO CREATE ACCESSIBLE CONTENT ACCORDING TO UNIVERSAL DESIGN PRINCIPLES

information technology, cultural services, sports, tourism and other services fulfilling the requirements of people with disabilities.

The Law on Access to Information No. 104/2016/0H13 stipulates that the government will provide favourable conditions for people with disabilities, persons living close to borders, on islands, in mountainous areas, in regions with difficult socio-economic conditions to access information. The Law on People with disabilities No. 51/2010/QH12 and the Law on Information Technology No. 67/2006/QH11 both recognize the rights of people with disabilities to access to and use of information and communication technology, applying and developing information technology, developing capacities through IT applications and development as well as participating in education and training programmes on IT.

Viet Nam also enacted a number of national accessibility standards on information technology and communication, such as: the national standards on public internet access points - technical requirements to support the elders and people with disabilities (TCVN 8701: 2011); national standards on telecommunication products and services to support people with disabilities and the elders - Fundamental requirements (TCVN 9247:2012); national standards on telecommunication products and services to support people with disabilities and the elders - Instructions on design of interactive services using Dual Tone Multi Frequency (DTMF) as input signal (TCVN 9248:2012); national standards on ICT products and services to support people with disabilities and the elders - Instructions for design (TCVN 9249:2012) (Vietnam 2017).

To enable people with disabilities to access websites and portals of government agencies, the Ministry of Information and Communication (MIC) enacted the Circular 26/2009/TT-BTTTT regulating that portals of government agencies must ensure accessibility features for people with disabilities. The Circular 28/2009/ TT-BTTTT regulates the application of accessibility standards and technologies to support people with disabilities' access to and use of ICT. MIC is the first government agency to develop a website that adopts many accessibility features such as captions or text resizing. Besides, the website was recoded in HTML code to support IAWS, a text reading software to support persons with visual impairments (Vietnam 2017). Circular 26/2020/TT-BTTTT provides regulations on the application of standards and technologies to assist people with disabilities in accessing and using ICT products and services. In December 2020, ASEAN states including Vietnam have endorsed the "ASEAN Declaration on Human Resources Development for the Changing World of Work and Its Roadmap". Inclusion in TVET and regarding ICT technologies is mentioned as an important factor to prepare the ASEAN workforce for the changing world of work. All member states resolve to undertake the improvement of the inclusivity of education, skill training and job opportunities for all (ASEAN 2020).

As ICT becomes more and more important in TVET, this can either be a chance to make access to education and employment more equal, or to create new barriers. With the vision to leave no one behind, this toolkit provides information and guidance for creating easily accessible digital content, documents, and e-learning sessions.

In this section, the toolkit focuses on guidance for creating accessible digital content and choosing suitable digital tools. According to universal design principles, we create digital content so that everyone can use it to the greatest extent without needing adaptions or specialised design. Therefore, the digital accessibility toolkit will not separate the guidance according to specific audiences or disability types. The goal is to use all guidelines to create content for all people, taking diversity as the norm and reducing the need for adaptions. However, in a few cases, the readers might find accessibility guidance for people with specific disabilities helpful. To support in these cases, information about principles for supporting people with different disabilities are summarised in chapter 6 of this toolkit.

The guidance in this section is recommended for all printed and electronic communication including text documents, emails, websites, and any other kind of digital communication material.



3.1 FORMAT AND STYLE

3.1.1 Fonts and spacing

Key points:









A digital application should offer a choice of fonts and font sizes as well as line spacing for different users.

Bigger font sizes or the option to change fond size leads to better readability. Online reading font size should be at least 18 to 26 points. For the web, text should be resizable without assistive technology up to 200 percent without loss of content or functionality.

Use **bold** for strong emphasis.

Spacing: There needs to be sufficient spacing between letters, words, lines, and paragraphs: Line height (line spacing) should be at least 1.5 times the font size.

Spacing following paragraphs should be at least 2 times the font size. **Letter spacing** should be at least 0.12 times the font size.

Word spacing should be at least 0.16 times the font size.

Resources: WebAIM: font readability (English only)

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3.1.2 Language and readability

Key points:

- Use simple words and explain difficult words (for example use 'give' instead of 'provide').
- Use words that describe things exactly (for example 'school buildings' instead of 'facilities').
- Use common words (for example use 'house' instead of 'habitation').
- Always use the same words for the same thing (for example use 'learner' or 'student' while talking about people participating in training instead of using both).
- Avoid hyphenating words that are usually not split (for example 'informa-tion').
- Do not write large sections of text in all capital letters.
- Provide a glossary of terms of technical words and acronyms.
- Do not use abbreviations. (For example, use 'For your information' instead of 'FYI').

- Do not use roman numerals (for example use '4' instead of 'IV').
- Write telephone numbers with spaces or dots between the numbers (for example use 0911.31.44.82 instead of 0911314482).
- Do not use special characters (for example, use 'and' instead of '&').
- Do not underline large blocks of text as it might be difficult to read.
- Use short sentences. 60 to 70 characters is sufficient.
- Put information in a logical order, with the important details first.
- Use active voice, with a clear 'actor' in your writing.
- Write helpful links as they allow users to navigate a website or web application. An effective link is self-explanatory, telling the user where they will go if they click on the link. For example, putting key words at the beginning of the link phrase and using underlines will be useful.

Resources:

Plain English Campaign provide a paid service to check publications and websites to ensure that the language used is understandable. They also provide free guides on writing in Plain English. Similar services exist in other countries, for their respective languages (Plain English Campaign 2021, CBM 2019).

How to Make Information Accessible, is a guideline that contains detailed, practical advice on preparing easy read documents, including advice on making the writing accessible and selecting picture (Change 2016, CBM 2019).

Understanding SC 2.4.6—Headings and Labels (W3C, Headings and Labels: Understanding SC 2.4.6 2016) **<u>Understanding SC 3.1.2</u>**—Language of Parts (W3C, Understanding Success Criterion 3.1.2: Language of Parts 2016) **Understanding SC 2.4.4**—Link Purpose (In Context) (W3C, Link Purpose (In Context): Understanding SC 2.4.4 2016) **Understanding WCAG SC 1.4.1**—Use of Color (W3C, Use of Color: Understanding SC 1.4.1 2016)

3.1.3 Structure

Key points:

Provide an easily navigable structure - When using visual characteristics, the information should be also available to people who can't see colour. For text documents CBM recommends the following (CBM 2019):



For text documents

Mark lists with the lists feature. Use headings and sub-headings.

Keep sections short.

Keep text left-aligned to keep spaces between words even.

In all instances, underline and embed hyperlinks using appropriate functions in Word or InDesign or the links may not work if exported to a PDF.

Use concise, but descriptive, hyperlink text. Do not put valuable information in headers and footers.



For tables

Insert summaries for tables and insert alternative text (see section 3.1.5 for guidelines on alternative text). Use name rows and columns in tables. Adjust column widths and row heights. Use a simple table structure. Do not use tables for layout, including on web

Do not use empty columns or cells.

For example, Figure 1 illustrates how to use a semantic structure that uses chapters. headings, sub-headings to organize the content. They allow to clearly see the structure of the document, and they are also the main way of navigation used by screen readers.



For the web

Identify headings, lists, and tables, this supports people in accessing important structural information, and in easily locating and navigating the content.

View and operation should not be restricted to a single display orientation, such as portrait or landscape.

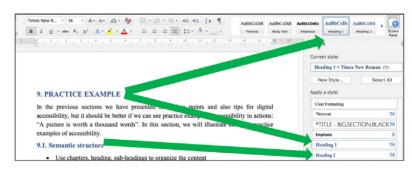


Figure 1. Using heading, sub-heading to organize content

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Resources:

Web Developer Toolbar is an inspection tool that allows to display and check the display structural elements (Pederick, Web Developer 2021).

Semantic Structure on the Web (WebAIM)

(WebAIM, Semantic Structure: Regions, Headings, and Lists 2020)

Document Accessibility Cheat sheets

(National Centre on Disability and Access to Education) support short guides on how to make documents more accessible using features in the most popular document creation programmes (National Center on Disability and Acces to Educati 2015).

Accessible Digital Office Document project (Ontario College of Art and Design) provides a suite of guides on making document formats

(Ontario College of Art and Design) provides a suite of guides on making document formats accessible, including Word, PowerPoint, Excel, and PDF (Inclusive Design Research Centre, Accessibility of Office Documents and Office Applications 2015).

3.1.4 Colour and contrast

Key points:







When using colour to identify or distinguish information, make sure that this information is still available to people who can't perceive colour.

Colour contrast is important for users to distinguish various text and non-text elements. Higher contrast makes the image easier to see. The contrast of icons and graphical objects is just as important as that of text.

Figure 2 presents an illustration of contrast between text and background

Insufficient colour contrast

Insufficient colour contrast Contrast ratio: 4.25:1

Insufficient
colour

contrast

Sufficient colour contrast

Contrast ratio: 17.6:1

Figure 2. Insufficient contrast (The first three examples) and sufficient contrast (the last one) (Amanda Coolidge 2018)

Resources:

Accessible Colour and Contrast design by Google provides a guideline and also a tool to create and test accessible colour and contrast (Google 2021).

Colour contrast analyse by the Paciello Group for Windows and Mac OSX (Paciello Group 2020).

<u>Color Oracle</u> is an excellent, free, and easy-touse colour blindness simulator (Color Oracle 2018, CBM 2019).

Penn State University provides some guidelines on how to make charts

more accessible. This includes advice on both drafting text alternatives and colour considerations (Penn State, Charts and Accessibility n.d.).

Penn State website (colour and contrast on web pages) (Penn State, Color and Contrast on Web Pages n.d.).

W3C Working group note: understanding WCAG 2.0, contrast (W3C, Contrast (Minimum): Understanding SC 1.4.3 2016). WebAIM, including a contrast checker (WebAIM, Contrast Checker n.d.).

3.1.5 Alternative text

Key points:



Alternative text, or alt text tells people what an image shows, such as text or basic details. If an image fails to load, alt text should be display in its place.



Alt text should be provided for all non-text elements, such as graphs, pictures, tables, images, logos, links, and any other form of graphic information (CBM 2019). It will be shown only when mousing over the image or if using screen readers.



When writing alt text:

- Keep it short and descriptive.
- Features that can be included: placement of objects in image, image style (painting, graph), colours, names of people, clothes (if they are an important detail), animals, placement of text, emotions, surroundings.
- Don't include "image of" or "photo of", emojis, obvious details and leave it blank if the image is purely decorative.



In HTML, alt text can be added using a description tag.

How to create alt text in Microsoft Word

To create alt text, click right on the picture. Choose "Edit alt text". On the right side, a box will open. In a text box please describe the object so someone with a visual disability can understand the content. This could include the subject, the setting, actions or interactions and other relevant information.

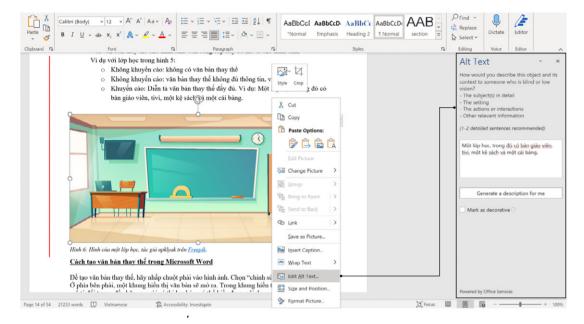


Figure 3. How to create alt text in Word.

Example: Alt-text for images.

For example, with the classroom in figure 4:

Bad practice: NO alt text.

Not recommended: Not giving sufficient information. For example: alt text = classroom.

Good practice: Full explanation of the picture in text form. For example: alt text = A classroom including a teacher's table, a TV, a clock, bookshelf, and a writing board.



Figure 4. Picture of a classroom, author upklyak on Freepik.

Example: Alternative way to describe colour

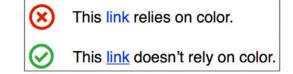


Figure 5. Bad practice: Colour without label



Figure 6. Good practice: Colour with label

Example: Create descriptive link text which do not rely only on colour



Bad and good practice of link description:

This link relies on colour and i therefore not accessible.

This link uses bold font and underlining; therefore, it does not only rely on colour and is more easily accessible

Resources:

Accessibility: Image Alt text best practices (Siteimprove) (Siteimprove 2021)
Alt Text Decision Tree (W3C) (W3C, An alt Decision Tree 2019)
Understanding SC 1.1.1—Non-text Content (W3C, Non-text Content: Understanding SC 1.1.1 2016)
Example of an accessible infographic (WebAIM, Web Accessibility for Designers

Jim Thatcher: alt text (Thatcher 2018)
The Diagram Center Image Description
Guidelines (Benetech, Image Description
2019)

Making images accessible for people on Twitter (Twitter n.d.).

3.1.6 Referencing

Key points:

n.d.)

For full references: Reference the original material and then add details of the format at the end of the reference.

For in-text citations: Hyperlinks or a **tooltip** can be used rather than footnotes. If that is not possible, endnotes can be used.

PDFs: If page numbers are unavailable for referencing, you can use section headings.

Resources:

Referencing accessible formats of The Open University (The Open University 2021). The accessibility guide of United States

government also support a guide on Reference material (General Services Administration United States, Reference materials n.d.)

3.1.7 Captioning, transcribing

Key points:

Always provide captions, transcripts, or descriptions of audio and video content. If possible, offer them in different languages.



Transcripts make audio/video content accessible to everyone, including people who are unable to view the video. Transcripts can be read independently of a video or audio.

- A transcript should capture all the spoken audio, the on-screen text, and descriptions of visuals. Transcripts should include descriptions of important audio information (like laughter) and visual information (such as someone entering the room).
- Make transcripts available online and link them to the respective video.



There is software with the ability to create automatic captions for both specific pre-recorded videos as well as online learning sessions and meetings, among them MS Teams. Most providers offer this for the English language. However, the captioning might not be always completely correct and still needs to be cross-checked.



Captions allow people who can't hear a video's sound to have access to a text version of the information provided in the audio. Captions are usually shown in parallel with the video.



Accessible captions should be:

- Synchronized to appear at approximately the same time as the corresponding audio.
- Equivalent to the spoken words and other audio information.
- Easily available.
- If you've captioned your video, provide a transcript (some software produce automatic transcripts based on the captions).

For reference of a more easily accessible website in Vietnamese, please visit the website of the Disability Research and Development Centre:

https://www.drdvietnam.org/

Resources:

Best practices in online captioning
(Joeclark.org 2006).
Captioning Web Video (San Diego
Community College District n.d.).
Captions, Transcripts, and Audio Descriptions
of WebAIM (WebAIM, Captions, Transcripts, and
Audio Descriptions n.d.).

<u>Captioning YouTube Videos</u> tutorial from The National Centre on Disability and Access to Education (NCDAE) (National Center on Disability and Access to Educat, Captioning YouTube Videos n.d.).

The website accessibility.digital.gov provides a guide for accessible <u>Video and multimedia</u> (General Services Administration United States, VIDEO AND MULTIMEDIA n.d.).

<u>This tutorial</u> describes how to create free automated transcripts for both Mac and Windows (TechWiser 2017).

The DCMP (Described and Captioned Media Program) <u>Captioning Key</u> provides tips and advice on editing captions (Described and Captioned Media Program n.d.).

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3.2 ACCESSIBILITY FEATURES IN COMMON SOFTWARE

Each document format has its own way to help authors add structure and improve accessibility, such as headings, lists and tables. People with disabilities can make use of that structure to access the content. It is advised to make full use of these features.

3.2.1 Word

Key points:



Use of 'Styles' and 'List' features and the Accessibility Checker. The Accessibility Checker of Microsoft Office locates elements that might cause accessibility problems. The tool checks only the structure of the documents, such as non-text contents. tables, styles, and pictures. It does not check the content and the language. Therefore, it works also for Vietnamese language documents.



Use a larger font size and sans serif fonts in Word in iOS and Android (11pt or larger with iOS and 18pt or larger with Android and Window 10 App).



Word for Mac provides less accessibility support than Windows Word. To avoid version issues, the .docx format should not be used in Word 2007 and 2010. Instead, use the .doc format (Word 1997 – 2003 format) (CBM 2019).

3.2.2 PowerPoint

Key points:



Give every slide a unique title.



Do not fill the slide with text.

If possible, record

presentations (video

and audio) and provide

captioned versions and

transcripts via the web.



Use alt text, captions, subtitles, and alternative audio tracks in videos.



Speak slowly and clearly.



Use a large font size (20pt or larger) and sans serif fonts.



Face the audience when speaking to support people with hearing disabilities or those who lip read.

Resources:

Microsoft Accessibility website (Microsoft, Accessibility 2021).

Make your PowerPoint presentations accessible to people with disabilities by

Microsoft (Microsoft, Make your PowerPoint presentations accessible to people with disabilities 2021).

WebAIM: PowerPoint Accessibility (WebAIM, PowerPoint Accessibility n.d.).

Microsoft Accessibility website (Microsoft, Accessibility 2021).

Make your Word documents accessible to people with disabilities by Microsoft. Improve accessibility with the Accessibility Checker by Microsoft (Microsoft, Make your Word documents accessible to people with disabilities 2021).

The National Centre on Disability and Access to Education provides also other useful cheat sheets about accessibility on different Microsoft Office files (National Center on Disability and Acces to Educati 2015).

Accessible Digital Office Document (ADOD)
Project provides a guide related to Authoring
Techniques for Accessible Office Documents Word Processing Applications (National Center
on Disability and Acces to Educati 2015).

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Resources:

3.2.3 Excel

Key points:



Alt text for images and tables is not available for Excel 2007 and earlier in Windows and not available in iOS/Mac (CBM 2019).



Unique names for sheet tabs allow to easily differentiate the sheets. Blank sheets may cause misunderstandings and should be avoided.

Resources:

Make your Excel documents accessible to people with disabilities by Microsoft (Microsoft, Make your Excel documents accessible to people with disabilities 2021).

3.2.4 PDF

Key points:



There are several freeware tools to read PDFs, such as Adobe PDF Reader or Foxit PDF Reader.



The most reliable and easiest way to create a PDF document with accessible structural information is to generate the PDF from another document (Word, ODF, InDesign) that already has the structural information. This helps to avoid adding structure to the PDF later, which requires Adobe Acrobat Professional software.



Adobe Acrobat versions 11 and later have a built-in accessibility checker.

- Use Accessibility Checker in the Action Wizard mode of Adobe Acrobat Reader Pro to check the accessibility of a PDF.
- Use the PDF Accessibility Repair
 Workflow document to assess existing
 PDF files for accessibility.



Characteristics of Accessible PDF files:

- Searchable text.
- Fonts that allow characters to be extracted to text.
- Specifying the document language in a PDF makes it possible for some screen readers to switch the speech to the appropriate language. This helps to ensure correct pronunciation in different languages.

Resources:

PDF Accessibility Overview by Adobe (Adobe, PDF Accessibility Overview 2021). Free PDF Accessibility Checker (PAC 3) cung cấp một cách nhanh chóng để kiểm tra khả năng tiếp cận của tệp PDF (Zugang für alle n.d.).

Adobe Acrobat XI Pro Accessibility Guide: Best Practices for PDF Accessibility (Adobe, Acrobat xi Pro Accessibility Best Practice Guide 2012).

WebAIM techniques for accessible PDFs (WebAIM, PDF Accessibility n.d.)
The PDF Accessible website (Ipedis n.d.).
The Accessible digital documents company blog (Accessible Digital Documents Company 2020).

"How To Make Information Accessible", a guide to producing easy read documents by Change (Change 2016).

Accessible Digital Office Document (ADOD)
Project provides a guide related how create
an accessible PDF in Adobe Acrobat 11 Pro
(Inclusive Design Research Centre, Authoring
Techniques for Accessible Office Documents:
Adobe InDesign CS6 2010).

3.2.5 **Email**

Key points:



For the content and structure of email:

- Maintain a logical reading order.
- Ensure having clear a subject and headers in the email.
- Use short sentences.
- Avoid using graphics if possible.
- Use tables to present content. This can support people who are using keyboard for navigation.

An accessible email should be readable by different email clients and browsers and on different devices such as desktop computer, laptops, and phones.



An accessible email is influenced not only by the content/appearance of email itself, but also the other factors, such as the internet connection, email clients and the policy for email usage of receivers and senders.

Avoid employing dedicated features of the email client to prepare an email, as not all email clients support these..

Internet connections might not be good enough in some areas to receive large emails. Moreover, the costs for internet usage can be high. Therefore, you should downsize attachments by compressing them using compressed (zipped) folders feature.

Avoid attaching strange files that have an uncommon extension or executable files (like .exe). These are often blocked by antivirus software.

3.2.6 Facebook and Youtube

Tips:



The navigation assistant can be used by those who rely on screen readers or keyboard shortcuts when working with Facebook.



Facebook has an automatic alt text function which uses object recognition technology to create image descriptions. This is only available for pictures, not for GIF or videos.



Facebook has an option to edit the automatic alt text, although it is available only on computers and not on mobile phones.



While uploading videos to Facebook, users can add captions directly or import SRT files, which are subtitle format files.



You can use dedicated shortcuts to control the text (i.e., increase the text size).



For YouTube content:

- add captioning through a transcript file or add subtitles and captions while uploading a video.
- use the Video Manager to edit captions/ subtitles.

Resources:

Make your Outlook email accessible to people with disabilities by Microsoft (Microsoft 2021).

Making E-Mail Accessible for Students was a superior of the control of the c

Making E-Mail Accessible for Students with Disabilities (Georgia Institute of Technology 2004).

Guides Accessibility and Email Campaigns of Campaign Monitor (Campaign Monitor n.d.).

Seven Steps to Creating an Accessible Email in Outlook of Department of Rehabilitation, Canada (Disability Access Services 2014).

Resources:

Facebook Accessibility (Facebook 2021) http://webaim.org/techniques/images/-comprehension (WebAIM, Images Can Enhance Comprehension n.d.).
The website accessibility.digital.gov provides a guide for accessible images (General Services

Administration United States, IMAGES n.d.). The National Centre on Disability an Access to Education provide a tutorial for Captioning YouTube Videos (National Center on Disability and Access to Educat, Captioning YouTube Videos n.d.).

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3.3 COMMON ASSISTIVE TECHNOLOGIES AND SOFTWARE IN VIET NAM

In this chapter, the toolkit will introduce several assistive technologies. Assistive technologies include hard- and software supporting people with disabilities and other people with specific needs to access products or documents. A few examples are screen reader software for people with visual disabilities or hearing aids for people with auditory disabilities. These technologies are very useful. Nevertheless, only providing assistive technology cannot ensure accessibility. Instead, we need to design documents, products, and services easily accessible from the beginning. Only then, everyone with the need to do so can fully use the functions of assistive technologies. For example: If an author does not provide alt text for a picture, then the screen reader software can also not identify the content. Therefore, assistive technology does not replace universal design.

Among assistive technologies there are technologies often used by:



1. People with visual disability: screen reader software, braille displays, screen magnification software.



2. People with auditory disability: hearing aid, software for automatic captioning.



3. People with mobility disability: adaptive keyboard, adaptive switches.

In general, international assistive technologies and software are also used in Viet Nam. But due to some specific conditions, especially economic factors, there are many useful technologies which are not yet common in Viet Nam.

3.3.1 Assistive technology for people with visual disability

Screen readers: Screen readers are used to help people with visual disabilities to easily access electronic information. These software programmes convey textual information in audio form.

Common Tools/Software	License	Vietnamese support	Strengths and weaknesses
JAWS: a screen reader software for Microsoft Windows.	Commercial	No	The software is very sensitive, the audio is of good quality and reading voice sounds realistic. The software supports many languages, but not Vietnamese. Moreover, it only runs on the Microsoft Windows operating system.
Microsoft Narrator: a screen reading app that's built into Windows 10.	Commercial with Windows 10	Yes	The software is very sensitive, the audio is of good quality and the voice sounds realistic. It supports many languages, including Vietnamese. However, it only runs on Microsoft Windows.
Non - Visual Desktop Access (NVDA): a software which allows blind and visually impaired people to access and interact with the Windows operating system and many third-party applications.	Free	Yes	Strengths: It supports many popular applications, including web browsers, email clients, chat programmes and office applications. It also supports Vietnamese language. Weaknesses: It only runs on Microsoft Windows.
VNSpeak: a screen reader software supporting Vietnamese language.	Free	Yes	Strengths: Clear reading of sentences, paragraphs, and entire books with a natural voice. Supports Vietnamese language. Weaknesses: only available on Android operating system.
VoiceOver: a screen reader built into Apple Inc.'s macOS, iOS, tvOS, watchOS, and iPod operating systems.	Commercial with Operation system (OS)	No	Strengths: Expressive reading of sentences and paragraphs. Support with Vietnamese Weaknesses: only supports Apple's operating system

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Refreshable braille display: A refreshable braille display or braille terminal is an electromechanical device for displaying braille characters, usually by means of round-tipped pins raised through holes in a flat surface. Computer users who cannot use a computer monitor use it to read a braille output version of the displayed text.

Common Tools/Software	License	Vietnamese support
Google BrailleBack: BrailleBack is an accessibility service that helps blind users make use of braille devices.	Free	Yes
Google TalkBack: an accessibility service for Android that supports blind and visually impaired users to interact with their devices, including braille display.	Free	Yes

Screen magnification software: A screen magnifier is software that interfaces with a computer's graphical output to present enlarged screen content.

Common Tools/Software	License	Vietnamese support	Strengths and weaknesses
MAGic: a screen magnification software from FreedomScientific.	Commercial	Yes	Strength: simple and easy to use. Weaknesses: only available with Window operating system.
Windows Magnifier: a built-in tool for screen magnification in Microsoft Windows.	Commercial with OS	Yes	Strength: simple and easy to use. Weaknesses: only available with Window operating system.
Zoom: a built-in tool for screen magnification in MacOS, iOS.	Commercial with OS	Yes	Strength: simple and easy to use. Weaknesses: only supports with MacOS, iOS operating systems.

Wearable technology: Wearable technology includes electronic devices that can be worn on the body as an implant or an accessory.

Common Tools/Software	License	Vietnamese support	Strengths and weaknesses
Samsung smart watch support a series of accessibility features, such as screen reader, Zoom, voice assistant, hearing enhancements, text to speech functions.	Commercial with the watch	Yes	Strengths: light and flexible. Weakness: costly, difficult navigation due to small size.
Apple smart watch support a series of <u>accessibility</u> features, such as screen reader, Zoom, voice assistant, hearing enhancements, text to speech functions.	Commercial with the watch	Yes	Strengths: light and flexible. Weakness: costly, difficult navigation due to small size.

Other: Dedicated software that supports Vietnamese speakers with visual disabilities

Common Tools/Software	Vietnamese support	Strengths and weaknesses
Talking dictionary: an audio dictionary app for Android.	Yes	Strength: simple, easy to use. Weakness: limited functions.
Bao noi: an Android app for reading the news.		

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3.3.2 Assistive technology for people with hearing disability

Hearing aid applications: software which supports hearing on different devices.

Common Tools/Software	License	Vietnamese support	Strengths and weaknesses
Petralex: a digital hearing aid application for smartphones and tablets, including hearing tests, speech recognition and acoustic amplification.	Donationware	Yes	Strength: simple and easy to use. Weakness: fee will be charged for usage of many functions.
Sound Amplifier: an application for smartphones and tablets of Google to amplify sounds and voices.	Free	Yes	Strength: simple, easy to use, free. Weakness: only available on Android.

Automatic transcription software: The software automatically generates transcripts/captions from video/audio input. It is based on speech-to-text technology.

Common Tools/Software	License	Vietnamese support	Strengths and weaknesses
Autosub: Autosub is a utility for automatic speech recognition and subtitle generation. It takes a video or an audio file as input, identifies speech and makes parallel requests to Google to generate transcripts. It also generates subtitles. It can translate the text to a different language.	Free	Yes	Strength: effective, free. Weakness: complicated, users need to have IT knowledge.

Trint: a software that applies artificial intelligence to automatically transcribe the spoken word into 31 languages.	Commercial	No	Strength: effective. Weakness: complicated, users need to have IT knowledge. A fee will be charged for usage.
YouTube: YouTube also support an add-in feature to automatically generate captions.	Free	Yes	Strength: simple, effective. Weakness: complicated, users need to have IT knowledge.

3.3.3 Assistive technology for people with mobility disabilities and other marginalised groups

Digital assistive technologies and software for people with mobility disabilities are usually focusing on improvement of interaction, communication, and collaboration, depending on the form of disability. In the field of ICT and education, an adaptive keyboard will help people with certain physical disabilities to work with precision movements in digital environments. Adaptive switches allow people with some forms of mobility disability to control electronic devices via dedicated software, like Mouse4all (Mouse4all n.d.) installed on smartphones or tablet. Advanced robotic aids, like prosthetic robotic arms and legs, are other innovative technologies that support people with some forms of mobility disabilities in performing activities. There are no specific assistive technologies for people in rural and remote areas. They are usually supported through improving access to devices and commonly used software which does not demand a strong internet connection. These technologies are not targeted towards this group and are in wide use, but they can be very helpful for people with less access to urban face-to-face services.

The most common tools, platforms, and sites in rural and remote areas in Viet Nam, are presented in a report on the state of mobile usage in rural areas (MMA 2019). A few examples:

- · Office suite: Microsoft Office.
- Video meeting tool: Zalo.
- Web resources: Facebook and YouTube.
- Web browser: Chrome.

Additional information can be found in the full version of the toolkit.



ORGANIZING AN ACCESSIBLE ONLINE LEARNING SESSION

To organize an easily accessible online learning session, please follow 5 steps:

- 1. Get to know the learners.
- 2. Select an accessible platform.
- 3. Prepare training materials and schedule, provide the materials to the learners.
- 4. Ensure accessibility during the online learning session.
- 5. Collect feedback of learners after the learning session.

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4.1 GETTING TO KNOW THE PARTICIPANTS

When organizing an online learning session or online meeting, we need to get to know the participants. We can use the following questions:

- 1. How many people will attend the session?
- 2. What basic information do we have about the audience? How many men and women, younger or older people, more experienced or unexperienced people are in the session?
- 3. From where do they participate?
- 4. Which device do they use for participation? If they do not have any device yet, how can we support?
- 5. Are they used to online learning? If yes, which tools/platforms do they usually use? What difficulty do they face while using those platforms?
- 6. Which assistive technologies do they use?
- 7. Is there anyone with visual, auditory, mobility, learning, or other disabilities? If yes, how can we support them? Do we need to have a sign language interpreter?
- 8. Is there anyone who does not speak Vietnamese or the designated language of the session fluently?
- 9. What do the learners know about the training content beforehand?
- 10. How does the training content relate to the learners' lives and hobbies?
- 11. Is there anyone to support them during the learning process at home? How?
- 12. ...

Depending on the situation, the list of questions can be adapted. We can ask the questions through email and phone, through a small survey (for example via Google form) or at the beginning of the first learning session.



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4.2 CHOOSING AN ACCESSIBLE LEARNING PLATFORM

During the second step, we select a learning platform that fits with the training content and objective and is easily accessible.

4.2.1 Selecting a learning platform that fits with the training content and objective

According to Jane Hart (Hart 2021), people learn in 4 main ways:



through **DISCOVERY**: where people learn in informal settings, finding different information sources and acquiring knowledge by themselves.



through **DISCOURSE**: where people interact with others to learn from each other.



From **DOING** a job: where people learn from their everyday work experiences.



through **DIDACTICS**: where people are taught or trained in a more formal learning environment.

Based on this model, there are four types of learning platforms (GIZ, Explore New Digital Learning Spaces Overview and Recommendations on Learning Platforms 2020):

Platforms for	Platforms for	Platforms for	Platforms for Doing
Didactics	Discourse	Discovery	
These platforms usually focus on formal courses and trainings. They include learning management systems, learning content management systems, massive open online course portal and others.	These platforms are usually social learning and collaboration platforms, such as social networks; collaboration platforms, Wikis; forums.	These platforms focus on knowledge and information storage, such as digital library systems; asset management systems, ePortfolios, Wikis, standard content management systems, blogs.	Learners use these platforms for their usual work (office tools, blogs).

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Depending on the learning objective, learning content and methods, a suitable learning platform or a mixture of platforms can be selected. Currently, there are number of learning platform which integrate functions for different ways of learning.

4.2.2 Kiểm tra khả năng tiếp cân của nền tảng

A platform is accessible if it is

- compatible with assistive technology,
- has automatic captioning,
- has keyboard shortcuts.
- supports high contrast,
- supports screen magnifying functions,
- offers different learning methods.
- offers flexible learning time and space,
- offers possibilities for individualisation of font, colour, and content presentation,
- is usable via phone, tablet, and computer.

Check accessibility reviews of common learning platforms before choosing a suitable platform. A rating of at least AA according to WCAG 2.1 standards is preferable: https://www.w3.org/WAI/standards-guidelines/wcag/

Among many platforms which have been previously evaluated for accessibility are for example Moodle (Partner n.d.), Docebo (D. Inc 2021), Sakai (Sakai 2020), and ATutor (ATutor n.d.).

ATutor and Moodle have the strongest accessibility features. They have documentations on their accessibility features and offer accessibility checking and repair. Specifically, ATutor and Moodle offer alt text for videos and images, keyboard access and easy navigation. ATutor moreover also has different font sizes and colours, different themes and backgrounds for individual needs and preferences. The learning platform atingi is based on Moodle and the video conferencing tool BigBlueButton. It has similar accessibility features to Moodle. BigBlueButton supports high colour contrast, keyboard access, and screen reader usage, especially with the NVDA reader. It is also compatible with the JAWS software people with visual disabilities.

Below the compatibility of the four learning management systems with some assistive technologies is depicted.

		Moodle	Docebo	Sakai	ATutor
1.1	Screen reader	Yes	Yes	Yes	Yes
1.2	Keyboard accessibility	Yes	Yes	Yes	Yes
1.3	Audio description	Yes	No	Yes	Yes
1.4	Screen magnification	Yes	Yes	Yes	Yes
2	Captions (transcript)	Yes	Yes	No	Yes
3	Speech recognition	Yes	Yes	Yes	Yes

Table 1. Combability with assistive technology (Andrijana Bocevska 2018).

The platforms are largely compatible with assistive technologies. Exceptions are Sakai regarding captions and transcripts as well as Docebo regarding audio description.

Additional information on other accessible platforms is provided on the website of the American Bar Association (Americanbar 2021):

"Accessibility Features of Common Virtual Platforms

- Supports screen readers: Zoom, Google Meet, Microsoft Teams, BlueJeans by Verizon.
- Supports sign language interpreters: Zoom, Google Meet, Microsoft Teams.
- Sign language interpreter app: Google Hangouts.
- Automatic closed captioning: Google Hangouts, BlueJeans.
- Spoken feedback tools: Google Hangouts.

- Supports manual captioning (must retain a captioner): Zoom, Google Meet, Microsoft Teams, GoToMeetings.
- Has keyboard shortcuts: Zoom, Google Meet, Microsoft Teams, GoToMeetings, Google Hangouts, BlueJeans.
- Provides high contrast mode: GoToMeetings.
- Has screen magnifiers and visual modifications: Google Hangouts." (Americanbar 2021)

(Virtual Meetings: Accessibility Checklist & Best Practices (americanbar.org)) (Americanbar 2021)

If other additional software is used for learning, common software in Vietnam should be used and evaluated for its accessibility.

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Resources:

Accessibility - MoodleDocs.

The Moodle LMS achieves WCAG 2.1 AA Accessibility compliance | Moodle.

ATutor Accessibility.

<u>Docebo and Accessibility - Docebo Help & Support.</u>

Sakai LMS | University Learning Management System | Accessibility.

BigBlueButton: Accessibility.

Adding captions in Zoom.

Adding captions to YouTube videos.

Adding captions to videos in Panopto.

Adding captions to videos in Canvas.

Adding captions to videos in Facebook.

Canvas Accessibility.

Zoom Accessibility: Zoom - Getting Started with Closed Captioning.

Microsoft Teams Accessibility and Teams Keyboard Shortcuts.

Using Hangouts with a Screen Reader.

Keyboard Shortcuts for Hangouts.

Google Hangouts Meet Accessibility.

BlueJeans: Accessibility Features.

Panopto Accessibility.

E-learning Accessibility (W3C) (W3C, E-learning Accessibility 2013).

G Suite User Guide to Accessibility.

G Suite Admin Guide to Accessibility.

Microsoft Office 365 Accessibility.

GoToMeetings: Accessibility Features.

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4.3 PREPARING THE TRAINING MATERIALS AND PROVIDING THEM TO THE LEARNERS

The preparation process includes the following aspects.

The training programme:

Based on the information collected in step 1, choose the content, focusing on training content that is unknown or unclear to the learners.

Choose learning methods according to universal design principles:

- Prepare various methods of presentation of content, prepare diverse materials (text, audio, video, etc).
- Prepare various activities and ways of recognizing what learners have learnt: group work, learners' presentations, case studies.
- Prepare a variety of methods to encourage learner participation.

Allocate sufficient time to explain and repeat, ask questions, give feedback, and take breaks. Break down bigger tasks into smaller ones.

Offer learners the possibility to be flexible regarding learning time and space.



Training materials:

Prepare materials according to accessibility principles outlined in chapter 3 of this toolkit.

Provide materials and information on accessibility functions of the chosen learning platform.

Suggest additional materials and offers for learners to learn the necessary skills and techniques for online learning.

Prepare guidance and introductions to the technology for the learners and any supporting persons. Provide individual technical guidance beforehand to those who need it.

Prepare subtitles/translations for videos. Use open educational resources to provide diverse materials in line with learners' needs.

Use the accessibility checking function of Microsoft Office and other software before finalizing the training materials.

Send the training materials and schedule to learners and support persons (if any) before the learning session, so that people can become familiar with the training content. Avoid sending training materials with large size.

Provide learners with reference materials in other languages if needed.

4

4.4 ENSURING ACCESSIBILITY DURING THE ONLINE LEARNING SESSION

During the learning session:

- Prepare a quite learning and teaching space.
- Before starting to teach, provide technical guidance to learners.
- Offer opportunities for networking and getting acquainted among learners.
- Agree upon some rules of participation for the learning session together with the learners (learning schedule, platform, turning on video and microphone, appropriate etiquette, and non-discrimination standards etc.).
- Create a friendly and open atmosphere.
- Turn on the video, if possible; speak slowly, clearly and avoid noises during the learning session.
- Ensure good lighting so people with low vision can see better.
- Participants who do not speak should mute the microphone.
- Avoid using virtual background as it can reduce visibility.
- Encourage participants to say their names as they speak.
- Use chat functions to allow people to ask questions or raise concerns; read out loud the questions and comments in the chat.
- Describe pictures for people who cannot see them.
- Avoid flickering graphics.
- Polls and whiteboard functions are not yet fully accessible and should be used carefully.
- Limited use of complex digital features.

- If necessary, provide a professional sign language interpreter to ensure the content is conveyed correctly. There are now also online sign language translations services such as the one from SCD Deaf (see resources below).
- Provide multiple ways to do assignments and examinations, limit presentation time and add lots of practical activities.
- Create opportunities for learners to interact with teachers and other classmates. Break down long sessions, make time for small group work and arrange the groups to ensure diversity in each group.
- If using a breakout room for group work, give clear instructions on the exercise and usage of rooms.
- Do only one activity at a time.
- Choose diverse examples.
- Allocate enough time to practice and review the learned content.
- Pay attention to participant feedback.
- Where possible, meetings should be recorded and shared.

Refer additionally to materials on inclusive teaching methods, for example on the TVET website: **tvet-vietnam.org**.

9

4.5 COLLECTING FEEDBACK FROM LEARNERS AFTER THE LEARNING SESSION

To understand the experiences and learning outcomes of learners and improve online learning sessions regarding content, teaching methods and accessibility, we can collect feedback. Feedback helps us to improve quality of training and better understand the needs of all relevant stakeholders - including learners and teachers!

There are different ways to collect feedback. For example:

- Online surveys.
- Small group discussions.
- Big group discussions.
- Feedback through email, messages.
- Share a board for learners to provide recommendations.
-

While collecting feedback, we should combine both open and closed questions, and provide several feedback methods. Some examples:

- What did you like about the online session?
- What do you think could be further improved? How?
- Did you have access to the learning materials for the session? If not, what documents are inaccessible?
- Do you have access to the learning platform? If not, please specify difficulties?
- Could you access and participate in all activities during the learning session? If

- not, please specify which activities were not accessible and whether you were provided with alternative activities.
- Are the teaching methods appropriate?
 If not, please specify.
- Did you have a sufficient device to participate fully? If not, what is missing?
- Do you need to be further supported? If yes, please specify how you want to be supported.
-

Depending on the learners and content of the lesson, the questions can be adapted, or other questions added. The responses can then be summarised. As we prepare for the next lesson, we can incorporate ideas and experiences into our lesson plan to improve the next session's accessibility. Categories can include:

- Content
- Teaching methods
- Platforms
- Materials

- Learning activities
- Hardware and technical support
- Learning environment
- ...

Recommendation: Talk to colleagues or classmates about your teaching and learning experiences to continue to gather feedback and diverse perspectives. Teachers can also join each other's lessons to help one another to improve learning and digital accessibility!

4. Organizing an accessible online learning session \rightarrow 4.5 Collecting feedback from learners after the learning session

4. Organizing an accessible online learning session → 4.6 Template plan for accessible online learning sessions

Resources:

Sign language interpretation: https://scdeafvn.weebly.com/.

Accessible Remote Instruction | User Research Centre (harvard.edu).

Best Practices: Online Pedalogy | Teach Remotely (harvard.edu).

Accessible Teaching in the Time of COVID-19 - Critical Design Lab (mapping-access.com),

Designing Accessible Online Courses | Accessible Technology (washton.edu).

20 Tips for Teaching an Accessible Online Course | DO-IT (washton.edu).

20 Tips for Teaching an Accessible Online Course: Video DO-IT (washton.edu).

Resources for the Centre on Accessible Distance Learning (washton.edu).

Virtual Meetings & Trainings - from the Compliance Office.

<u>Falcuty Guide for Zoom Classes with Interpreters/Captioners - from the Disability</u>

Services Office.

COVID-19 FAQs & Resources - from the Disability Resources for Students.

Reference materials on inclusive teaching skills: https://www.tvet-vietnam.org/.

4.6 TEMPLATE PLAN FOR ACCESSIBLE ONLINE LEARNING SESSIONS

To support teachers and trainers in preparing and conducting accessible online teaching and learning, the toolkit provides a template for planning an online lesson. The template is designed to help educators go through the five steps described in the chapters 4.1-4.5 and structure the collected information and ideas.

The framework is adapted from a teaching plan of the Texas Computer Education Association.

The original can be found here: https://blog.tcea.org/lesson-plan-template-for-remote-learning/

1. General information	
Topic:	
Class:	
Platform/teaching format:	
Duration:	

2. Getting to know each other

If possible, get to know the learners before the class. You can contact the learners directly or create an online questionnaire and send it to the learners. You can take the chapter 4.1 of this toolkit as reference and note down here the guiding questions you will use.

Guiding Questions:

•

3. Training objective

What do you expect learners to learn from this session?

Think about the knowledge, skills, and attitudes you want learners to acquire:

•

How does the training content relate to everyday life and employment of the learners after the training? Why should the participants learn this?

•

How do learners show that they have learned the content?

•

4. Support the learners in online environments

Connection

How can you support learners in connecting with you and other classmates? Create an environment for exchange between learners, teachers, and other classmates.

•

How will you know how the learners feel?

•

How will you create a learning environment that is friendly and tranquil?

•

Concentration

What can you do to support learners concentrate on the topic?

Write down the rules and regulations of the training session which you would like to agree on with the learners:

•

4. Organizing an accessible online learning session \rightarrow 4.6 Template plan for accessible online learning sessions

Technology

Which platform will you use? Will you record the session?

How can you provide technical guidance for using the platform? Is there any learner that needs to be guided individually before the training session?

Do learners have necessary devices to use the platform? If no, describe potential support measures:

Is the platform easily accessible? Please take chapter 4.2 of this toolkit as reference and search for additional information on the internet. Pay attention to the needs of learners in your class.

Other support

Are there learners who need additional support such as sign language interpretation or adaptive keyboards? If yes, please note how support can be provided:

How do you plan to support family members or caretakers who work with the learners during the online training session?

5. Main training content and method

Diverse presentation methods:

Diverse training activities and recognition of learning:

Diverse methods to encourage the participation of learners:

6. Evaluation and feedback

Evaluation

What do you want to evaluate? The learning result or the learning process?

Which techniques do you use for evaluation?

Are those techniques diverse and flexible enough for all learners to have the opportunity to complete the evaluation and receive helpful information for their further development? If not, how can you adjust it?

How will you share the evaluation results with learners?

4. Organizing an accessible online learning session → 4.6 Template plan for accessible online learning sessions

Feedback

Please take chapter 4.5 of this toolkit as reference.

How can learners provide feedback about the training session?

Which topics do you want learners to provide feedback on?

How can learners contact you for further consultancy and support?

7. Finalize the training programme

Based on the information on section 1-6 of this template, please create the detailed training programme:

Time frame	Activity	Is this activity inaccessible to someone in the class? If yes, please provide an alternative activity.

Review the training programme:

- Is there enough time for technical guidance and getting to know each other at the beginning?
- Is there enough time to explain the exercises, repeat the guidance, review the content, ask questions, as well as give feedback?
- Are the break times sufficient?
- Are the tasks clear and small enough?
- Is there enough time for working group sessions? Are those working groups diverse?
- What will you do during working group sessions? It might be a good time to support those who need additional support

8. Training material

Training materials for learners:

Materials on accessibility features of used platform (if any):

Guidance for participating in online sessions (if any):

How will you provide the training materials to learners beforehand?

4. Organizing an accessible online learning session → 4.6 Template plan for accessible online learning sessions

Check:

Are the materials technically accessible? Please take the checklist in section 7 of this toolkit as reference and use the accessibility check feature of Microsoft Office and other software.

Are the modes of content presentation in the materials suitable for different learning styles?

If there are materials which are not accessible yet, how can you adjust them? Or can you provide alternative materials?

•

9. Methods to improve accessibility in the learning session

Which digital accessibility principle should you pay attention to? Please review the needs of the learners and section 4.4 of this toolkit. Choose the most important principles:

•

10. After the session

Based on the feedback results and your experience, how can you improve the next learning session?

•

- Frank

MY TARGET GROUP ARE PERSONS WITH A SPECIFIC DISABILITY, SO WHAT SHOULD I PAY ATTENTION TO MOST?

If there are only persons with a specific disability in your target group, you can still follow the principles outlined in chapters 3 and 4 to ensure the digital content is as accessible as possible. According to universal design principles, materials are designed for all, not only one specific group. Nevertheless, if there is a need to focus on one specific group, you can do the following two things:

- 1. Pay special attention to a few principles closely related to ensuring accessibility for that specific group.
- 2. Talk to the people in your target group to understand their specific needs and requirements for support in detail.

To support with step number 1, in this chapter some principles are listed that should be considered when communicating and working on digital content with persons with specific disabilities. To learn more about each principle, please review the chapters referenced in brackets.

People with visual disabilities:

- Choose suitable fonts and spacing (3.1.1).
- Limit: abbreviations, special characters, underlining long paragraphs. Check writing of phone numbers (3.1.2).
- Use the features for lists and titles and use left margin; do not write important information in the footer or header; specify row and column names; ensure that the content is readable horizontally and vertically (3.1.3).
- Ensure that information presented in colour is also expressed in writing or speech (3.1.4).

- Use high colour contrast for images and text (3.1.4).
- Add alternative text (3.1.5).
- Avoid footnotes for referencing (3.1.6).
- Provide transcripts (3.1.7).
- Speak slowly and clearly, record the presentation if possible (3.2.3).
- Specify the language of the document (3.2.6).
- Ensure good lighting, avoid flickering graphics, encourage participants to say their name as they speak (4.).
- Allows learners to record learning activities (4.)

People with hearing and speaking disabilities:

- Provide subtitles and transcripts for videos (3.1.7).
- Ensure that audio information expressed is also expressed in writing (4.).
- Check if persons with hearing disabilities have assistive devices and if sign language interpretation for deaf persons is needed (4.).
- Provide materials before the online session (4.).
- Provide the opportunity to give

- comments and ask questions via email, chat, or text messages instead of verbally (4.).
- When organising online learning sessions, make sure everyone can see the speaker's face clearly. Everyone should speak slowly and clearly (4.).
- Minimize noise, ensure that only one person speaks at a time (4.).
- Use automatic subtitle features if available (3.2).

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People with mobility disabilities:

- Choose a suitable platform that is usable with keyboard and supports keyboard shortcuts (4.).
- Provide learners with the opportunity to design their own study time and space (4.).
- If learners have difficulty writing, allow extra time to complete a task; provide soft-copy materials, encourage other
- learners to support with note taking and allow the use of additional technology (computers, tape recorders) (4.).
- Provide the opportunity to ask questions in a variety of modes (4.).
- Discuss with learners whether they need assistive technology such as adaptive keyboards, adaptive switches (4.)

People with mental health conditions or neurological disabilities:

- Have a clear training structure and schedule (4.).
- Create a friendly learning environment and provide learners with the
- opportunity to design their own study time and space (4.).
- Make time for small group study (4.).

People with learning disabilities:

- Use appropriate language and ensure that text is easy to read (3.1.2).
- Use clear structures and useful references (3.1.3, 3.1.6).
- Provide subtitles (3.1.7).
- Repeat instructions, schedule enough time for questions and feedback (4.).
- Break down big tasks into smaller ones (4.).
- Present content in different ways, limit presentation time and add activities (4.).
- Only perform one activity at a time (4.).

Other types of disabilities:

Apply all the principles outlined in sections 3 and 4 and inquire about specific support needs

Other vulnerable groups:

- Choose a platform that is accessible with many different devices (4.).
- Limit the number and size of attachments when sending emails (3.2.8).
- Design a clear structure for meetings/ lessons and use simple, easy-to-read writing (3.1.2, 3.1.3).
- Use common software in Vietnam (3.3).
- Recommend materials so that participants can learn technical skills needed to participate in online learning (4.).
- Support everyone to use automatic

- subtitles or translations. Provide other language versions of materials when needed (4.).
- Provide learners with the opportunity to design their own study time and space (4.).
- Provide multiple ways to take tests and prepare other products (4.).
- Choose diverse examples (4.).
- Record the lessons and share them (4.).
- Limit the use of complex digital features (4.).

General recommendations:

- Communicate with students and families about specific support needs.
- Use the accessibility checker feature of Microsoft Office and other software and test the accessibility of the used learning platform/website (3.).
- Discuss with learners whether they have a sufficient device for online learning and using digital content. Provide consultancy and support for learners (4.).
- Review documents on inclusive teaching methods. Examples can be found on the TVET website: tvet-vietnam.org.



ACCESSIBILITY CHECK

The following checklist can be used to assess the accessibility of tools, documents, and meetings in digital environments.

Criteria	Please check the box if the content fulfils the criteria
Spacing and font size	
Line height (line spacing) is at least 1.5 times the font size.	
Spacing following paragraphs is at least 2 times the font size.	
Letter spacing is at least 0.12 times the font size.	
Word spacing is at least 0.16 times the font size.	
Text is left aligned.	
Online font size is at least 18 to 26 points.	
Word document font size is at least 11 points.	
PowerPoint font size is at least 20 points.	

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6. Accessibility Check 6. Accessibility Check

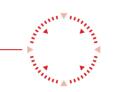
Language	
Simple and common words are used, difficult ones explained.	
Sentences are a maximum of 70 characters long.	
Active voice is used.	
A glossary of technical terms and acronyms is provided.	
No or few abbreviations.	
Underlining is used only for specific words or short sentences.	
Telephone numbers are written with spaces or dots between the numbers.	
No special characters, no roman numerals.	
Language of text is identified with a language code.	
Structure	
Headings and subheadings are used.	
Lists are marked, for example by creating it with the lists feature in Word.	
No valuable information in headers or footers.	
Sections are short.	
Tables	
Alt text for tables is available.	
Rows and columns are named, there are not empty cells.	
The table has a simple structure.	

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6. Accessibility Check 6. Accessibility Check

E-mail	
Emails have clear subjects; long e-mails include headers or other structural features.	
Attachments are avoided or downsized.	
No dedicated features that are only available to certain e-mail clients are used.	
Meetings and learning	
Used platform has sufficient accessibility features (reviews can be found online for most platforms).	
Information on accessibility features and needs is provided.	
All participants have the necessary equipment to participate.	
Text captioning or sign language interpretations available.	
Materials are available beforehand to participants or a link to them is provided in the chat.	
Cameras are turned on; adequate lighting is ensured.	
There are sufficient breaks and smaller group sessions; time for repetition, feedback, and questions.	
Chat function or question and answer function are available.	
Participants say their name when speaking.	
Record and share meeting where suitable.	
Materials are recommended with which participants can learn technical skills needed for participation.	
Diverse examples are included.	

Learning time and space can be flexible (if possible).	
Checking	
The documents/content are checked with available tools such as accessibility checker of Microsoft Office.	



APPENDIX

ACRONYMS

AT	Assistive Technology
CRPD	Convention on the Rights of Persons with Disabilities
ICT	Information and Communication Technology
ILO	International Labour Organization
NVDA	Non-Visual Desktop Access
SDGs	Sustainable Development Goals
TVET	Technical and Vocational Education and Training
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
W3C	World Wide Web Consortium
WCAG	Web Content Accessibility Guidelines

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 $Appendix \rightarrow Glossary$ $Appendix \rightarrow References$

GLOSSARY

- 1. **Accessibility** extent to which products, systems, services, environments, and facilities can be used by people from a population with the widest range of characteristics and capabilities to achieve a specified goal in a specified context of use (ISO, Accessibility term Ergonomics principles in the design of work systems 2016).
- 2. **Alternative (or Alt) text** is text to quickly explain the content of non-text elements, including images, graphs tables, so that the information can be accessed by dedicated assistive technology like screen readers.
- 3. **Barriers** are defined as "Factors in a person's environment that, through their absence or presence, limit functioning and create disability. These include aspects such as: a physical environment that is not accessible; lack of relevant assistive technology (assistive, adaptive, and rehabilitative devices); negative attitudes of people towards disability; services, systems and policies that are either non-existent or that hinder the involvement of all people with a health condition in all areas of life" (WHO, International classification of functioning, disability and health 2021).
- 4. **Digital Accessibility or Information and Communication Technologies (ICT) accessibility** means that technology products, resources, and services can be used fully by the widest range of users possible.
- 5. **People with disabilities**: "People with disabilities include those who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others" (United Nations 2006).
- 6. **Inclusion** refers to the process of improving the terms of participation in society for all people, through enhanced opportunities, access to resources, representation, and respect for rights.
- 7. **Universal design** is the design of products, environments, and services in a way that they can be accessed, understood, and used to the greatest extent possible by all people.

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SHORT GUIDELINE

Programme Reform of TVET in Viet Nam

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