



Guide for Adaptation

COURSE PACKAGE T.O.P.
Theory and Operational Principles

 Consiglio Nazionale delle Ricerche
Istituto di Biometeorologia



World Meteorological
Organisation

CONTENT GUIDE FOR ADAPTATION

T.O.P. Seasonal Forecast

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Content Guide For Adaptation

These guidelines are intended to facilitate the adoption of content by other institutions and instructors, in order to add and modify content to fulfil their regional and national or institutional education standards

Slide Presentations

Presentations are a good starting point to create eLearning content.

To improve and level out the quality of the presentations, we recommend a set of simple guidelines, in order to have homogenous content facilitating its conversion into different formats.

Chunking content: small is big

1. Divide the entire the presentation into large identifiable sections.
2. Analyze each section to assess if it can be made smaller. Any section which can function as a standalone topic should preferably not combined with others.
3. The first one or 2 slides should include a presentation structure/outline highlighting the learning objectives.
4. Avoid text heavy slide, splitting complex slides into 2 or more slides
5. Each chapter/section should be introduced by a headline slide.
6. The presentation should include some bibliography, and useful links

Point 5 and 6 are useful hints for the instructional designer that will work in team with the author to create the eLearning content.

Create a form for each slide presentation to summarise: presentation type, presentation title, authors, keywords (useful to define course categories and tags), learning goals, skills and competences required.

See the example form e.g. <https://drive.google.com/open?id=OB0IYhkEYkYw8ZWNVtkdORk5jXOk>

Designing the layout

- create a clean presentation template avoiding heavy graphic elements that could represent a constraint (like heavy box frames, or headers and logo lists in the footer);
- choose a set of typographic elements for titles (h1, h2, h2, etc) and body;
- Multimedia such as images, labelled diagrams, videos, etc. are worth thousands of words. Check resolution images and graphics, discard low resolution images.
- preferably avoid any animation if it is not necessary (when exporting to pdf either use some plugins to splits each slide into several slides or recreate each stage of builds in separate slides before converting, in Keynote - Apple there is an option to export to pdf and print each stage of builds)

Annotations and Comments

A slide presentation is a support to the trainer. In order to use lesson presentations as a eLearning content, there are different options to recommend:

- add some annotations/comments in each slide. Powerpoint, Google slide, and Keynote, in the editing mode, allow to write comment in a specific textarea; comment can also be printed or displayed during the presentation. An annotated presentation is the best starting content to build an elearning object; some authoring tools for eLearning easily convert slide presentations into learning objects (e.g. Storyline Articulate)
- record an audio, as narrations can enhance a web-based or self-running slide show. Powerpoint and Keynote both have this functionality. The presentation with audio can be exported as a video. The video can be uploaded to the eLearning platform, or to youtube or vimeo; in the latter case, the video can displayed/published in a webpage or in an elearning platform. In some

eLearning platforms it is possible to record an audio comment on each slide (e.g. thinkific.com)

Tools

The popular softwares to build presentations are

- powerpoint
- keynote

There are also some cloud solutions that could be taken into account for specific purposes:

- **google slides**: despite the poor features in terms of functionalities (e.g. ignore slides, images management) this google tools is useful for collaborating and sharing; files can be exported in several formats including PDF and SVG
- **canva** <https://www.canva.com/> allows also to create infographics and other type of graphic content; it comes with clean templates, and the presentations can be downloaded in pdf or image formats
- **prezi.com** is a presentation tool that instead of slides makes use of one large canvas where to pan and zoom to various parts of the canvas; videos and other media can be placed into the canvas to emphasize the ideas presented; the presentation can be embedded on a website or downloaded for offline usage. It is not so easy to make a good presentation with prezi, and the exported ppt could require some editing.

Note: Sharing a source file presentation, in different formats, could facilitate further modifications and localizations.

Images and graphics

Graphics, images and illustration are extremely useful to create engaging presentations. Moreover “it is indeed more difficult for audiences to process information when it is presented in spoken and written form at the same time.” (Reynolds 2012).

There are some guidelines and books that could be useful to learn how to create an effective presentation. The most popular are:

- Reynolds, G. (2012). *Praise for Presentation Zen : Simple Ideas on Presentation Design and Delivery , Second Edition.*
- Duarte, N. (2008). *Slideology (Vol. 1).*
<http://doi.org/10.1017/CBO9781107415324.004>

The approach suggested by Reynolds and Duarte is a good starting point, but consider that every discipline has its own knowledge framework and its own visual representation. In this perspective it could be interesting to experiment new way to visually communicate Climate and Seasonal Forecast Sciences and create a disciplined based approach to text and visual content, particularly for eLearning purposes.

Free resources

There are some Creative Commons (CCBY) resources for photos, and graphics

<http://www.freepik.com/>, vectors, illustration, photos

<http://unsplash.com>: high resolution photos

- thenounproject.com: icons in svg and png format

Authors, Fair Use & Permission

When authors share their training material, it could be recommended to ask their permission to use it clearly highlighting that the materials will be “processed” (redesigned and organized) for eLearning development purposes.

Videos

Videos for eLearning purposes are considered a “killer” content to engage learners. Hypermedia structures increase interest and motivation, adapt to preferences and cognitive needs, allow active and constructive information processing, and stimulate the acquisition of self-regulatory skills (Scheiter and Gerjets 2007). Other research

results highlight that pages (or presentations) too text-heavy do not facilitate learning or understanding (Hess, A. K. N., & Greer, K. 2016).

Videos are a great content but they require both some skills and tech equipment.

In eLearning course there can be different types of videos.

- introductory videos to introduce the overall course (e.g. [by European Journalism Centre](#)), or tease the lesson (e.g. [Course Teaser - Charting tools for the newsroom](#), [DAVID MAMET TEACHES DRAMATIC WRITING](#)).
- video lessons
- screencast

The first type, as showed in the examples links, is more “videomaker”, with a lot post production, while the second type (video lesson) can vary. In both cases it is recommended to “brand” the video with opening titles and soundtrack.

Introductory videos

Before recording an introductory video, it is recommended to first create an outline of the topics to cover in the video. An outline will also help to keep the video to a reasonable length, and file size. An average video is length is 3-5 minutes for introductory, and from 10/20 min for a lesson.

Which information should be included in the introductory video and how to present it?

- Generally speaking there are some information that might be included:
 - Welcome to the participants, including introducing yourself, your title and field of expertise
 - The importance or reason for this course
 - How or why this course is relevant to the participants
 - How the course is organized and will be delivered
 - The course overall goals and learning objectives
- the main suggestion is: keep it simple; consider different style and narrations type and choose the one that you think it is more suitable for your audience.

Write a Script

A script is literally what you plan to say while recording. A script is useful also to have the transcript already prepared.

Recording a lesson or a seminar

A F2F lesson could be a good opportunity to video recording and then optimize the video with some post-production. However there are some precaution to be taken into account:

- check the room source of light and setting
- make some video test before recording
- talk to the presenter in order to know which are his/her presentation habits ("I prefer to move", "I prefer to sit") and trying to find a good mediation between video needs and presenter habits
- in team with the presenter go through the presentation before the video recording, to better understand topics and the structure of the presentation;

Some post-production work will be needed:

- opening title, soundtrack
- audio editing, text and captions

Video model releases

When shooting during a conference or a training classroom, good practices suggest to inform the participants that the lesson will be video recorded and they could be shot in some video frames. This sounds too precaution since it poses the issue in terms of "personality rights" laws, that limit the use of people image for specific reasons. As these videos have educational and non-profit purposes, it could not be the case of "personality rights" infringement. However, the organisers should consider if this could be an issue, and decide to ask the participants a consent. Consider that, some images could be reused for communication materials and teasers. Therefore to avoid

any problem, the organiser could invite the participants to sign a Photo/Video Consent and Release Form.

Screencast

A screencast is a video recording of computer screen, and usually includes audio. Common examples of screencasts are onscreen tutorials, video lessons, or slideshare presentations. Screencast are particularly useful when illustrating software, web application, or web platform.

Before starting to screencast it is recommended to define the outline and write a short script. Some post-production work will also be needed.

There are several tools for screencast

- Adobe Captivate
- Camtasia Studio
- Screenflow
- Camstudio
- Screenr
- Jing
- Snagit
- Microsoft Expression Encoder
- Screencastify

Video Post-production

It is a specific competence in video making. However some post-production can be performed by non-professional with some practise and some video tutorials on youtube.

There are several softwares and tools from the basic ones to the more complex and professionals. There are also online tools, such as [YouTube Editor](#).

- professional softwares: e.g. Adobe Premiere, Final Cut

→ amatorial software: e.g. Camtasia, iMovie, Movie Maker

Whiteboard & Animated Videos

Whiteboard videos were made by hand, with a time-lapse video of someone's hand drawing on a whiteboard. Now the process can be managed with specific softwares.

This type of video is used to create explanatory videos. The best examples of whiteboard videos are:

→ RSA animated series <https://www.thersa.org/discover/videos/rsa-animate>

→ Commoncraft teaching videos <https://www.commoncraft.com/videolist>

This peculiar video type can be created also with some specific software:

→ <http://www.videoscribe.co/>

→ <https://www.rawshorts.com>

There are tools also for animated videos such as:

→ <https://www.animaker.com/>

→ <https://www.powtoon.com/index/>

Consider to use Adobe After Effects for professional results, however it requires some training and practice as it is a very complex software.

Webinar

Webinar are useful tool to deliver content, to interact with learners, and for community building.

Webinar can be used for virtual classrooms, training session, and presentations.

There is a difference between a webconference and a webinar: the webinar implies interaction between attendees and presenter. Thus there are specific web technologies to be used.

Furthermore webinars (or webconferences) can be recorded and rebroadcasted, for asynchronous elearning.

Tools and Platforms

There are several ways to run webinar/webconference: e.g. youtube live event, webex, zoom.us, demio.com. And also some software for a more custom service (e.g. the OS Open Meeting).

Youtube live event is free, and records a video file of the whole webinar (the file can be downloaded). While other tools, require an annual or monthly subscription plan.

Podcast

Podcasts are one of the most convenient and portable eLearning tools. An eLearning podcast is quite similar to a radio programme, and it suits for content such as introductory or general overview, case studies and best practice storytelling, and for expert interviews. Few examples:

- **MIT**: “What’s the science behind climate change, and how can we combat a warming climate? Those are complex questions that MIT faculty are actively pursuing. In this podcast, four MIT professors— Dan Cziczo, Kerry Emanuel, Christopher Knittel, and Andrew Whittle—will discuss their climate research on areas including hurricane activity, coastal flooding, carbon dioxide, and economic policy. Read more: bit.ly/1ErRX5Y”

<https://soundcloud.com/mitalumni/the-research-and-science-of-climate-change>

- “**Warm Regards**” is a podcast about the warming planet. The show is hosted by meteorologist Eric Holthaus. Co-hosts are Jacquelyn Gill, a paleoecologist at the University of Maine, and Andy Revkin, a veteran journalist at the New York Times.”

<https://soundcloud.com/warmregardspodcast>

A podcast should be branded: mention the organization name, website info, and any other contact information that a listener might need. Use a style that aligns to the target audience and the eLearning goal (tone of voice).

The audio files (mp3) can be uploaded into most of the eLearning platforms or in content sharing platforms such as youtube, Soundcloud, archive.org/

Tips

- create a detailed outline or an eLearning storyboard for every podcast. The outline is useful to decide which topics to include in each episode.
- create a podcast template. Some elements can be reused in every episode, such as audio intro and sound effects. The eLearning template is just a general guideline that can need minor adjustments, depending on the subject matter.
- Get online learners behind the microphone. In some cases, and depending on topics discussed, the learners could be guided to produce their podcasts, to share experiences and solutions adopted, and also to contribute with interviews and suggestions to the podcast making.
- Invite guest speakers and interviewees, who are experts in the field or have an interesting take on the topic.

Tools

- microphone. Some laptop or desktop microphones allow to have an acceptable audio quality.
- recording and editing software. e.g.: Audacity (Windows, OS X, Linux) is the standard for free audio-editing. For Mac users there is also GarageBand (OS X). Adobe Audition Creative Cloud, Wavepad are more professional

Visualizing Data

“Data visualization refers to the techniques used to communicate data or information by encoding it as visual objects (e.g., points, lines or bars) contained in graphics. The goal is to communicate information clearly and efficiently to users. It is one of the steps in data analysis or data science.”

Data visualization is the presentation of data in a pictorial or graphical format. The interactive visualization of data, goes a step further for a more interactive experience.

Data visualization can be developed as static visualizations with several tools and then exported into learning materials.

There are several data visualization web services that create visualization that can be embedded in any eLearning platform.

- **Datawrapper**: : Line Chart, Bar Chart, Stacked Bar Chart, Map, Donut, Table. Data can be Copied & Pasted, Datawrapper use any data from Excel, CSVs, PDFs or the web. There is also a free plan: Single 10k, 10.000 visualizations.
<https://www.datawrapper.de/>
- **Plotly**: charts, presentations and dashboards. For analysis: JavaScript, Puthon, R, Matlab, Jupyter or Excel; there are several options for importing data. It is a paid service, but there is also a free plan.
<https://plot.ly/>
- **Highcharts** supports line, spline, area, areaspline, column, bar, pie, scatter, angular gauges, arearange, areasplinerange, column range and polar chart. It produces animated JavaScript and HTML5 SVG graphs. It is built on top of jQuery, little programming skill to create a simple web chart. It is free for a personal website, a school site or a non-profit organization. HTML 5 based on native browser technologies, no plugins needed; Open on GitHub; compatible with browsers including mobile, tablets and old IE back to IE6.
<https://www.highcharts.com/>
- **DataHero**: DataHero is self-service cloud BI that allows any user to quickly connect to cloud services. It combine datasets from different services; dashboard are automatically updated for data sharing. It is a paid service, the free plan allows to create and share charts, import directly from 26+ services (e.g. SPSS), upload Excel and CSV files, unlimited uploads up to 2 MB
<https://datahero.com>
- **Chart.js**: Simple yet flexible JavaScript charting. Open source (available under the MIT license.), 8 Chart types each of them animated and customisable,

HTML5 Canvas, responsive. It requires some development knowledge

<http://www.chartjs.org/>

- **Tableau Public:** the app can be downloaded for free (there are also paid plan that includes other features) and the visualizations created are saved and stored in Tableau public user profile. The visualizations can be embedded in any webpage. The free plan includes 10GB of space.

Data source: Google Sheets, Microsoft Excel 2007 or later, Text files – comma separated value (.csv) files, JSON files, Statistical Files; SAS (*.sas7bdat), SPSS (*.sav), and R (*.rdata, *.rda), Spatial Files (ESRI shape files, KML, and MapInfo), Web Data Connectors, OData

<https://public.tableau.com/s/>

- **Exhibit** is a and fully open-source publishing Framework for Data-Rich Interactive Web Pages by MIT. Exhibit is used to create web pages with advanced text search and filtering functionalities, with interactive maps, timelines, and other visualizations.

<http://www.simile-widgets.org/exhibit/>

- Other visualization tools can be found here

<http://www.visualisingdata.com/resources/>

Visual storytelling

There are visual tools to create interactive stories, displaying information with text, videos, images and audio. These visual solutions can be used as embedded in any web page. Here below some examples:

- **TimelineJs** by Northwestern University Knight Lab. This free and open source tool creates visually rich, interactive timelines to be embedded in webpages. Data source: Google spreadsheet. Custom installations with some JSON skills.

<https://timeline.knightlab.com/>

- **StorymapJs** by Northwestern University Knight Lab. It is a free storytelling tool to tell stories on the web highlighting the locations of a series of events.

StoryMap JS can pull in media from a variety of sources. Twitter, Flickr, YouTube, Vimeo, Vine, Dailymotion, Google Maps, Wikipedia, SoundCloud, Document Cloud and more.

<https://storymap.knightlab.com/#overview>

- **Juxtapose** JS by Northwestern University Knight Lab, easy-to-make frame comparisons. It compare two pieces of similar media, including photos, and GIFs. It's ideal to explain slow changes over time or before/after stories that show the impact of single dramatic events (natural disasters, protests, wars, etc.).
- **SoundCite** by Northwestern University Knight Lab allows to add inline audio to a text. <http://soundcite.knightlab.com/>
- **Digital Stories**: A collection of tools list of tools and resources to build digital stories. <https://digitalstory.tools/>

The eLearning Team

In a perfect world, the perfect eLearning team is a transdisciplinary team, where each professional play his part in the overall process. A perfect team should include: eLearning Project Manager/Team Leader, Instructional Designer, Subject Matter Experts, Course Authoring Specialist, Learning Management System Specialist, Graphic Designer, Communications Manager, IT Specialist, QA Tester.

When setting up an eLearning team in a real world, it is important to know which is the perfect set of competences of an eLearning “dream team”; this allows to better define the right set of team competencies needed and the best sustainable team solution to reach the eLearning goal.

Promoting eLearning

The following few lines, far from being a dissertation on how to build eLearning communication strategy, are just a reminder to underline that some communication

strategy should be needed to better disseminate and promote eLearning initiatives and to build engaged communities of practices.

In a Digital Communication Strategy different approaches, tools and techniques can be used to reach a wider audience and to disseminate eLearning initiatives to the right audience and also to selected media. Furthermore, the web is a dynamic environment and offers a variety of promotion channels.

e.g. <http://www.climate-knowledge-hub.org/>.

Some specific communication plan and tools should be developed as a result of a shared process amongst key actors of the project team. This plan should also include some SEO analysis and social media management to monitor and tailor better campaigns. In this perspective, a @IBIMET_RTC Twitter account has been created to be used as a communication channel for the RTC community members to share information and resources.