

Guide to Designing Digital Research Skills Training Materials: Presentations and Videos

Reading time: 25 minutes

Skills and Workforce Development Team

Australian Research Data Commons

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Introduction

The Australian Research Data Commons (ARDC) *Guide to Designing Digital Research Skills Training Materials: Presentations and Videos* aims to support training materials creators, trainers and national training infrastructure providers in the design and delivery of presentations and videos while also encouraging the sharing and reuse of their training materials. It aims to facilitate the design, development and delivery of digital research and data skills videos and presentations in alignment with best practices for learning and training.

This tool is informed by the [Universal Design for Learning](#) framework, which aims to eliminate barriers in the design of learning materials and make content accessible to all.

Benefits of Accessible Learning Materials

We all learn differently. When we create learning materials which are mindful of the needs of a diverse range of audiences – be it English as a Second Language (ESL), differently abled or neurodivergent learners – we are also creating learning materials which benefit all. In supporting a wider learner range, accessible learning materials:

- encourage reuse
- are more readily usable with the things they need to know and will learn made explicit
- reduce the need to create multiple versions of the same training for people with different needs
- reduce stigma
- promote equity.

Is What You're Delivering Being Received the Same Way?

There is often a gap between the information we deliver and what is received. We often forget about the tacit knowledge that enables us to readily understand a topic we are already familiar with. Learners often lack such tacit knowledge.

In creating learner-centred materials, a mindset shift is needed: the delivery should work for the reception, not the other way round. We need to be deliberate and explicit in presenting the information, especially when the target audience might be encountering the topic for the first time, coming from a different language background, or contending with challenges they prefer not to discuss.

DOs	DON'Ts
Focus on how learners might receive the information.	Assume all learners automatically understand the ideas.
Consider learners' background knowledge.	Use metaphors or technical language without explaining them.
Be deliberate – state points or ideas explicitly.	Expect the reader to make inferences.
Help learners track your presentation with visual or oral prompts.	Rely on one mode of delivery (speaking only).

Who Is This Tool For?

Anyone who is:

- designing a presentation
- delivering a presentation
- recording their presentations as videos.

Prior Knowledge

You do not need to have prior experience in designing or delivering presentations to understand this self-assessment tool.

FAIR Data

The ARDC has developed [a Training Materials Metadata Checklist](#). It aims to help learning designers, training materials creators, trainers and national training infrastructure providers capture key information and apply appropriate mechanisms to make their training materials sharable and reusable.

Use the checklist to enact FAIR!

Presentation and Video Checklist

The presentation and video checklist is a companion tool that ensures your presentation or video takes into account the key points of this document. It comprises 2 sections – format and content considerations. Refer to the corresponding sections of this document for examples of the elements and what the descriptors mean.

You can use this checklist:

- *before* you create your presentation or video to get an idea of how to approach it
- *after* you have put your presentation or video together to ensure you’ve addressed the considerations.

FORMAT			
No.	Elements	Descriptors	Tick if evident
1	Visual	Easy-to-read typeface	
		Large enough typeface	
		Pace - Sufficient reading time between slides	
		Strong colour contrast for texts and images	
		(Non-decorative) images: Captioned or described	
		Clear link(s) between images and explanations	
		Ideas and concepts: presented visually where possible	
		Bullet points, not sentences	
		Subtitles or captioning enabled	
		For presentations: script included in presentation notes For videos: transcript included	
2	Audio	Volume consistently at an audible level	
		Instructions delivered at a reduced, deliberate pace	
		Presenter speaks clearly	

FORMAT			
No.	Elements	Descriptors	Tick if evident
		Free of noise	
3	Consistency	Same points of reference and terminology throughout	
		Formatting (formats, fonts, colours) is uniform throughout	
		Consistent pace throughout	
4	External virtual spaces (if used in live presentations)	Provide multiple modes to access external platforms, e.g. QR codes, links in chat	
		Demonstrate or explain how to use external engagement platforms (such as mentimeter, slido) or breakout rooms	
		Post activity arrangements: inform participants of where they should go to and when	
5	Language	All acronyms and abbreviations explained in full – visually (on the slide) and verbally	
		Plain English used	
		Numbers: numerals used for 2 and above	
		All technical terms explained	

CONTENT			
No.	Elements	Descriptors	Tick if evident
1	Orientation	Audience introduced to presenter(s)	
		Audience introduced to the topic	
		Essential prior knowledge or pre-learning clearly stated	

CONTENT			
No.	Elements	Descriptors	Tick if evident
		Rationale	
		Learning objectives or audience buy-in established	
2	Exemplification	Examples follow explanations	
		Current and relevant examples used	
		Authentic samples used	
2	Coherence	Presentation overview included for longer presentations	
		Transition slides are consistently used to flag changes in focus areas.	
		Transitions to other focus areas are consistently flagged with discourse markers.	
		Key ideas are verbally and visually flagged for the audience.	
3	Closing	Recap key ideas.	
		Present call to action visually and verbally.	
		Direct audience to sources for further information.	
4	Review	Include relevant resources.	
		Trial the presentation or video.	
		Refine it based on the feedback.	
		Meet approvals and sign-offs, if any.	
5	Share	Follow your organisation's guidelines for the sharing of resources.	

CONTENT			
No.	Elements	Descriptors	Tick if evident
		Consider sharing your resource through Digital Research Skills Australasia (DReSA) .	

Format Considerations

How you format your presentation or video and the way you deliver it can impact user accessibility. Some areas to consider are the:

1. Visuals

Easy-to-read typeface

Serif typefaces (e.g. Times New Roman) have decorative lines or tapers, commonly referred to as “tails” or “feet”, while sans serif fonts (e.g. Calibri and Arial) don’t. Some people find serif typefaces harder to read. As the simplicity of sans serif typefaces may improve the readability of text, use them where possible.

DOs	DON'Ts
<p>A sans serif font may be more readable for some.</p> <p>Use sans serif typefaces. These tend to be easier to read.</p>	<p>Fancy typefaces, including those with serifs, may be less readable for some.</p> <p>Avoid serif typefaces if possible.</p>

More information about inclusive typefaces is available on Vision Australia’s page on [typography in inclusive design](#).

Large enough typeface

Ensure that all text is visible from a distance. This is especially important for in-person presentations. Use a minimum font size of 24 for slide text and 36 for headings.

Tips on accessible presentations or slides can be found on Queen’s University Belfast’s page on [accessible content design](#).

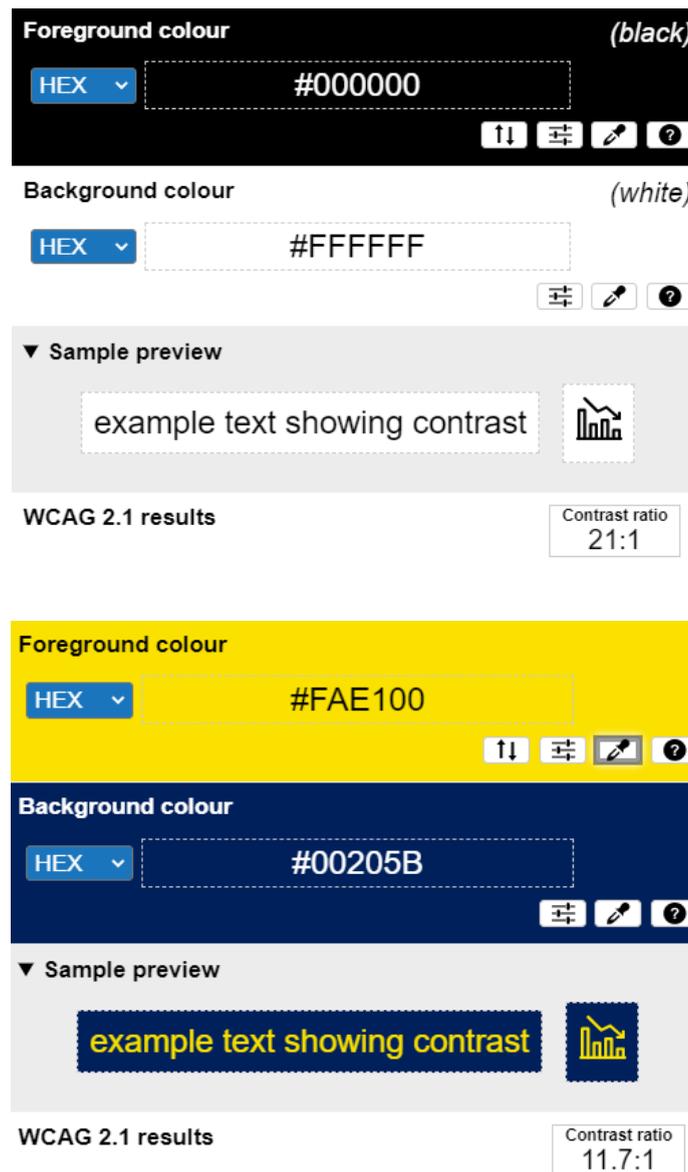
Pace: sufficient reading time between slides

Provide the audience sufficient time to read through the slide before moving on to the next one. If you don’t intend to show the slide, remove it or [hide your slide](#).

Strong colour contrast for texts and images

Make sure there is high contrast between text/images and their background. High colour contrast reduces eye strain and helps readers focus. The more different hues and colour brightness levels are, the greater the contrast.

Figure 1. Example of colour contrasts



Source: Vision Australia's *Colour Contrast and Use of Colour*

For more information, refer to Vision Australia's tips on [how to make social media accessible](#).

(Non-decorative) images: captioned or described

Labelling images with a caption or description reduces cognitive load by providing a clear reference point and explicitly stating the relationship between the image and the explanation. Caption or describe non-decorative images (images that are in some way related to the text, not those placed for aesthetic purposes) in your slides.

Figure 2. Example of a caption (circled in red)

Table 1 Spring Blossoms

Colour Family	Bulbs	Shrubs	Trees
Pink	Tulips	Flowering current	Ornamental plum
Yellow	Daffodils	Forsythia	Star magnolia

Source: p. 69, 2021_Gray Universal_Design for Learning Course Book

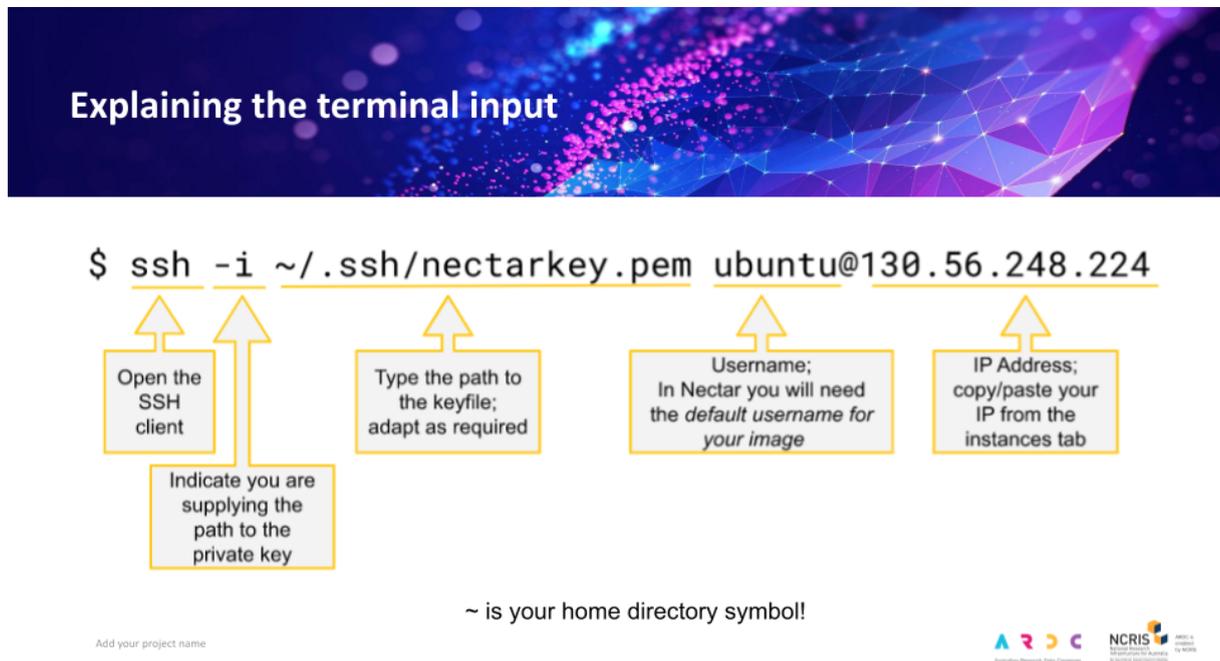
Figure 3. Description (example 1; circled in red)

```
{
  "data": {
    "attributes": {
      "rightsList": [{
        "rights": "Creative Commons Attribution 4.0
International",
        "rightsUri":
"https://creativecommons.org/licenses/by/4.0/legalcode",
        "schemeUri": "https://spdx.org/licenses/",
        "rightsIdentifier": "cc-by-4.0",
        "rightsIdentifierScheme": "SPDX"
      }],
    }
  }
}
```

Image 3: Example which shows metadata that *does* contain an SPDX licence identifier

Source: *SPDX Licence Identifier Guide*

Figure 4. Description (example 2; in yellow boxes)



Source: ARDC Cloud Training Slides

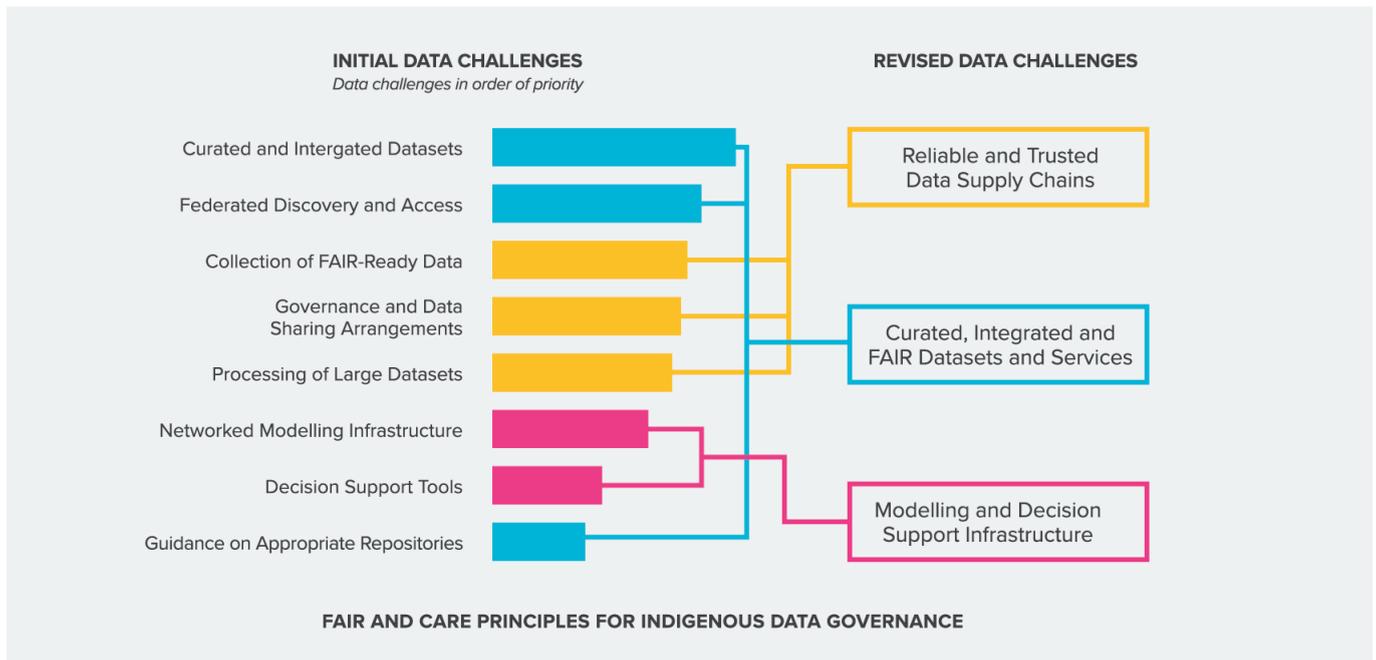
Clear link(s) between images and explanations

Except for decorative images, learners should not be left to guess the point of the image. Refer to the image in your explanation, or label the image so learners understand its purpose.

Ideas and concepts: presented visually where possible

Concept maps are a useful way to represent related concepts and help learners understand relationships between different things. They can take the form of charts, graphic organisers, tables, flowcharts, Venn Diagrams and timelines. Consider using a concept map to offer learners another way of thinking about concepts.

Figure 5 (next page). Examples of visual representations of ideas



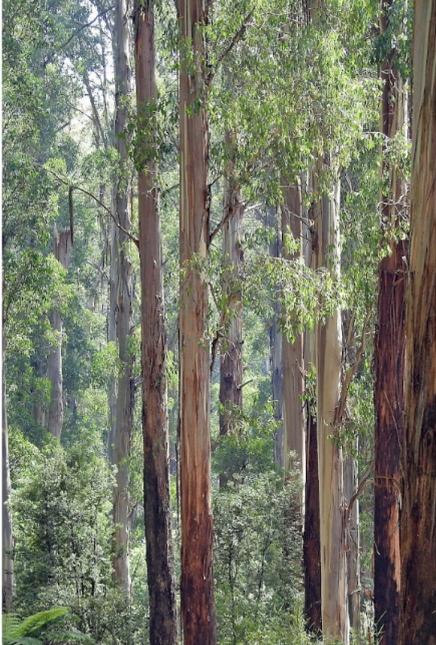
Source: Planet Research Data Commons: Feedback from Consultations

Visual collaboration tools like [Miro](#) allow you to brainstorm ideas and create concept maps.

Bullet points, not sentences

Reduce the cognitive load for your audience by presenting your main ideas as bullet points. This prompts the audience along the presentation without requiring them to first wade through sentences to identify key information.

Figure 6 (next page). Example of bullet points



ESSENTIAL ATTRIBUTES

- FAIR and CARE principles must be implemented
- Continuity of data storage, access and management is essential
- Indigenous knowledge and data are essential for caring for Country



Source: ARDC Planet RDC Public Roundtable slides

Subtitles or captioning enabled

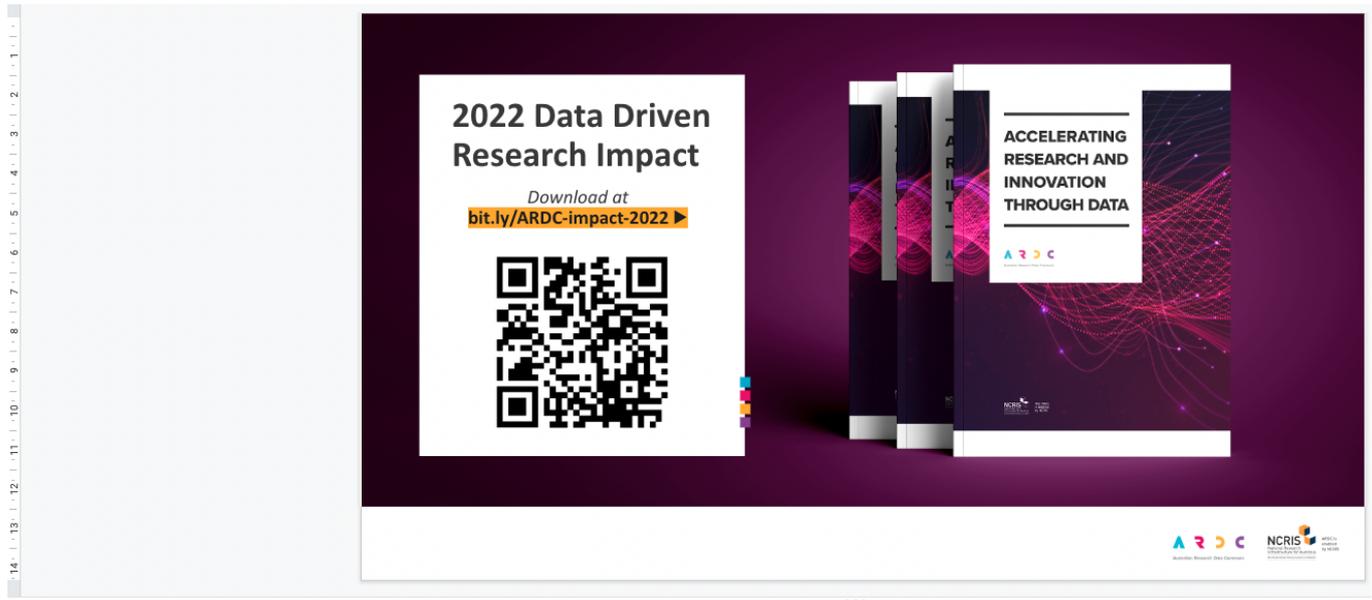
[Add closed captions or subtitles to media in PowerPoint](#) to make your presentation more accessible.

You can also [use a screen reader to add closed captions to recorded PowerPoint presentations](#).

For presentations: script included in presentation notes

If you are sharing your slide deck as a learning resource, consider including your script in the presentation notes. This helps the audience understand the presentation, especially for image driven parts of the presentation.

Figure 7 (next page). Example of a script included in the presentation notes (beneath the slide)



The new data-driving research impact booklet is available online now.

Explore how the ARDC provides researchers with competitive advantage through data.

In this booklet, we showcase the breadth and depth of the services and collaborations that the Australian Research Data Commons (ARDC) provides the research community.

We also feature the impact we're having through five case studies featuring researchers who use our services.

Source: ARDC Planet RDC Public Roundtable slides

For videos: transcript included

You can [create a transcript from a pre-recorded file](#) or upload your transcript together with your video to provide the audience with multiple ways of accessing the content.

2. Audio

Volume consistently at an audible level

The audience might be able to adjust the volume on their end when the audio is consistently low or when it is consistently high. However, it's a tricky fix for the audience if the audio is inconsistent or just inaudible.

Instructions delivered at a reduced, deliberate pace

Be deliberate with what you say and how you say it. How quickly you speak can affect how well the audience understands you, especially if they are encountering you and the content for the first time. Try speaking slightly slower than your usual pace.

Presenter speaks clearly

Speaking to an audience can feel contrived and uncomfortable for some people. However, putting extra effort to speak clearly also helps reduce the audience's cognitive load.

Free of noise

Avoid recording with the in-built mic on your computer as it can pick up ambient sound. Use a good quality microphone or headset for crisp audio.

3. Consistency

Same points of reference and terminology throughout

Use the same terminology and names throughout. If you start off the presentation by referring to your audience as "audience", switch midway to "learner", and mix these up occasionally with "participant" or "SME", they need to spend extra effort and time to make sense of what you're saying and work out if you're referring to the same thing.

Formatting (formats, fonts, colours) is uniform throughout

Once your brain is set up to encounter content in a particular format, any variation to the format requires additional effort. Keep formats, fonts and colours as familiar as possible to reduce unnecessary cognitive load.

Consistent pace throughout

The audience is likely to get accustomed to the pace of your delivery a few slides into the presentation. Any sudden changes to the pace can disrupt the audience's attention. Unless you want the audience to pay extra attention at certain points, try to keep the pace of your delivery, the frequency of your slide changes, and the time you spend on each point on the slide fairly consistent.

4. External virtual spaces (if used in live presentations)

Provide multiple modes of access to external platforms, e.g. QR codes, links in chat

It can be difficult for the audience to engage with verbal instructions alone. Including multiple ways for the audience to access external platforms provides them with increased opportunities to participate in ways that work best for them, such as on a separate device or on a separate screen or tab.

Demonstrate or explain how to use external engagement platforms (such as Mentimeter and Slido) or breakout rooms

Some in the audience might be unfamiliar with the external platform you are using, and some might need a refresher. There might also be updates to the platforms that can frazzle audience members who think they are familiar with them. Walk your audience through each step so they can fully participate in all platforms. Remember: show, don't tell.

Post-activity arrangements: inform participants of where they should go and when

Post-activity instructions are as important as pre-activity instructions! Help the audience anticipate the next steps so they can concentrate on the task at hand.

Example

Let's take 20 minutes for the next discussion activity. Shall we meet at [state place] to [state activity] at [state time]?

Content Considerations

1. Orientation

Audience introduced to presenter(s)

Who are you? Help the audience pay close attention to the content by dispelling possible questions at the back of their heads. Introduce yourself and where you are from. Share information about yourself if it is appropriate and relevant to the presentation.

Audience introduced to the topic

State the target audience and the topic explicitly. This helps the audience quickly identify if the presentation meets their learning needs.

Essential prior knowledge or pre-learning clearly stated

New knowledge is built on prior knowledge. Explicitly stating assumed prior knowledge helps increase opportunity for learner success and empowers the audience to:

- gauge the difficulty level
- identify their existing knowledge gaps, if any
- decide if they need a knowledge refresh before engaging with new content.

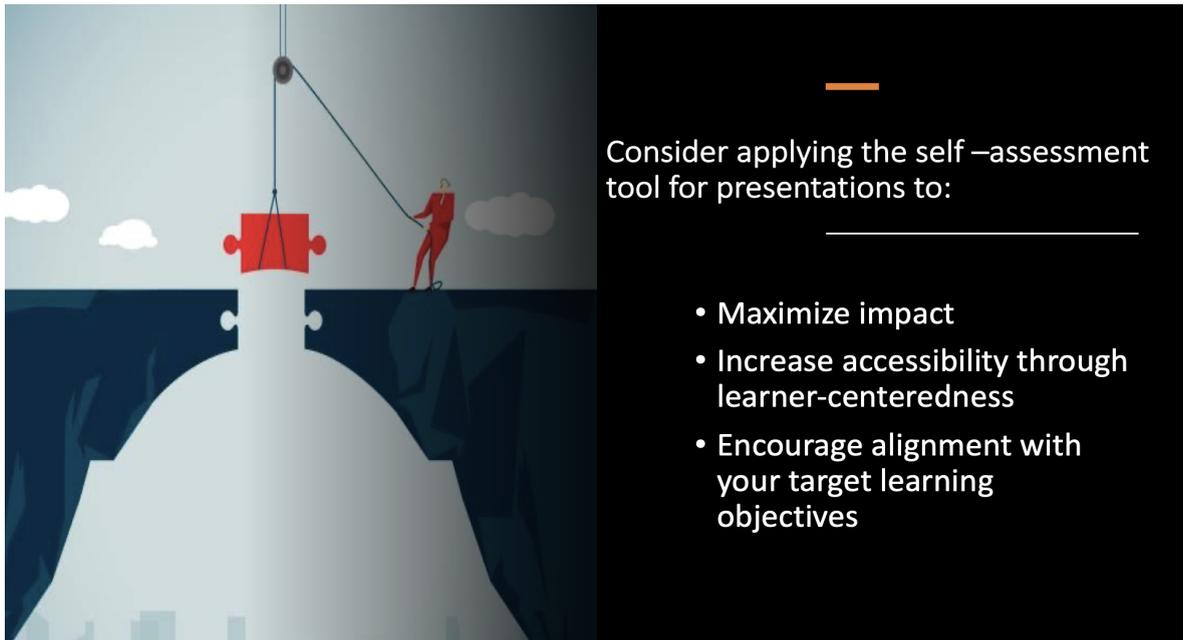
It is a good idea to mention relevant pre-learning, if available, and direct the audience to it.

Rationale

Help the audience understand why there is a need for this presentation. Explain why this topic is significant.

Contextual information about the topic contributes to meaning-making and allows the audience to make sense of new content more readily.

Figure 8 (next page). Example of a slide on the rationale for the presentation with the notes



There is often a gap between the information we deliver and what is received. We often forget about the tacit knowledge that enables us to readily understand a topic we are already familiar with.

Enhance clarity to maximise impact

You’ve spent time and energy putting your presentation together. Don’t let your presentation go to waste because of the presentation’s pace or confusing visuals or because your audience was trying to figure out the relevance of an image and was distracted. The self-assessment tool helps clarify your messaging and your presentation overall, thereby maximising their impact.

Increase accessibility

In creating learner-centred materials, a mindset shift is needed: the delivery should align with the reception, not the other way round. By focusing on learners’ needs and being mindful of the needs of a diverse audience, the self-assessment tool increases accessibility through learner-centredness.

Encourage alignment with your target learning objectives

It is easy to get too deep into the woods and be so engrossed in the explanation that the audience can no longer make sense of how the part fits in with the whole. The self-assessment tool allows you to check for coherence in your presentation and scaffold the learning experience in a way that builds part-whole relationships. This keeps the audience focused on the learning objectives and steers you away from the thick of the woods!

Learning objectives or audience buy-in established

Help the audience establish why they should be personally invested in the presentation. What are they likely to get out of it? How would the content be useful to them?

Figure 9. Example of a slide establishing the learning objectives



Source: ARDC Cloud Training slides

2. Exemplification

Examples follow explanations

Modelling what to do through examples helps the audience understand new content in a concrete way.

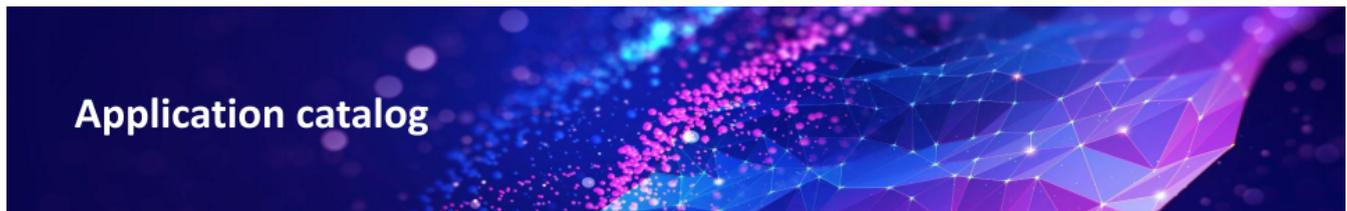
Current and relevant examples used

Examples that are relevant to the audience's real work situations contribute to meaningful content. If you are using a presentation you have prepared some time ago, check that the examples used are not outdated.

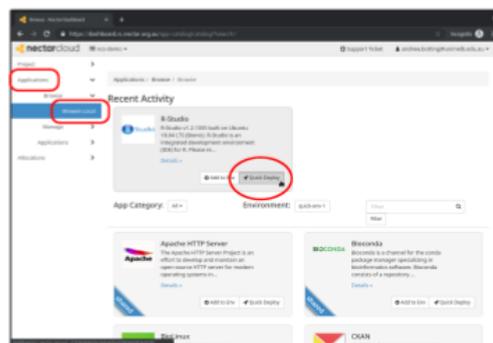
Authentic samples used

Use authentic or contextualised examples as far as possible for greater learner resonance. Screenshots and other authentic samples also allow readers to understand what you mean more quickly through a worked example.

Figure 10. Example of a current and authentic example



- Sometimes you just need a specific application (ie R Studio)
- Have a way to quickly get one running!



Add your project name

Source: ARDC Cloud Training slides

3. Coherence

Presentation overview included for longer presentations

An overview of the content that will be covered helps the audience develop a mental schema of the various parts of the content. It helps them track how much they have learned and what else they will need to learn.

Consider listing the areas to be covered verbally and visually to prepare your audience.

Transition slides are consistently used to flag changes in focus areas

Flag changes in content to help the audience focus on the area that's being discussed. Use transition slides in longer presentations, and indicate the new focus area clearly in headings for shorter presentations.

Transitions to another topic are consistently flagged with discourse markers

If the audience is encountering the topic for the first time, they might have difficulty making sense of the different parts of the topic. Mark changes of focus from one area to another with discourse markers to contextualise your content.

Examples

- "Next, we'll look at ..."
- "Moving on ..."
- "We have examined [topic]. Let's look at [another topic] next."
- "So far, we have [done something]. The following part of the presentation will [do something else]."

Key ideas are verbally and visually flagged for the audience

Help the audience follow your presentation more easily by presenting key ideas as bullet points on the slides. Use phrases such as "the 3 main ideas here are..." and "the first/second/third point here is..." to verbally reinforce what the audience sees on the slides.

To draw attention to key ideas, it is also useful to:

- ensure the amount of white space exceeds that of the text – avoid having paragraphs or extended chunks of text on a slide
- keep direct quotations brief.

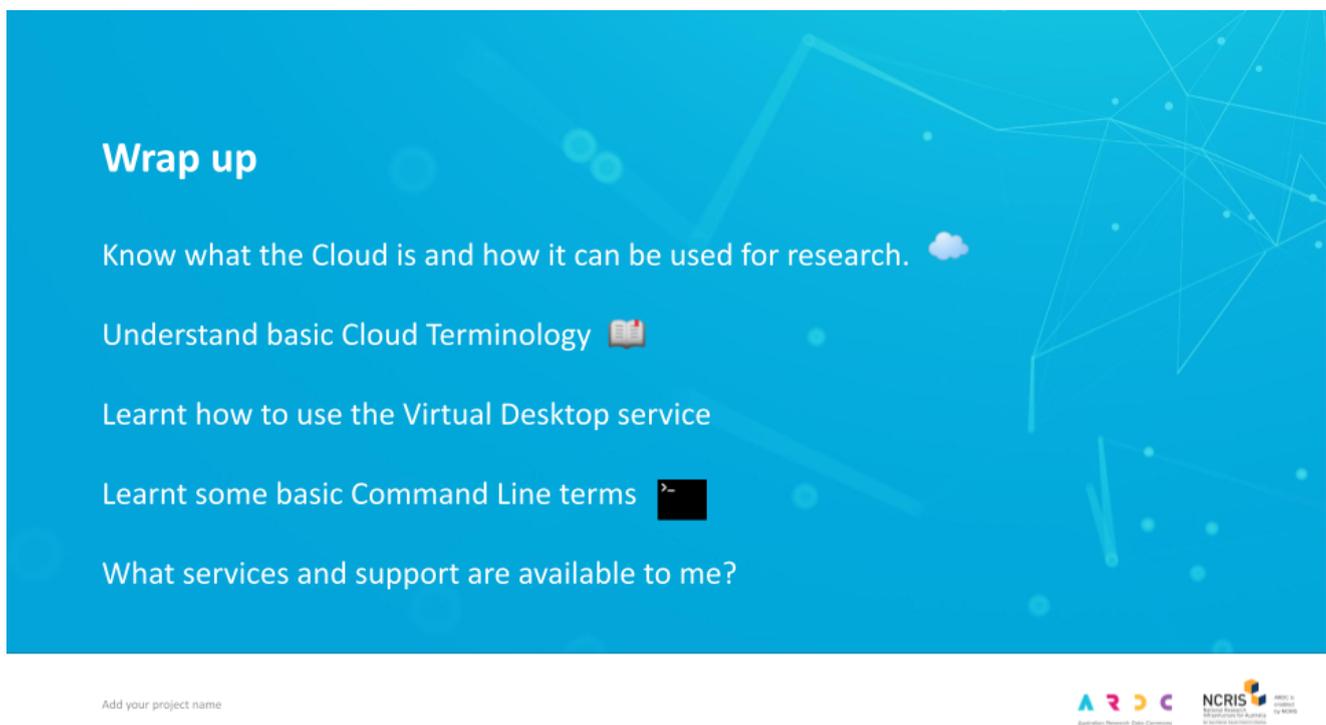
Consider including detailed information in the form of a handout or downloadable notes if necessary. Use the slides as a touchpoint for you and the audience to track understanding and move content along.

4. Closing

Recap key ideas

A strong close helps the audience recall what they have learned. Think of it this way: assuming the audience didn't have the time to go through the presentation, what are the very least they should know?

Figure 11. Example of a recap



Source: ARDC Cloud Training slides

Present calls-to-action visually and verbally

Include specific actions you would like the audience to take at the end of the presentation.

Example

What should researchers do after this presentation?

- Find relevant training on Digital Research Skills Australasia (DReSA).
- Look for upcoming Carpentries workshops.
- Make contact with [community].

Direct audience to sources for further information

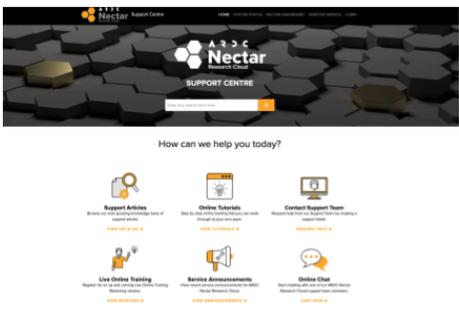
Include you or your team’s contact details and direct the audience to relevant resources for further information.

Figure 12. Example of further information

Support and resources

Support site
(Live chat, tickets,
knowledge articles)

support.ehelp.edu.au

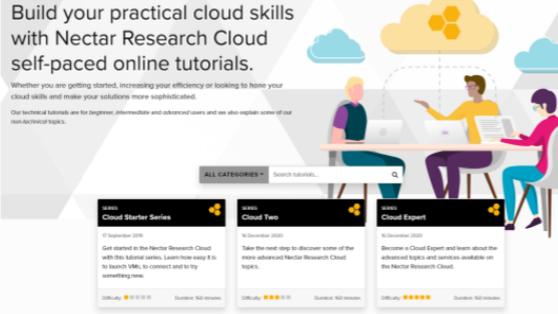


Add your project name



Support and resources

Tutorial Site
<https://tutorials.rc.nectar.org.au/>



Add your project name



Source: ARDC Cloud Training slides

5. Review

Congratulations! Your presentation or video is ready – it's now time to review it. At this stage, you want to ensure that the content and technical elements are working as they should and that there are no gaps in the communication loop.

Include relevant resources

Is there a cheat sheet, a checklist or other resources you've referred to in your presentation? Remember to include a downloadable version of these resources in your presentation so the audience can access them more easily.

Other relevant resources could include:

- cheatsheets
- a PDF version of the presentation slides
- transcripts
- related presentations
- links to pre-learning resources
- links to post-learning activities
- checklists
- templates
- forms
- case studies
- practice exercises.

Trial the presentation or video

Test how your presentation is actually received by trialling it with an audience!

Trialling the presentation with people with no background knowledge in the area and asking them to teach back (tell you what the material is about and what they learned from it) would help reveal areas in the presentation that need to be made more explicit, whether it be the key terms, key concepts or steps involved.

At the same time, trialling the presentation with other subject matter experts is useful in challenging your own assumptions and highlighting areas which might have been overlooked.

Refine it based on the feedback

Consider how often the presentation will be reviewed over its lifetime, and who will review it. If you plan to park feedback aside for the next iteration of your presentation, consider how it will be documented to help you remember and find it more easily.

Meet approvals and sign-offs, if any

It is a good idea to share the presentation with your team and to get feedback on it. It is also worth finding out if your organisation has specific guidelines about the approval process and who you can share the material with, and how to share it.

6. Sharing

Follow your organisation's guidelines for the sharing of resources

Are there organisational guidelines for the sharing of presentations and learning resources? Your organisation might have its own channels through which you could share your presentation. It might also be worth finding out if there are guidelines to follow before you share your presentation more widely.

Consider sharing your resources through DReSA

Ready to share your presentation with the broader community? Help the community find you and your resource more easily by entering details that describe and provide access to your resource in [DReSA](#).

You can also create a [trainer profile on DReSA](#) to increase visibility of your skills and help the community locate you.

Useful References

Here's a quick recap of the resources we referred to in this document:

- [the ARDC Training Materials Metadata Checklist](#) for enacting FAIR
- Vision Australia's page on [typography in inclusive design](#)
- Microsoft's support page on [how to hide or show a slide](#)
- Queen's University Belfast's [page on accessible content design](#)
- the visual collaboration tool [Miro](#)
- Microsoft's support page on [adding closed captions or subtitles to media in PowerPoint](#)
- Microsoft's support page on [using a screen reader to add closed captions to recorded PowerPoint presentations](#)
- Microsoft's support page on [creating a transcript from a pre-recorded file](#)
- [Digital Research Skills Australasia \(DReSA\)](#).

Are you interested in Universal Design for Learning (UDL)? To find out more, read the following:

- [Universal Design for Learning \(UDL\)](#), developed by CAST
- a one-page summary of [Universal Design](#) by [the Centre for Universal Design Australia](#)
- NSW Government's [Universal Design for Learning planning tool](#)
- [Universal Design for Learning in Tertiary Education](#) (for education staff working in the Higher Education and the Vocational Education and Training sectors).

We'd Like to Hear From You!

How did you use this self-assessment tool? What did you like about it? What could be improved? Let us know at skills@ardc.edu.au.

Contact us

If you have questions about the content of this self-assessment tool or would like assistance, please contact the ARDC Skills and Workforce Development team via skills@ardc.edu.au.