

Diverse needs, diverse solutions: Making library trainings accessible

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Abstract: Libraries as knowledge hubs serve several functions, one of them is knowledge dissemination. The trainings needed for reaching this goal require them to be fit for a diverse audience. In this article we discuss why creating accessible trainings is important, and provide guidelines and tools on how to create accessible training materials.

Keywords: accessibility, libraries, training, training materials, FAIR data, open science

Verschiedene Bedürfnisse, verschiedene Lösungen: Wie Schulungen von Bibliotheken barrierefrei gestaltet werden können

Zusammenfassung: Bibliotheken als Wissenszentren erfüllen mehrere Funktionen, eine davon ist die Verbreitung von Wissen. Die Schulungen, die zur Erreichung dieses Ziels benötigt werden, müssen für ein vielfältiges Publikum geeignet sein. In diesem Artikel wird erörtert, warum die Erstellung barrierefreier Schulungsmaterialien wichtig ist, und es werden Leitlinien und Hilfsmittel für die Erstellung barrierefreier Schulungsmaterialien präsentiert.

Schlagworte: Barrierefreiheit, Bibliotheken, Schulungen, Schulungsmaterialien, FAIRe Daten, Open Science

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Intro: Libraries and Accessibility

Libraries can be understood as knowledge hubs that serve several main functions which are becoming increasingly diverse (Russel & Huang, 2009). One function of libraries can be understood as collecting knowledge – they are (physical and digital) spaces in which books, journals and other items are kept, both in analogue and electronic formats. More recently, data itself has become a similar commodity to be stored by libraries.

Another function of libraries is closely related to the first: making these collections accessible to users. In this context, ‘accessible’ means that the resources „can be used by a wide range of potential learners, including those with disabilities who may be using assistive technologies” (EOSC Synergy, n.d.) In a historical perspective, as alphabetization rates have risen and access to education has become more equitable, the user base of libraries has evolved from a few selected users to a wider audience, encompassing users with more diverse needs (Russel & Huang, 2009). Most commonly, this related to needs of people with different disabilities, like visual impairments, hearing impairments, and mobility impairments. This aspect can cover accessibility in terms of physical access – making buildings accessible for wheelchair users – but also encompasses accessibility of web services. In relation to this aspect, libraries also need to adhere to legal requirements: Apart from national laws stating that no one may be discriminated against because of their disability and that people with disabilities must be treated equally in all areas of daily life (for Austria, see BVG Art. 7), more explicitly the EU has made web accessibility mandatory for public services with its „Directive (EU) 2016/2102 of the European Parliament and of the Council of 26 October 2016 on the accessibility of the websites and mobile applications of public sector bodies“.

Yet, libraries as knowledge hubs also serve functions of dissemination and distribution of knowledge, by providing trainings on resources and content in a more general sense. In line with making libraries’ collections accessible to users, these trainings should also be accessible to a wide variety of learners – but trainers need to be trained themselves in order to deliver on that goal (Pionke, 2020).

Training Users and Using the European Open Science Cloud

In the following, we will focus on the final function of libraries we presented above and therefore, on making trainings accessible. This mission is embedded in a larger framework, that of the European Open Science Cloud (EOSC). EOSC, funded by the European Commission through various programmes such as Horizon Europe – the European Commission’s funding program for research and innovation – aims at developing a common space for FAIR data and research services. Building on existing infrastructure, “EOSC will be a multi-disciplinary environment where researchers can publish, find and re-use data, tools and services, enabling them to better conduct their work.” (EOSC, 2023) In order to benefit from the European Open Science Cloud, researchers must gain awareness of what it is and how to use it. Therefore, training and support – also by libraries and their research supporting services – to explain and improve the use of EOSC is crucial. As this ambitious project relies on stakeholders carrying the message of EOSC to their designated communities, institutions and national research infrastructures, EOSC also provides training resources on EOSC. In the Horizon 2020 Project EOSC Future, we are developing such training materials. Following the so-called “train the trainer” approach, we also develop trainings or materials on how to conduct EOSC trainings or use EOSC materials. While the meta level of this endeavour might be confusing, it’s even more important to design the content in a very clear and accessible way. In these train-the-trainer materials, we instruct trainers on how to make sure their materials are accessible, and aim to raise awareness to different dimensions of accessibility needs, ranging from disabilities to disadvantages in terms of internet access, to language barriers. These dimensions will be further explained in the following section. In line with the goal to provide FAIR materials (Findable, Accessible, Interoperable, Reusable) we broaden the term „accessible“ in this sense to mean accessible to all users.

1. Dimensions of accessibility

When speaking of accessibility, we try to tackle inequalities in terms of access along three dimensions: disabilities, language barriers and internet access. This is by no means an exhaustive list of all aspects

of accessibility, but an attempt to illustrate the diversity in terms of accessibility needs and to raise awareness on the many aspects that may not come to mind immediately.

Concerning the first dimension that causes inequality in terms of access, disability, one might think of a barrier-free entrance to the library, suitable for wheelchairs. Apart from mobility, other conditions that can prevent people from using poorly accessible resources include visual impairments, hearing impairments, etc. Along with these physical disabilities, also cognitive conditions might prevent people from accessing resources. Dyslexia or neurodiversity – a well-known example for which is ADHD – should also be considered when trying to create accessible (web) resources (Jaeger, 2008, Shea & Derry, 2009).

The second dimension we would like to highlight concerns language barriers. Considering language barriers, and finding solutions to overcome them, may help various users – non-native speakers, people with no academic background or lower education levels; but also the before mentioned people with dyslexia or cognitive impairments; again people with visual impairments, elderly people, people with psychological issues but also everyone who wants to get the most important information quickly. (Pionke, 2017)

Another dimension of accessibility is internet access. Considering the potential barrier of unstable internet connection is one attempt to address economic inequality – assuming that not every potential user is provided with internet connection that allows accessing data-intensive resources such as synchronous trainings or video streams (United Nations, 2014).

Sketching these dimensions, it has become apparent that all of them are more or less interrelated – thus, addressing inaccessibility and making content accessible regarding one of these dimensions facilitates accessibility with regards to the other dimensions as well. A practical example in the context of training materials is the following: Subtitling video content to facilitate access for persons hard of hearing also allows people who do not use English as their first language to follow spoken words more easily.

This positive externality of attempting accessibility for one group has been described as the “curb cut effect” (Blackwell, 2017). When sidewalks are made accessible for people with wheelchairs (by building

small ramps in the curb), many other groups benefit, i.e. parents with strollers, kids with scooters or people pushing heavy carts, luggage etc. Hence, apart from the fact that making resources accessible is both good practice and legally required, the potentially unexpected benefits need to be taken into account as well.

1.1 Accessible as in FAIR

In the research environment, the concept of FAIR data is becoming ever more important. Making your research data FAIR (Findable, Accessible, Interoperable, Reusable) is becoming essential in a connected research world, and, more specifically, in the context of the European Open Science Cloud. In the definition of FAIR, “accessible” means that „once the user finds the required data, she/he/they need to know how they can be accessed...” (GO FAIR, n.d.) and mainly requires that the data can be accessed via standardized protocols. Accessibility in the sense of this article however, is not considered. When talking about accessibility in the academic environment (and libraries as archives of research data), one also needs to consider this meaning of accessible in FAIR – not only that FAIR data is accessible for some people, but for as many people with different needs as possible. This should also be considered when providing trainings on how to make your data FAIR (EOSC Synergy, n.d).

2. How to create accessible trainings

2.1 Where to start?

In the previous section, we described some factors of accessibility that should be considered in order to create accessible trainings. While those are a good start, the number one rule trainers should follow to meet their audience’s needs is the following: Ask before designing materials. This allows trainers to get in touch with their learners, learn about their specific needs and be able to accommodate these needs. We regard this as a simple way to allow for needed accommodations while being respectful of trainers’ resources.

We recommend trainers to think about which type of output they want to create in teaching – whether it is slides, audio-visual content such as videos, or printed handouts – and then think about the steps necessary to create this content in an accessible manner. This is espe-

cially important for synchronous learning activities and saves trainers from the overwhelming task of making all content accessible for every potential user group - and thus not attempting it in the first place. For asynchronous learning activities, trainers should aim at a broader implementation of accessibility standards. This is due to their target audience being less clearly defined, and impossible to be reached in advance.

2.2 What to keep in mind?

The following section on best practices for creating accessible (training) content is a synthesis of existing resources by the authors and mainly draws on the EOSC Synergy Online Training Handbook, which was developed in a precursor of the EOSC Future project, and extensively builds on recommendations by Gergely, Jeitler, and Blumesberger (2022) and Caldwell, Cooper, Guarino Reid, and Vanderheiden (2008).

First, a general recommendation is that trainers should make their materials clear, consistently organised and explanatory. What does this rather broad claim mean in practice? First, this includes using high contrast combinations of background colour and text colour, such as black script on white slides.

Second, when structuring content, make use of headings and sub-headings in Word and PowerPoint documents and web pages. Simply using larger font sizes as headings or bold text to emphasize words is not programmatically determined, and thus not recognized by assistive technology such as screen readers. When using headings and sub-headings they need to be chosen in the correct order for assistive technology to be able to relay the information in the correct order.

Third, another important aspect in this context is the use of colour to convey information such as the heightened importance of a term, or even requesting a response. This is closely related to accessibility by users of assistive technology like screen readers mentioned above, but also to people with colour blindness or weaknesses.

Fourth, it is good practice to add text descriptions to all other visual elements such as images, graphs and videos. This again is mainly aimed at users of assistive technology such as screen readers that rely on alternative text that contains a textual representation of the visual content and can be read back to them by a screen reader. This inclu-

des both the title of an image, as well as a description of its content.

Fifth, for audio or audio-visual content we recommend including transcripts or captions. This makes the content more accessible for people who prefer reading the content – due to various reasons, e.g. the above mentioned: disabilities, language barriers or low internet connectivity.

2.3 Tools – or how to get there

Lastly, we want to close with specific tools that we recommend trainers to use in order to make their training materials accessible. Some of the recommendations above – using high contrast combinations, or not solely using colour to convey information – do not require the use of certain tools, but can be done directly in the programme trainers produce their materials in.

Other recommendations, like providing alternative text, require more steps but are easily done in those same programmes as well. For example, after inserting a picture in a Microsoft PowerPoint slide deck, alternative text can easily be added by clicking “format graphic” and adding alternative text in the designated fields.

What if trainers are overwhelmed by the task and do not know where to even start? One powerful tool that finds all instances of lack of accessibility is the Microsoft Accessibility checker, an in-built tool that assesses the accessibility of content produced in Microsoft Office applications. Thus, it is a powerful tool to assess the accessibility of slide decks if they are produced in PowerPoint, which is the case for a large community of users. The Accessibility checker allows users to navigate to each slide that does not meet accessibility requirements, flags issues (such as „content does not contain alternative text“) and suggests on how to address this issue by guiding the user to the interface where alternative text can be put in.

Another tool that helps trainers to include visual content in a more inclusive way – although including alternative text is still recommended – is Visolve (Ryobi Systems, 2020). It is an online software that conducts transformation on visual content – images of all sorts, including graphs, maps, and charts – in order to allow people with visual impairments to process it more easily.

3. Conclusion

We have started out by showing that the larger topics of accessibility and dissemination are not only connected to core functions universities serve in modern societies, but also interrelated. The need for accessible trainings offered by libraries thus is apparent, but as Pionke (2020) has shown, library employees themselves need support to design those trainings and training materials.

We highlight a multidimensional approach when it comes to designing training materials by differentiating between different dimensions of the FAIR component of accessibility that should be kept in mind: By broadening the understanding of what constitutes accessible materials we include the dimensions of disabilities, language barriers and internet access. We show that depending on the output trainers want to create, there are various potential adaptations – ranging from alternative text over high contrast slides to captions for audio-visual content – and how they will result in accessible materials for more than just one group of learners with certain needs.

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