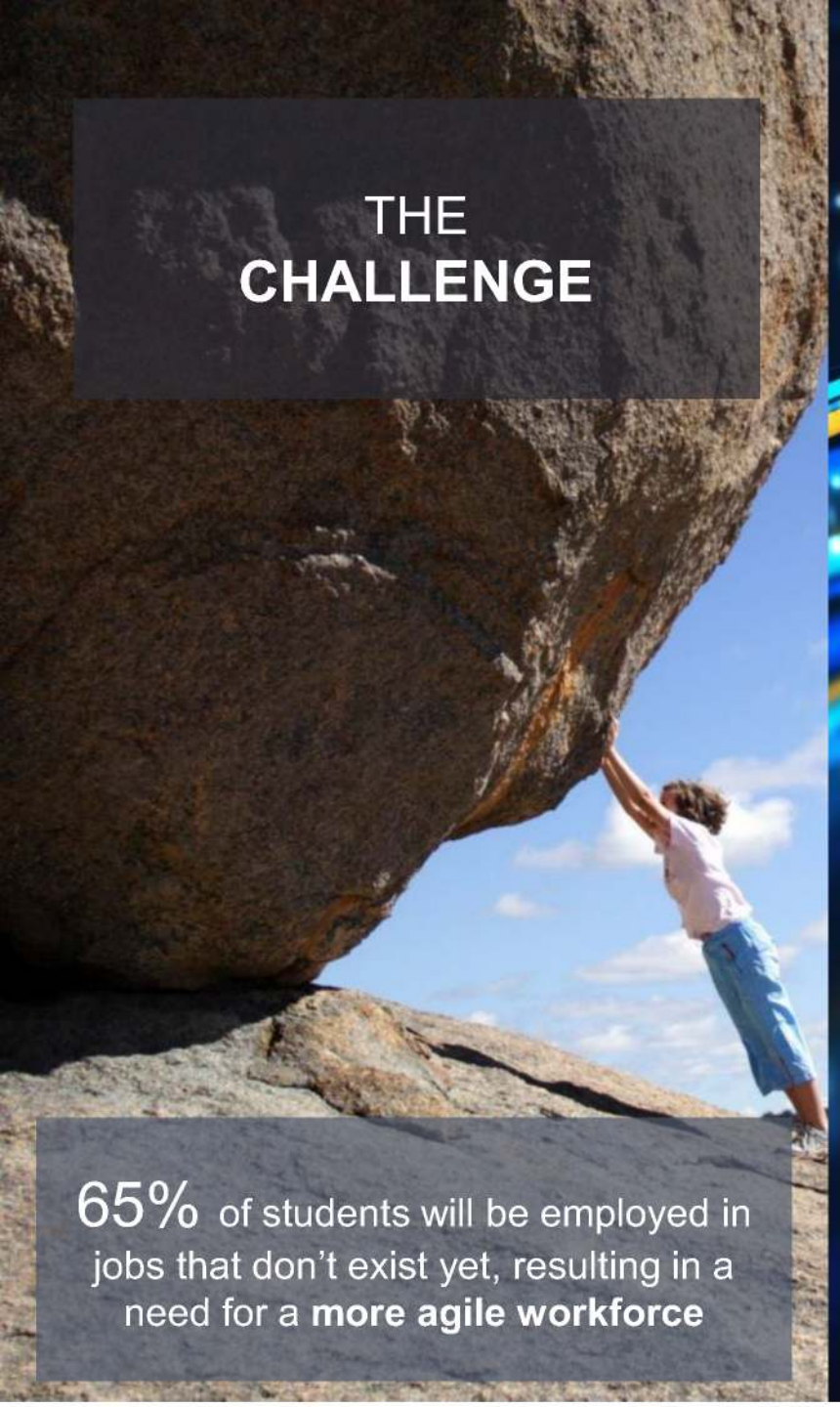
Digitalisation

Standardising modular learning in UK PDSE

Mr Michael Wadley

Defence Academy Profile



THE **CHALLENGE**

65% of students will be employed in jobs that don't exist yet, resulting in a need for a **more agile workforce**

THE **SOLUTION**

47% of L&D teams plan to deploy **micro-learning** programmes in 2024

THE **BENEFITS**

Organisations who digitise a proportion of their learning can typically expect to generate over

30% **cost savings**

The Defence Academy solution – Project CODEX

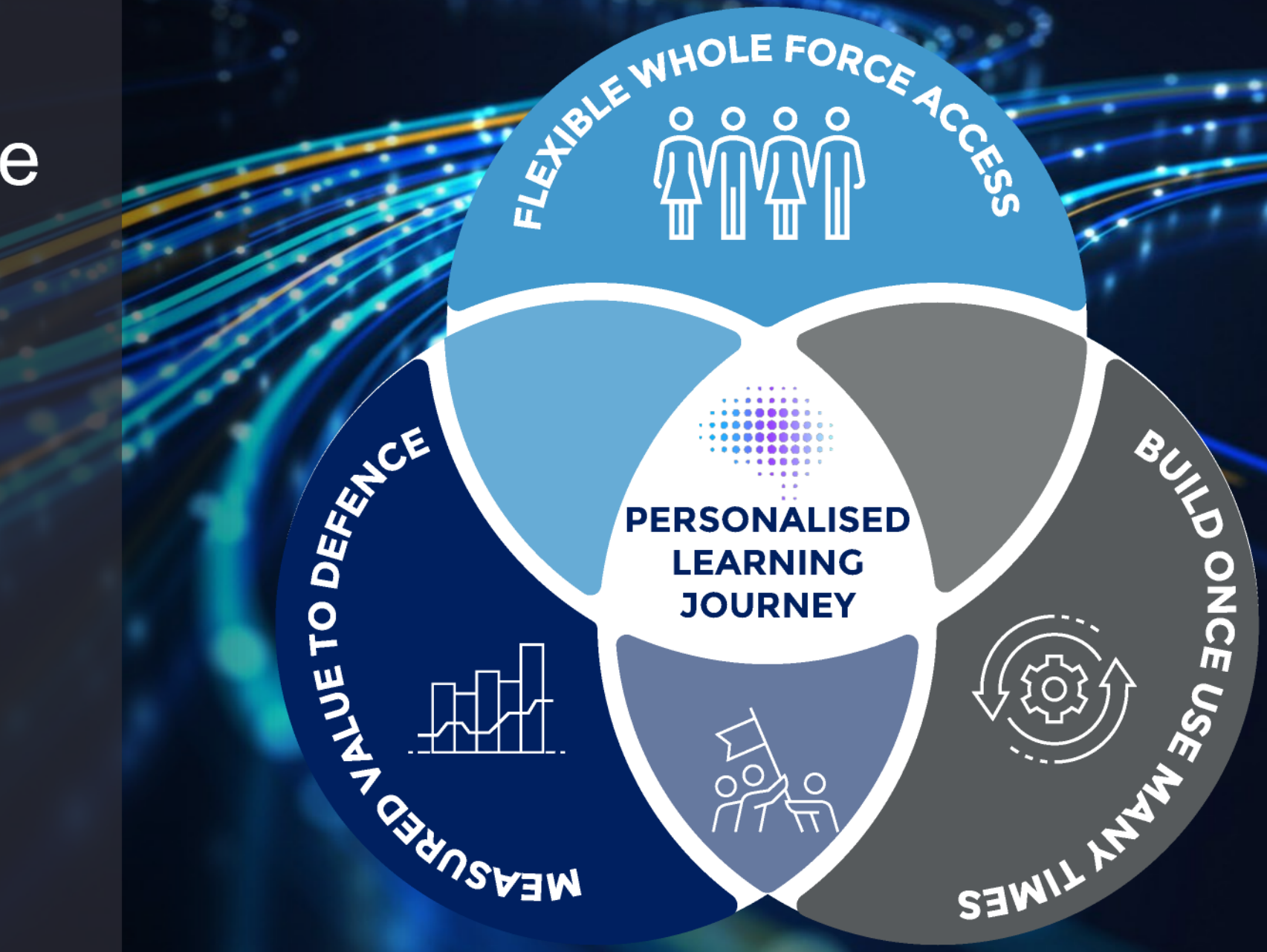
These questions led to the development of a five-year project at the Defence Academy that seeks to:

> *"To convert all Defence Academy's knowledge-based content into a **flexible**, **reusable** format to support Whole Force learning with a focus on **build once, use many times**"*

Project CODEX will transform the way we deliver digital learning across Defence

> Digitisation and wider access to Defence training is going to be a gamechanger

Major General Andrew Roe CB



Methodology

Key principles

- Designed in bite-sized modules, often known as microlearning
- Standardised design, ensuring quality standards can be delivered every time; the quality is your brand
- No assessment in microlearning; assessment happens when a course is created from a cluster of microlearning modules

Content – **S**pecific – **I**nformation – **L**earning – **H**ubs

C-SILs

The four uses of C-SILs

C-SILs are adaptable and can be used as one or all of the below options concurrently

C-SIL as a whole study unit

=

Whole Study Unit

C-SIL as a pathway

Course

Workshop

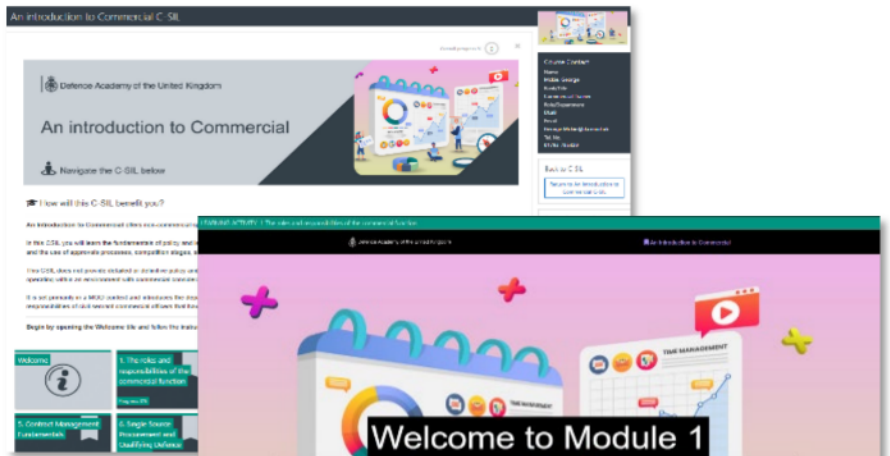
C-SIL feeding courses

Course

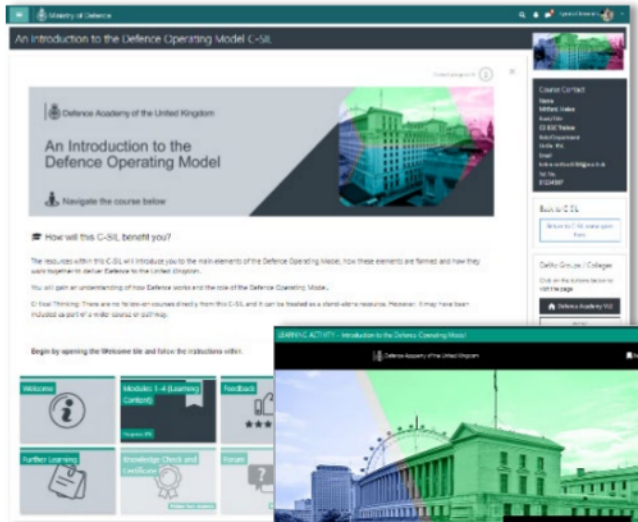
Standalone C-SIL

Information accessible, at point of need

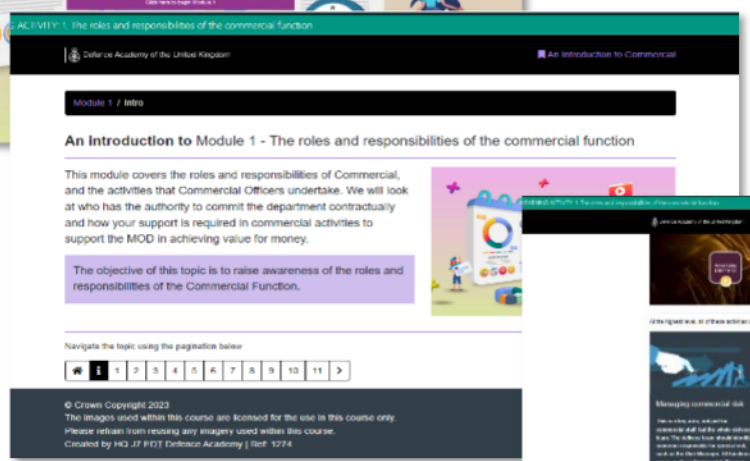
Standardised (look and feel) that learners associate with quality

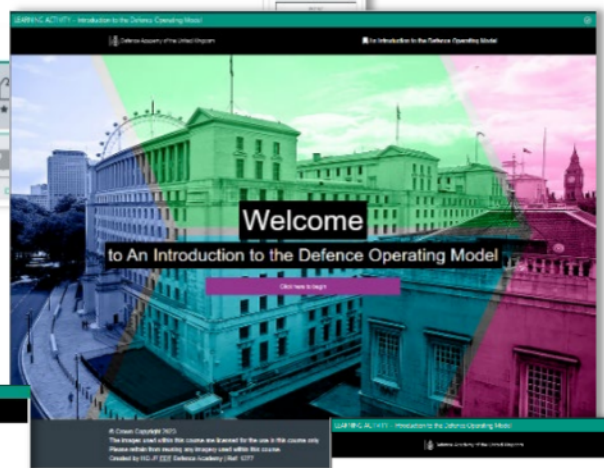


C-SIL MDE Ph 1 Introduction to Commercial



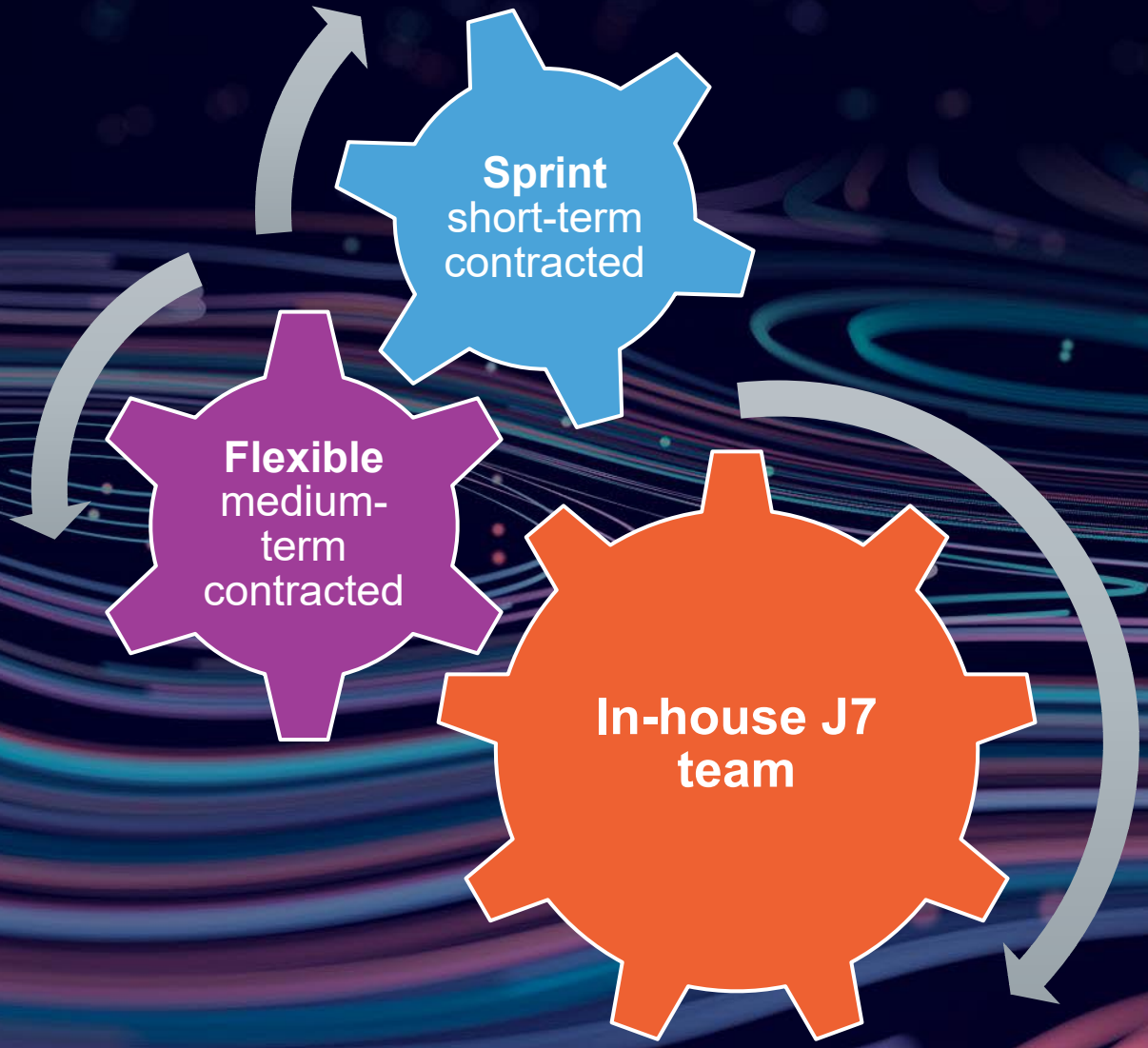
C-SIL MDE Ph 1 Defence Operating Model (DOM)



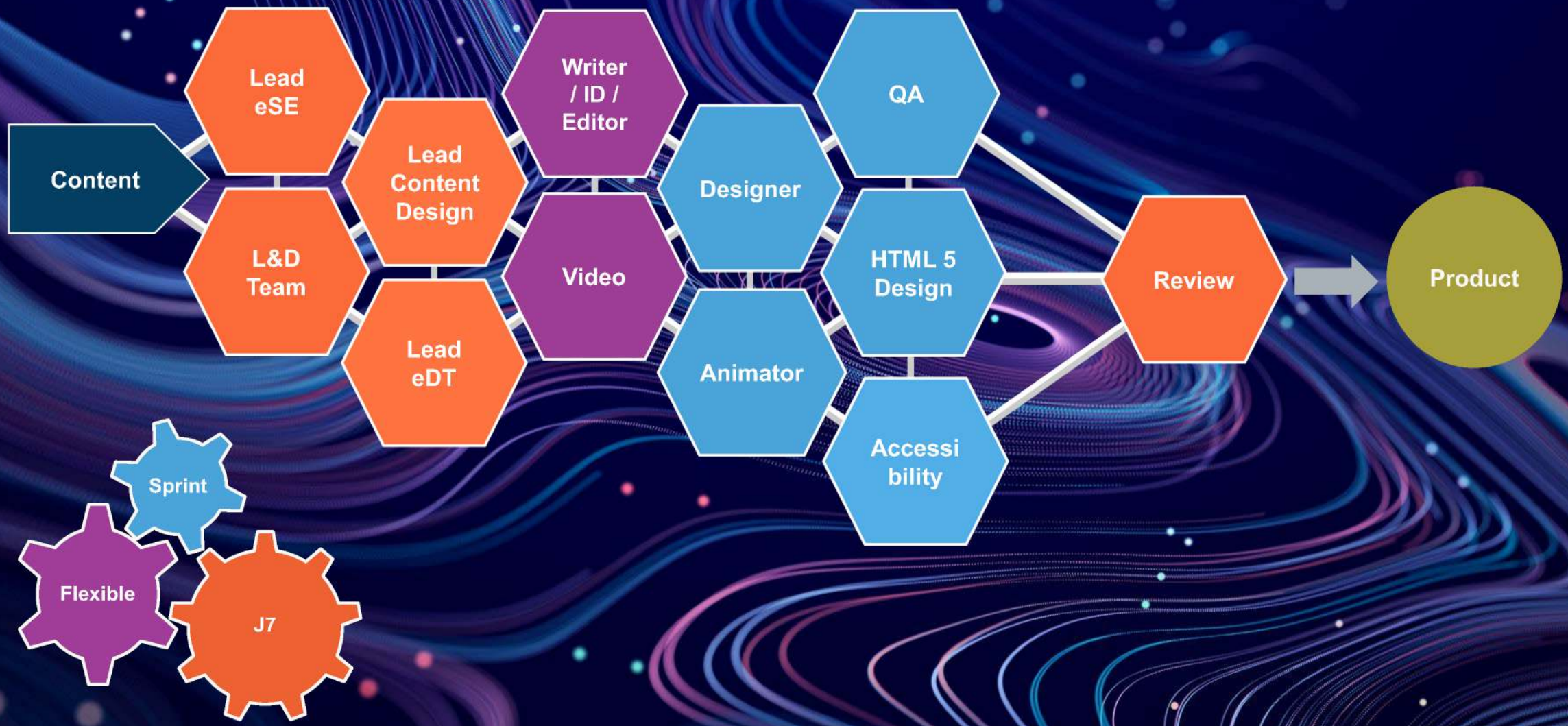


Historic Workforce Design

Innovative Workforce



Innovative Workforce



Return On Investment

ROI is commonly assessed utilising the equation:

$$ROI = \frac{Value\ of\ Investment - Cost\ of\ Investment}{Cost\ of\ Investment}$$

- This cannot be adequately aligned to current delivery methodology at the Defence Academy, so a **new metric** has been **developed**
- **Organisations** that develop internal training **can't articulate value of investment effectively**
- **ROI** has not been developed for digital content delivery within the public sector.

We have developed a Defence Academy version of **ROI** called - **Value in Pounds** (ViP)

VIP – Value In Pounds

Cost Avoidance

VIP = F2F Cost + T&S – Online Cost PP x Participants

Example: **Active Bystander**

VIP = £4,704,000 + £7,350,000 – £0.04 x 147,000

Cost Avoided = **£12,054,000**

Value in Pounds – Cost Avoidance

		Active Bystander
Digital Course creation Cost	Total Product Cost = Design Cost + review Cost (18 months)	£4485 +£1861 = £6346
	Number of students = Digital Course completion	147,000
	Cost Per Person = Product Cost / number of students	0.04p
	Digital Course Creation Cost = Total Product cost	£6,346
Additional Cost	T&S ROM = Average T&S	£50 pp
	T&S Total= Student Number * T&S ROM	147,000 x £50 = £7,350,000
	Additional Cost: = T&S Total	£7,350,000
Assumed F2F	Delivery sessions = Number of Students / Class size	147,000 / 20 = 7350
	F2F cost per session = delivery hours * hourly rate	20 (inc2 delivers) x £32 £640
	F2F cost per session = hours * hourly rate + Average T&S	£640 / 20 + £50 = £83
	Total workforce hours= delivery sessions / delivery hours	7350 x 20 = 147,000
	Assumed F2F = F2F Delivery cost	£4,704,000
	Added Value= Assumed F2F - Total Product Cost	£4,697,654
	Value in Pounds ViP Added Value + T&S Total	£12,054,000

Online cost £0.04 pp

100 people for 1 year to deliver the same output

Recommendations

- Investigate a digital delivery methodology that will work for you
- Standardise
- Identify the value of your learning
- Design a workforce to meet your ambition

Systems

- Agree a balance on interoperability vs. security
- Develop user profiles

Ministry of Defence

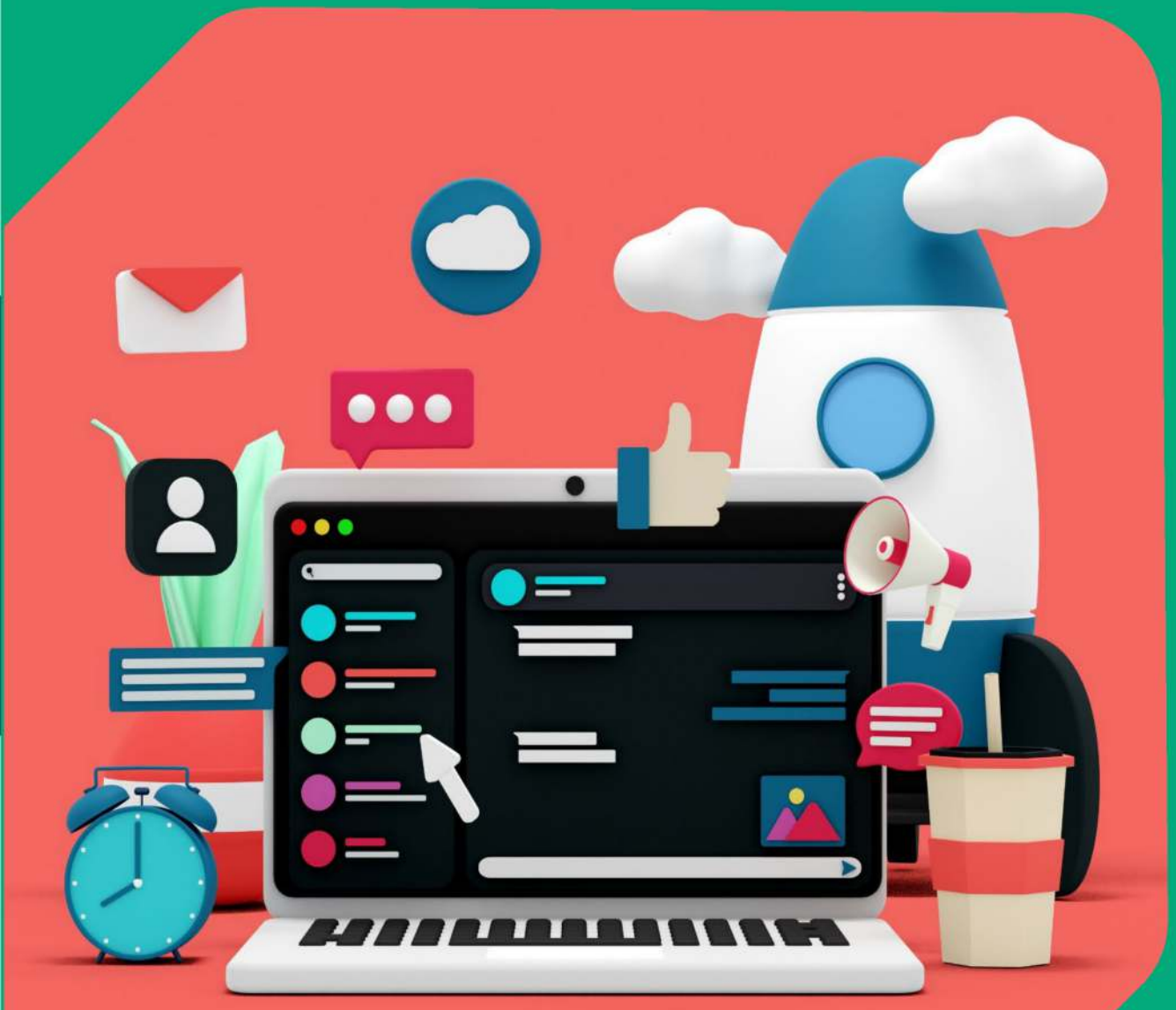
Any Questions?

If you have any questions for:

Michael Wadley (Head – LCaD, The Defence Academy of the UK) or
Shane Kelly (SO1 Futures – LCaD, The Defence Academy of the UK)
Please email:
Shane.Kelly@da.mod.uk

Defence Academy
of the United Kingdom

Technology Enhanced Learning Standards



Contents

Subject: images

Use of images

Images are used in eLearning to increase learner engagement, reduce cognitive load and facilitate content recall.

However, not all images have learning value. Some are used for decorative purposes: to boost learner interest, to break up a wall of text and provide a natural pause, or to support the content visually.

MOD Brand Guidelines

Pages 57-62 of the MOD Brand Guidelines document the guidance on the use of images for MOD. MOD branding can be located on MODNet via the DDC Brand page.

Images with learning value should have alternative text, which will follow the style guidelines in JSP 101. The WebAIM website provides further information on accessible images.

Image sources

- **Defence Imagery**
  This media library covers all MOD services. The Downloadable collection hosts media that is available to download and may be reused under the terms of the Open Government Licence.

  If you require media which is not available in the Downloadable collection, please send an email request to admin@photos.mod.uk. In your request:

  - include the full filename of the image or video required (filename example screenshot); and
  - explain your request and exactly how that media will be used.

  This will allow a decision to be made on whether or not to grant permission.

- **Adobe Stock**
  This library is available via your Adobe Creative Cloud licence. The "Free" media is available and may be reused under the terms of the Adobe Stock Standard Licence. You can also use your "Plan Credits" for any media that are within the "Free" filter.

- **iStock** (Defence Academy only)
  iStock media is also available to Defence Academy personnel via the Serco contract. You can request media downloads via the "Printing and Graphic Design" request section of the Self-Service Portal located in the Defence Academy Information Service (DAIS).

- **Imperial War Museum (IWM)**
  This online library is particularly useful for historical imagery. You can download standard-resolution images and embed films or sound recordings from the IWM website free of charge, for your own private and **Non-Commercial use**, under the IWM Non-Commercial Licence. Licence terms should be adhered to at all times.

- **UK Government Flickr Accounts in the National Archives**
  Please observe the terms and

accreditation instructions within each individual Flickr account to ensure you are adhering to licencing requirements.

All other media used should adhere to the individual licence terms and follow any attribution instructions provided. This generally includes the name of the person, a link to the license that it falls under, and the name of the file.

Formatting images for web (standard use)

1. Start with a good quality image.
2. Choose your format.
    a. Photo (with detail) = JPEG
    b. Graphics/illustrations/transparent backgrounds = PNG
    c. Graphics/illustrations/icons/logos that are vector-based and where it would be beneficial to retain the vector quality (e.g. contains text) = SVG
3. Export your image and define its size and resolution.
    a. Large images can slow down your website. A good file size for web is 100-500kb.
    b. Images shouldn't be smaller than 1000px. For images taking up a larger area, you may need to use a resolution of up to 2500px.

Best practice when working with images

The Brand Guidelines are a comprehensive source of best practice for images, however some additional considerations are taken into account to cover accessibility requirements.

- **Replace images of text with true text** when possible. Logos are an exception to this.
- **Add alt text**. The Images Tutorial in the w3 website details how to provide alt text based on the purpose of the image. This includes null text alternative for decorative images.
- **Ensure image quality**. The worse the quality of the image, the more pixelated it will be when zooming in or using screen magnifier software.
- **Don't only use colour to convey meaning**. A picture of a single red apple in a basket of green apples could be used to convey different messages, but users with some forms of colour blindness wouldn't be able to spot the difference.
- Ensure your images showcase diversity and are relevant to the content.

Subject: **Icons**

Use of icons

The primary reason for using icons within eLearning development is to provide:

- a visual link to a subject/concept; and
- a visual connection to assist with navigation and content signposting.

MOD Brand Guidelines

Pages 63 to 72 of the MOD Brand Guidelines document the guidance on the use and creation of iconography for MOD use. MOD branding can be located on MODNet via the DCC Brand page.

MOD icons are available via the Defence Brand Portal (requires registration).

Font Awesome

Font Awesome is an online icon library and toolkit. The Defence Learning Environment (DLE) utilises Font Awesome so, building upon that interface, eDT has adopted the use of Font Awesome icons within our Bootstrap HTML5 template.

The '_Elements_Interactive_Content' HTML file of the Bootstrap template folder has some examples of the Font Awesome icons. These can be used when developing content.

Outside of HTML, Font Awesome icons can be downloaded and used as vector images via the Font Awesome website.

Accessibility and general considerations

- Create **alt text** for each icon.
- Use WebAIM to **check contrast**. Create sets of icons in contrasting colours that can be used with different colour backgrounds.

General considerations

- Check your work
- Ensure consistency across all assets

The Bootstrap template has icons for reading, video, and audio activities, as well as documents. It also includes HTML navigation icons. For C-SIL icons, please use the C-SIL template.

Subject: alternative text

Use of alternative text

Alternative text is used in eLearning development to provide information about graphical elements on screen which are relevant to the learning process. The main reasons to use alt text are:

- **accessibility**; and
- to **convey the content of an image** that fails to load.

Please note that only those images which convey important information will require alt text: all others should be marked as decorative.

MOD Brand Guidelines

The MOD Brand Guidelines refer to the Harvard University guidance on how to write helpful alt text to describe images.

Best practice when writing alternative text

- Be accurate. Alt text should convey the exact content and function of the image.
- Be succinct. Avoid filler words.
- Don't be redundant. If there is text near the image already providing that information, don't repeat it.
- Do not use 'graphic' or 'link' to describe the image. This is not necessary because screen readers already announce the type of asset. If the fact that the image is a photograph or any other type of illustration is relevant to the context, then it can be added to the text as an exception.

For more information, visit WebAIM: Alternative Text. The Images Tutorial in the w3 website also details how to provide alt text based on the purpose of the image.

Data visualisation

Charts, graphs, diagrams or maps should include a short description in the alt text field. An additional, longer description that conveys all the numerical or more detailed information is provided separately, via a link next or under the data visualisation asset.

Check how to describe complex images in the w3.org website for some examples.

Subject: **Video**

Use of video

Video is used frequently in eLearning development for a variety of reasons.

- **Engagement**. Videos break up written content and provide an extra dimension to course content.
- **Dual coding**. Presenting your message both visually (images, written text, graphs, etc) and verbally (talking, narration, and demonstration) will allow the student to create mental images of the information, thereby increasing knowledge retention and retrieval.
- **Real-life context**. Videos are a very good method of presenting real-life context within a course/module, especially if the context comes from the individual involved.
- **Video facilitates storytelling**. Storytelling is a powerful tool in eLearning and can be both engaging and memorable.

MOD Brand Guidelines

Pages 100 to 107 of the MOD Brand Guidelines documents the guidance on the use and creation of video for MOD use. MOD branding can be located on MODNet via the DDC Brand page.

MOD video templates are available via the Defence Brand Portal (requires registration).

Specifications

Fully developed videos should contain the elements listed here and be checked for accessibility.

- **MOD branding**. Please follow p101 of the MOD Brand Guidelines. The branding includes AfterEffects templates with specific title screens, header, divider, transitions, and end screens. This template also informs what screen layout to use, as well as typography.
- **End logo.** Replace it with ‘MOD_DefAc logo screen anime’ in the Defence Academy folder.
- **Captions**. A .vtt file will need to be included so that captions can be added. Captions can be auto-generated via Microsoft Stream or through Adobe Premiere Pro, but they must be checked for accuracy against the audio or script.
- **Transcript**. An optional transcript document should be available for all developed videos. NOTE: a template may be provided TBC.

- **W3C checklist**. The W3C checklist for audio and video media should be used to plan and deliver video content and ensure that WCAG 2.2 guidelines are met.

Subject: **Audio**

Use of audio

The primary reasons for using audio within eLearning development are to:

- present content in an engaging manner;
- present complex content in a more descriptive way;
- create a more personal experience for the user;
- allow for powerful storytelling activities to be created; and
- allow for a more creative approach to development.

Audio Fundamentals

Good audio quality is very important.

All audio files should comply with the following standards:

1. Ensure that any **background sounds or music** are at least 20 decibels lower than the foreground speech content, with the exception of occasional sounds that last for only one or two seconds. Check the W3 website for examples and technique advice.
2. When recording **narration:**
    a. **Speak clearly.** This is important for people wanting to understand the content, and for captioners.
    b. **Speak as slowly as appropriate.** This will enable listeners to understand better and improve the timing for captions and sign language.
3. Always provide a **transcript** for accessibility purposes. There is a set template for this TBC
4. Make **audio controls** available when using an audio player. This allows learners to control the audio volume and mute or unmute audio.
5. Record as a .**WAV file for better quality**.
6. Export as an .**MP3 file to reduce file size** for use in HTML, DLE and other platforms.

eDT recommended edits in Adobe Audition

When editing an audio file in Adobe Audition, follow these steps in order.

1. Favourites > **Normalize to -0.1 dB**.
2. Effects > Amplitude and Compression > Dynamics > **Compressor > Threshold -12, Ratio 3**.
3. **Noise reduction:** Effects > Noise Reduction/Restoration > Noise Reduction (process) > follow the instructions for capturing a noise print and apply across the audio file. **TOP TIP:** Record 5 seconds of silence at the start of your recording and use this for your noise print.
4. **Match Loudness:** Drag the file into the ‘Match Loudness settings’ window > Match to: ITU-R BS.1770-3

Loudness > Target Loudness -18 LUFS > Run.

Subject: HTML5 and Bootstrap

Bootstrap is a responsive set of CSS sheets that [link with HTML]. Bootstrap allows more flexibility of design than Rise, which is an alternative authoring tool for eLearning.

Use of HTML5 and Bootstrap

The primary reason for using HTML5 within eLearning development is to:

- provide responsive learning resources;
- facilitate cross-browser compatibility; and
- allow for mixed media to be embedded seamlessly.

The primary reason for using Bootstrap within eLearning development is to provide:

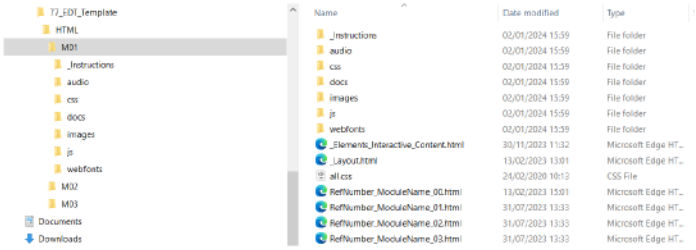
- a user-interface that is modern and engaging;
- useful activities that are common to eLearning techniques;
- flexibility of design that rapid authoring tools don't provide.
- a pre-styled template that helps maintain consistency and integrity; and
- pre-defined elements that increase delivery speed.

eDT specific specifications:

Project start

1. Create a folder titled 'HTML' in the root of your project folder
2. Create separate folders for each module e.g. 'M01', 'M02', 'M03' etc.
3. Copy the content of the Bootstrap template folder inside the module folder

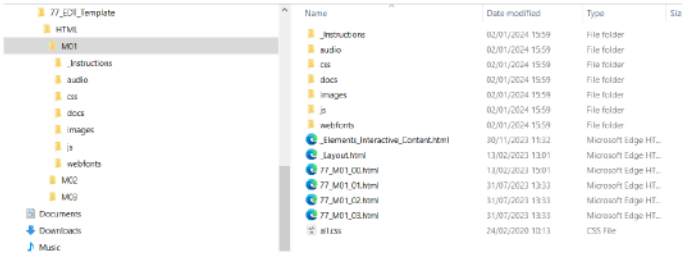
Your structure should look like this:



Renaming the HTML files for your project:

- Change 'RefNumber' and 'ModuleName' to match your project data e.g:
  - **RefNumber_ModuleName**_00.html becomes **77_M01**_00.html
  - **RefNumber_ModuleName**_01.html becomes **77_M01**_01.html

Your folder should now look like this:

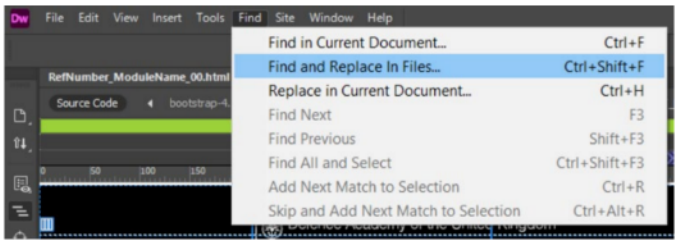


Changing the navigation links inside each HTML module:

Important!

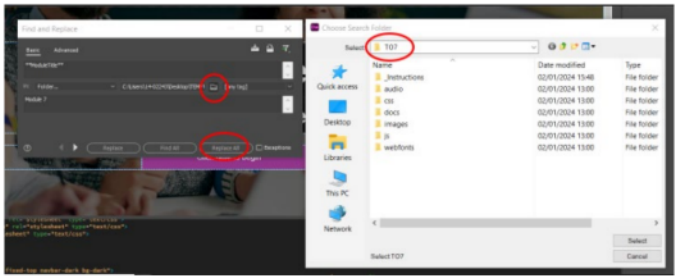
- all actions below need to be done only once (not on each file but globally in the folder)
- ensure you have selected the correct folder otherwise it will overwrite everything
- **this change is irreversible on unopened documents.**

To find and replace In Adobe Dreamweaver, click on **Find > Find and replace in Files** or use the Ctrl+Shift+F shortcut (screen below)



Navigate to the Module folder by selecting the folder icon.

Select **'Replace all'**



Design the module as needed and, once it's finished, delete all unused pages, and check the last navigation page to ensure it has the correct links.

Bootstrap Template in detail:

The Bootstrap template folder contains the following useful pages:

_Elements_Interactive_Content.html (link):

- a library of all pre-style elements that can be used across courses;
- can be used to view and copy any element into your html page;
- Test any new code you have created, by adding your HTML inside this page and CSS code on the '**ELT_MAIN.css**'

Note: When creating a new style and amending the .css:

- do not make changes to main template, use your local copy instead.
- test your new style by adding it to your local version of **ELT_MAIN.css**'. This way you are ensuring the new style does not interfere/overlap/corrupt other styles.

_Layout.html (link):

- provides options for 2 columns (preference), 1 column, and 3 columns page layout.

Developing editable content for use in your project

Any editable content developed in Illustrator, Photoshop, AfterEffects, VideoScribe, PremierePro, Audition etc. must be saved in a separate folder named '**_edit**'

The output (non-editable) content such as .jpg, .mp4, .mp3, .png, .pdf etc must be saved/copied to the 'images' folder so that it can be linked to within your HTML files.

- Create a folder named **_edit**, to save all editable files.

- Use the standard folder structure inside.

Example - you might have to create an animation for Module 1, page 3

- Create a folder 'Animation_M01_P03'
- Inside the folder save your animation files, as well as the output (.mp4)
- Create a sub folder for any custom elements
- Copy the output (e.g. .mp3) to images\Topic_Cards
- **Do not include the '_edit folder' in the .zip file uploaded on DLE** (to save storage space)

MOD Brand Guidelines

Referring to the MOD Brand Guideline document is recommended when creating HTML. This will help you to present your HTML pages in a style that is guided by the examples and information provided in the Guidelines.

MOD branding can be located on MODNet via: https://modgovuk.sharepoint.com/sites/DDC-Brand

Uploading your Bootstrap module to the DLE

To upload the project into a DLE course

1. select all files and folders in your HTML module folder (except for the '**_edit**' folder); then
2. right click > Send to > Compressed (zipped) folder;
3. Open the DLE course you wish to upload the .zip folder to, ensure **Edit mode** is enabled;
4. Select 'Add an activity or resource', select 'File';
5. For the 'Adding a new file' details, firstly add a name for your activity, then
6. In the 'Select files' section choose 'Add' and locate the .zip file you wish to upload; then
7. When the .zip folder is uploaded, select the folder and choose 'unzip' from the options. This then expands the folder view; then
8. Select the file that you want the activity to open at (example '77_M01_welcome.html')

Subject: **H5P**

H5P is interactive HTML5 content, available through the DLE.

H5P activities should be developed and organised within the **'Content Bank' of the DLE course you are developing for**. The Content Bank is a repository for H5P activities connected to an individual course or category, which can be located under the 'More' dropdown menu of your course/category.

Use of H5P activities

The primary reasons for using H5P within eLearning development are to:

- create interactive activities;
- present content in an engaging manner;
- present content in an interface that is supported on the DLE that allows for collaboration across Defence; and
- allow for a more creative approach to development.

H5P Fundamentals

Drag and Drop activities should NOT be used.

7. Drag and drop activities pose significant **issues with accessibility.** Activities to avoid include ‘Drag and Drop’, ‘Drag the Words’, ‘Image Pairing’, ‘Image Sequencing’, ‘Memory Game’, and ‘Sort the Paragraphs’.
8. The approved H5P activity can then be added to the DLE course via the **blue H5P activity**. This allows for additional activity settings to be applied. **NOTE:** The black H5P activity is not used.
9. H5P activities should be **clearly labelled** as DA-<job ref>-<title>, e.g. DA-12-M03 P2. This is important so that other eDT developers can easily locate the correct activity.
10. If a **blue ‘H5P’ activity** is used only as an embedded activity (within HTML/Bootstrap) then the ‘Common module settings’ for the activity within the DLE course should be set to **Make available but don’t show on course page**. This is to allow the activity to be available to students but not openly visible on the course page.
11. Use the ‘Headings’ setting appropriately in H5P activities so that screen readers have an anchor to return to.

H5P activity: Interactive Book

Interactive books allow users to put together large amounts of interactive content like videos, questions, course presentations and more on multiple pages.

This asset can be used to present entire modules, split up information to reduce page size, deliver additional content that is separate from the essential content, and present step processes.

eDT specific specifications

5. **IMPORTANT:** there is an **Interactive Book template** located on the DLE within the Content Bank for the ‘C-SIL Library’.
6. Ensure **book cover** is enabled.
    a. **Cover Description**. Type the following text:
        - ‘Click Read to begin.’ (Style: Normal, bold)
        - ‘Use the TOC on the left-hand side to navigate your way through the content.’ (Style: Normal)
    b. **Cover Image**. This is an.AI templated cover image located in the eDT SharePoint folder (eDT\Development resources\H5P templates\Interactive Book).
7. **Text sizes**:
    a. Heading: 150%
    b. Sub-heading: 125%
    c. Body copy: 112.5%
8. **Layout and information**:
    a. Use 'Horizontal lines' to break sections up.

b. Use bullet points where applicable.
c. Add instructions for activities that are added.
d. 'Accordion' is a good way of presenting large bulks of information.
e. Look to use a mixture of H5P activities to make the content more engaging.
f. Accredit images where necessary.
g. Add 'alternative text' to images.
h. Try to use the same size image across pages for a consistent approach.

H5P activity: Course Presentation

Course Presentation is a HTML5-based presentation content type which allows users to add multiple choice questions, fill in the blanks, text, and other types of interactions to their presentations using only a web browser.

This asset can be used to present entire modules, split up information to reduce page size, deliver additional content that is separate from the essential content, and present step processes. While similar in use to the Interactive Book, the range of activities is limited in Course Presentation.

eDT specific specifications

1. **IMPORTANT:** there is a **Course Presentation template** located on the DLE within the Content Bank for the 'C-SIL Library'. This template mirrors the MOD styling for PPT presentations.
2. **Text sizes**:
   i. Heading: Heading 2, 125%
   ii. Body copy: Normal, 100%
3. **Layout and information:**

a. Use bullet points where applicable.
b. Add instructions for activities that are added.
c. Look to use a mixture of H5P activities to make the content more engaging.
d. Accredit images where necessary.
e. Add 'alternative text' to images.
f. Try to use the same size image across pages for a consistent approach.

H5P activity: Image Hotspots

Image Hotspots are HTML5-based activities which allow users to add interactive areas, or hotspots, to images. Hotspots may reveal text, images and videos when clicked.

This asset can be used to signpost specific items on an image, provide additional information on elements within an image, present content virtually, and present step processes.

Layout and information:

a) If your activity follows a sequence or steps, **ensure the hotspots are arranged from top to bottom** as this is the focus order hotspots receive.
b) For consistency, use the **+ symbol** to signpost a hotspot, with **#94368d** as the background colour.

H5P examples

For information on what H5P activities are available and how then can be used, visit the H5P website. It is recommended that you regularly check this site and the available list of activities in case an update

has been issued and a new activity is available.

MOD Brand Guidelines

Referring to the MOD Brand Guidelines document is recommended when creating H5P activities. This will help you to present your H5P in a style that is guided by the examples and information provided in the Guidelines.

MOD branding can be located on MODNet via the DCC Brand page.

Subject: Alfresco

Use of Alfresco

The Alfresco repository, integrated with the DLE, allows users to share online learning content.

- Alfresco can be used by course representatives to collaborate on courses and provides a central point for course resources.
- The repository links a single resource to multiple courses, so that resource only needs to be created once. Resources are automatically updated within the DLE as they are updated within Alfresco. The data storage used by one resource in Alfresco does not increase as it is replicated into courses, which reduces course sizes. This is particularly effective when applied to large media files.

When creating an Alfresco account please refer to the DefAc – Creating an Alfresco account document.

eDT use of Alfresco

The **Alfresco folder for eDT** is used for various purposes:

- linking resources within C-SILs;
- storing course backups or useful ‘editable’ files;
- transferring files between networks; and
- linking files directly into sub-category pages.

If the resources are to be used in a client’s course (not a C-SIL) then the client’s folder within Alfresco should be used, or a folder can be created for this purpose if a folder does not already exist. This allows for the client to manage their course.

Additional Guidance

Further guidance on the use of Alfresco can be found via the **DLE Additional Functionality** course.

Ministry of Defence

Technology Enhanced Learning

Content and Learning Design – Ways of Working

Introduction

The Content and Learning Design (CLD) Team sits within the Defence Academy's Technology Enhanced Learning (TEL) Team. CLD focuses on the editorial development of written content for online learning. Welcome to this compilation of our 'ways of working' documents!

These documents provide guidance for CLD's Editors and Instructional Designers as well as the customers we work with. Each piece is a tried-and-tested response to issues we encountered when we tried operating *without* standardised ways of working. They orbit around a central 10-step workflow which is designed to turn ideas into online learning with maximum efficiency and with assurance that we're giving our learners what they truly need.

Although it's borne from our specific context, we hope that it will have some relevance to yours.

SO1 Content and Learning Design

April 2024

If you have any questions or comments about 'Content and Learning Design – Ways of Working', please contact HQ J7 Head Michael.Wadley@da.mod.uk.

Contents

Guide to abbreviations

CLD – Content and Learning Design Team (part of TEL)

DLE – Defence Learning Environment, our online platform

eDT – eLearning Development Team (part of TEL)

eSE – eLearning Support and Engagement Team (part of TEL)

Grade 7 – the Civil Service rank sitting above SO1 and SO2

SME – subject matter expert

SO1 – the Civil Service rank sitting below Grade 7 and above SO2; SO1 CLD is the CLD team lead

SO2 – the Civil Service rank sitting below SO1

TEL – Technology Enhanced Learning Team

Document in context

'Working with TEL' outlines the Technology Enhanced Learning (TEL) Team's 10-step process for taking learning content from inception to publication on the Defence Learning Environment (DLE).

- It's used as an early engagement tool to inform customers and subject matter experts (SMEs) about the upcoming development process.
- It's also used as a handrail for new editors and instructional designers to help acclimatise them to TEL ways of working.

All our project tracking is based on these 10 steps.

- Using Tasks by Planner, our workflow in Teams contains 10 buckets corresponding to each of these steps. With one ticket per module of online learning content, we project manage by charting the progression of tickets through buckets.
- Data from this Tasks By Planner workflow can then be exported to Excel and converted into a visual project management dashboard using Power BI.
- We're in the process of compiling data from each step to build a forecasting tool. Among other things, the data will give us information on fastest, slowest, and average turnaround times.

Working with TEL – Creating Content for Online Learning

Background: creating written content for online learning

Technology Enhanced Learning (**TEL**) is managed by [redacted] and consists of three teams.

eLearning Support and Engagement (**eSE**) supports TEL and business operations.
The acting eSE team lead is [redacted].

Content and Learning Design (**CLD**) is responsible for the editorial development of all written content.
The CLD team lead is [redacted].

The eLearning Development Team (**eDT**) is responsible for online content development and design.
The eDT team lead is [redacted].

Based on our experience of developing content together since September 2021, we've developed the **10-step workflow** and **Content standards checklist** to help SMEs develop written content with online learning in mind from the outset.

The TEL 10-step workflow

1. eSE captures expressions of interest from across the Defence Academy.
2. If a new requirement is within scope, SO1 CLD and the customer discuss:
   - the details of the requirement, e.g. in relation to the Defence Systems Approach to Training;
   - the workflow;
   - resourcing, scheduling, and prioritisation;
   - ways the customer can optimise the wait time, e.g. preparing written content with the Content Standards Checklist in mind.

   The SME and/or SO1 CLD complete the **New Requirements Form**.
3. When customers send in first draft content, CLD carry out a red-amber-green analysis against the Content Standards Checklist. This analysis is then used to inform next steps. Either:

   a) the designated SME writes/adapts the content further;

   b) the designated SME and CLD Editor work together to write/adapt the content; or

   c) the content progressed straight to step four.
4. Once the written content scores 'green' against all items on the Content Standards Checklist, the SME shares it with a network of people experienced in the subject matter and refines it accordingly. This is done to ensure sound curation and forms a crucial part of content assurance – the more voices at this stage, the better.
5. The SME seeks Grade 7 approval.
6. SO1 eDT decides how the content will be developed, e.g. H5P / Bootstrap / Articulate Rise. SO1 CLD assigns the work to an SO2 CLD Editor who puts the content into CLD's storyboard template. The SO2 CLD Editor then shares the storyboarded content with the SME and eDT for pre-kick-off meeting mark-ups.

   The assigned CLD Editor sets up a project kick-off meeting for:
   - the SME;
   - SO1 CLD (optional);
   - SO2 CLD Editor;
   - SO1 eDT; and
   - SO2 eDT Developer (optional).

   During the kick-off meeting, we work through storyboarded content page by page, deciding on the curation, structure, chunking, methods and media, and learner interactions. CLD capture decisions made.
7. CLD implement decisions made in the project kick-off meeting. CLD is responsible for all storyboarding, editing according to in-house ways of working, alignment with JSP 101, and proofreading.
8. SO1 CLD carries out a review before the SME and Grade 7 are asked to sign off all storyboarded content. The content is then 'locked down' and passes on to eDT. No further text changes are possible beyond this point unless somebody catches a previously missed spelling, punctuation, grammar or factual error.

9. eDT develop online content from CLD storyboards. CLD then QA developed content before it passes on to the SME and Grade 7.
10. SME and Grade 7 are asked to review and sign off developed content before it passes back to eDT for publication on the DLE.

Sign-off waypoints

There are three points at which the SME and Grade 7 are asked to approve or sign-off content.

1. Workflow step 5: the Grade 7 gives approval to content written/adapted by SME.

This is to ensure that all content coming into TEL is well-curated and well-written. From this starting point, the TEL team can focus on realising the **online learning** potential of content.

2. Workflow step 8: the SME and Grade 7 sign off all storyboard content developed by CLD.

This is to ensure that the SME and Grade 7 are happy with CLD's execution of project kick-off decisions and editing. It's significantly quicker and easier to make any text changes at this point than post-development. Once signed off at this stage, the content is 'locked down' and cannot be changed further.

3. Workflow step 10: the SME and Grade 7 review and sign off developed content.

This is an opportunity for the SME and Grade 7 to provide feedback on the design features and functionality of online development (not text changes) before the content goes live to learners.

Support

For support with content writing at workflow step 3 – including fulfilling the requirements of the **Content Standards Checklist** – a member of CLD can be assigned to work with the designated SME.

The Grade 7 is able to delegate sign-off authority at workflow steps 5, 8 and 10 to somebody of their choosing. To do this, the Grade 7 should notify [redacted] and [redacted] by email.

Please contact [redacted] with any queries about the workflow or written content.

Please contact [redacted] with any queries about the workflow or online content development.

Document in context

Throughout Step 1 (expressions of interest) and Step 2 (scoping a new requirement), the customer and SO1 Content and Learning Design work together to complete the New Requirement Form.

The information in the New Requirement Form provides essential context, assurance, and direction for the content we develop.

Working with TEL: Workflow Request Form

J7's Technology Enhanced Learning (TEL) team is supporting with the delivery of digitalised knowledge-based learning content across the Defence Academy, under the remit of Project CODEX.

To help us understand your requirement, please complete the form below and send to [redacted] and [redacted].

Many thanks!

Workflow Request Form	
TEL prompt	**Your responses**
Your name	
Your preferred MOD email address	
Alternative contact details	
Alternative point of contact email address	
Name of your College / Group / business area	
Name of your project/requirement	
Training Requirements Authority, contact name and email address	
Requirement summary	
Audience – Who is the requirement for? What is the estimated number of learners?	
Where does the requirement currently sit within the DSAT process? Please let us know if you have any of the following: - Role Performance Statement - Training Objectives - Enabling Objectives - Key Learning Points - Assessment Strategy/Specification - Learning Scalar - Learning Specification	

If known, what type of output are you interested in? Examples include: - new online resources (DLE course, C-SIL or webpage); - update for existing online resources (may include content, functionality, or design changes to courses, C-SILs or webpages); - new digital resources for front-of-class; - new assets only (video, animation, audio, infographics, images); - online diagnostic tools; - data/analytics support; and - other TEL resource/support.	
Main take-aways – What do you want learners who complete this training to be able to do as a result?	
What Defence Academy courses does thew new requirement support?	
Who owns any existing content? Examples include: • Defence Academy; • [redacted]; and • [redacted].	
What key points have arisen from learner feedback on any existing content?	
Have you read and followed the 'TEL workflow' guidance?	
Is there any other information you can provide that is relevant to this request?	
Timescales – When would you like the learning to go live?	

Working with TEL: Workflow Request Form
SAMPLE

J7's Technology Enhanced Learning (TEL) team is supporting with the delivery of digitalised knowledge-based learning content across the Defence Academy, under the remit of Project CODEX.

To help us understand your requirement, please complete the form below and send to [redacted].

Many thanks!

Workflow Request Form	
TEL prompt	**Your responses**
Your name	[redacted]
Your preferred MOD email address	[redacted]
Alternative contact details	
Alternative point of contact email address	[redacted]
Name of your College / Group / business area	[redacted]
Name of your project/requirement	Cyber 101 refresh
Training Requirements Authority, contact name and email address	[redacted]
Requirement summary	Refresh on Cyber 101 to provide a modern look and feel to the learning content within Cyber 101. Where appropriate suggest up to date examples of cyber attacks, which must be agreed with [redacted] before use.
Audience – Who is the requirement for? What is the estimated number of learners?	24/25 – [redacted] Entry prerequisite to [redacted] modules.
Where does the requirement currently sit within the DSAT process? Please let us know if you have any of the following: - Role Performance Statement - Training Objectives - Enabling Objectives - Key Learning Points - Assessment Strategy/Specification - Learning Scalar - Learning Specification	RPS TOs, EOs & KLPs – (TPS) AStrat

<table>
<tr>
<td>If known, what type of output are you interested in?
Examples include:
- new online resources (DLE course, C-SIL or webpage);
- update for existing online resources (may include content, functionality or design changes to courses, C-SILs or webpages);
- new digital resources for front-of-class;
- new assets only (video, animation, audio, infographics, images);
- online diagnostic tools;
- data/analytics support; and
- other TEL resource/support.</td>
<td>1. Course landing page
<table>
<tr><th>Component</th><th>TEL involvement</th></tr>
<tr><td>Landing page</td><td>eDT look and feel refresh</td></tr>
<tr><td>Introductory text
Assessment</td><td>CLD editorial check and suggestions</td></tr>
<tr><td>Certificate
What next?
Additional content</td><td>eDT look and feel refresh or NA</td></tr>
</table>
2. C-SILs (i.e. modular content) based on existing online content.
<table>
<tr><th>Component</th><th>TEL involvement</th></tr>
<tr><td>Start here
Internet basics
Threat actors
Threat vectors
Protecting yourself
Coping with an attack</td><td>eDT look and feel refresh
CLD editorial review and storyboarding, including new methods and media suggestions</td></tr>
</table>
3. Within C-SILs
<table>
<tr><th>Component</th><th>TEL involvement</th></tr>
<tr><td>Any new assets within the C-SILs, e.g. videos, audio and interactives</td><td>eDT and CLD to make suggestions to discuss at project kick-off.</td></tr>
</table>
</td>
</tr>
<tr>
<td>Main take-aways – What do you want learners who complete this training to be able to do as a result?</td>
<td>Have digested the content and have up to date knowledge. This will be demonstrated by the ‘pass’ on the DLE assessment at the end of the course.
This course is a prerequisite to [redacted].</td>
</tr>
<tr>
<td>What Defence Academy courses does Cyber 101 support?</td>
<td>Defence Cyber Academy’s – [redacted].</td>
</tr>
<tr>
<td>Who owns the existing content?
Examples include:
• Defence Academy – DCMCI;
• King’s; and</td>
<td>DCMCI, Defence Cyber Academy</td>
</tr>
</table>

• Cranfield.	
What key points have arisen from learner feedback on the existing online content?	Overall feedback is positive. However, students comment that there is a lot of information to take on, which we could consider when refreshing the design.
Have you read and followed the 'TEL workflow' guidance?	Yes
Is there any other information you can provide that is relevant to this request?	
Timescales – When would you like the learning to go live?	Sept 24

Document in context

Before sharing content with CLD, SMEs are asked to make sure it aligns with our 'Content Standards Checklist'.

Content Standards Checklist

If the highlighted requirements are not met, content stays at Step 3 of the TEL 10-step workflow.

Assurance

- All content is the original work of a Defence Academy subject matter expert (SME) or a Defence Academy SME has shareable written permission to re-use somebody else's content (whether draft or published).
- The content is written by an expert and checked by at least one other person experienced in the field before being shared with TEL.

Format

- Written content is prepared in a Word document or PowerPoint presentation.

Curation

- Training Objectives (TOs) / Learning Objectives (LOs) are stated upfront.
- Stated Key Learning Points (KLPs) are useful but not essential.
- TOs / LOs and any KLPs contain a command verb that learners will be able to fulfil through the supplied content.
- Written content is aligned to TOs / LOs and any KLPs.
- For the target subject matter, SMEs should ensure that all key information is included, and that what is included is factually accurate and up to date.

Organisation

- Content is well structured and includes headings and subheadings.
- Content has a clear narrative flow, taking the learner through key learning points (whether these are explicitly stated or not) in a way that is methodical and easy to follow.

Substance

- Content is fully written in paragraphs and sentences (which can include bullet points).
- All new concepts, processes and subject-specific vocabulary (i.e. jargon) have been defined.
- All but the most well-known abbreviations have been written out in their full form in the first instance.
  Well-known abbreviations include MOD, UN, NATO, UK, USA, etc.
- Where other content is included (e.g. JSPs, websites, research publications), quotation marks are used, and citations are provided.
- Where other content is referred to, citations are provided.

Assets

- Any suggested photos and artwork are included in situ, with source information provided where you'd like us to use a specific asset.
- Any suggested graphs, charts, diagrams and infographics are included in situ, with source information provided where you'd like us to use a specific asset.
- Suitability of any existing audio, screen recording, or video files have been checked with SO1 eDT.

Further reading

- If relevant, further reading recommendations have been made (with links, if available).

Document in context

Once a new requirement is scoped and the SME has created a first draft of content, one of CLD's Editors or Instructional Designers will engage.

The 'Editorial Checklist' offers a handrail to make sure all tasks are covered.

Editorial Checklist

Step 3

CLD check the content against the 'Content standards checklist' and make recommendations before content progresses to Step 4 (sharing with a wider network).

Create and complete a copy of the Red-Amber-Green analysis template. Save it in project folder 03.	
Set up a meeting with SO1 CLD to discuss next steps.	

Content needs more time at Step 3 if:

a) there are blockers including plagiarism, no discernible content structure, missing/unclear TOs, factual inaccuracies or out-of-date content; or
b) the content would benefit from significant restructuring; or
c) the content would benefit from significant amounts of new content, e.g. narrative framing devices, case studies, real-world scenarios, illustrative examples; or
d) the content would benefit from significant pruning.

Content can progress to Step 4 if:

e) there are no blockers; or
f) the need for restructuring, new content or pruning is minimal, i.e. not enough to distract from the main Step 4, 5 and 6 tasks.

The SME/author writes the content or works with an Editor / Instructional Designer to write the content.

If blockers at a): write a task list for SME/author to rectify issues identified in the RAG analysis.	
If b) is the case: create and support the SME/author in completing a new Content Map.	
If c) is the case: write prompts for the SME/author, listing what you want the new text to do and why.	
If d) is the case: track change all your suggested deletions and ask for SME/author approval.	
Once the content is stable, create a Content Map.	
Save draft copies from key waypoints and the Content Map in project folder 03.	

Let SO1 CLD know once you're happy the content would now pass the of the Red-Amber-Green analysis.	

Step 4

The SME or CLD editor shares the written content with a network of people experienced in the subject matter and refines it accordingly. This is done to ensure sound curation and forms a crucial part of content assurance – the more voices at this stage, the better.

Using the 04_Note for reviewers.docx, invite content feedback from 2-3 suitable people.	
Implement all valid reviewer feedback until you're happy with the content.	
Prompt the SME to seek their Grade 7 approval for the content, cc'ing in SO1 CLD.	

Step 6

a) Prepare for the project kick-off meeting.

Extended guidance: 06_CLD only_Pre-kick-off meeting guidance.docx

Put the content into a copy of 00c_CLD_Main storyboard_TEMPLATE.docx, chunking it appropriately.	
Set up a kick-off meeting, inviting people listed at Step 3 of 06_CLD only_Pre-kick-off meeting guidance.docx.	
Share the pre-kick-off storyboard(s) and 06b_Kick-off note for SMEs.docx with all attendees, giving sufficient time for attendees to annotate ahead of the kick-off meeting.	
In your own copy of the pre-kick-off storyboard, add your recommendations for:	
• optimal methods and media, i.e. videos, animations, audio, infographics and non-decorative images;	
• optimal interactivities, e.g. accordions, flip cards, hotspots; and	
• optimal learner activities, e.g. multiple-choice questions and sorting activities.	
Save your pre-kick-off storyboard in project folder 06a.	

b) Capture decisions made in the project kick-off meeting (KO).

During the KO, check the proposed distribution of prose, media and interactives across the entire C-SIL.	
During the KO, log all decisions made.	
Capture SME/author track changes preferences as per 06_CLD only_Pre-kick-off meeting guidance.docx.	

Save the post-kick-off storyboard in project folder 06b.	

Step 7

CLD implement decisions made in the project kick-off meeting. CLD is responsible for all storyboarding, editing according to in-house ways of working, alignment with JSP 101, and proofreading.

The key ways of working documents are:

- 07b_CLD only_Marking up changes for SMEs and Grade 7s.docx; and
- 07e_All storyboard templates_Working with developers.docx.

The key template documents are:

- 00d_CLD_Main storyboard template_GUIDE.docx and 00e_CLD_Main storyboard template_SAMPLE.docx;
- 07f_CLD_Video and animation storyboard_TEMPLATE.docx and 07g_CLD_Video and animation storyboard_sample 1.docx;
- 07i_CLD_Infographic storyboard_Template.docx; and
- 07j_CLD_Audioscript_Template.docx.

Maintain main storyboard guidance and styling throughout.	
Follow developer instructions according to guidance throughout.	
Check banner information is accurate at the top of each storyboard table.	
Implement decisions made from Step 6, such as briefing for new interactive elements.	
Create any new video, animation, audio, or infographic storyboards arising from Step 6.	
Include signposts to new asset storyboards (see above) in the main storyboard.	
Wherever needed, improve comprehensibility – the intended meaning should always be clear.	
Wherever possible, improve readability – aim for Plain English.	
Consider the use of glossaries for subject-specific vocabulary.	
At your discretion, make stylistic changes such as removing cliches or adjusting the tone.	
At your discretion, make values changes such as tackling stereotypes or bias.	
Question the validity and value of third-party content that learners are redirected to.	
Remain alert for factual inaccuracies or misleading content.	
Notify SO1 CLD if you think any of the content has the potential to cause reputational damage to the MOD.	
Raise any copyright concerns with SO1 CLD – err on the side of caution.	

Fix any vocabulary, spelling, punctuation, grammar and syntax errors.	
Check alignment with 07k_CLD only_In-house STYLE GUIDE (V1).docx.	
Ask SO1 CLD if there's anybody else available to proofread content.	
Once you think content is ready for publication, add to project folder 08 and share with SO1 CLD.	

You'll be informed when your project is signed off and sent to eDT for development 😊

Step 9

eDT develop online content from CLD storyboards. CLD QA developed content before it passes on to the SME and Grade 7 for final checks and approval to go live.

Cross-check all developed content against the approved CLD storyboards handed over to eDT.	
Where there's an error in the online content, highlight the corresponding point in the storyboard.	
Use the notes column to describe the error and request a fix.	
Check that page chunking is accurate.	
Look out for any typos or case errors.	
Check functionality of buttons.	
Make sure links redirect to where they should.	
Play videos, animations, and audio to make sure it works.	
Interact with infographics and activities.	
Replicate different scenarios with knowledge check questions, making sure you get the correct feedback.	
Check images to make sure stereotypes and bias are avoided.	

Document in context

CLD Editors and Instructional Designers use a 'RAG Analysis Template' based on the 'Content Standards Checklist'. If there are any blockers, we spend more time at Step 3 (writing). If there are no blockers, we progress to Step 4 (sharing content with a network of reviewers).

Below is a sample of some RAG entries.

Requirement	Pass or fail? Green: Pass Amber: On the way Red: Blocker	Action needed
Assurance		
All content is the original work of a Defence Academy subject matter expert (SME) or a Defence Academy SME has shareable written permission to re-use somebody else's content (whether draft or published).	GREEN All written content is either: • based on a reliable source under Crown Copyright; • newly written by the SME; and • checked to confirm no inadvertent plagiarism.	
Curation		
Written content is aligned to TOs / LOs and any KLPs.	RED Some of the TOs and KLPs are not yet fulfilled.	BLOCKER Content needs more time at Step 3a or 3b. - Editor to signpost where SME needs to plug the gaps. - Editor to suggest 'plus' content for keen learners. - Editor and SME to discuss the addition of case studies.
Assets		
Any suggested graphs, charts, diagrams and infographics are included in situ, with source information provided where you'd like us to use a specific asset.	AMBER New concepts are well supported with infographics but the quality isn't good enough to use (e.g. low res and typos).	This is not a blocker. Content can progress to Steps 4, 5 and 6 with existing infographics as placeholders. Editor to brief eDT for new infographics to be added at Step 8.
Can we proceed to Step 4?	**Not yet**	

Document in context

The ‘Note for Reviewers’ template is used at Step 4 (sharing content with a network of reviewers).

The CLD Editor or the SME shares this information with reviewers.

Reviewers would ideally be people with experience in the field, drawn from the SME’s wider professional network.

Please find attached proposed content for [cluster/C-SIL name] which is currently being developed by [SME name] and the TEL team. The content is currently at the writing stage, where we focus on *what* is included rather than *how* it is presented.

As part of editorial development, we ask reviewers to look at content now in order to provide assurance that it is as accurate, appropriate, and interesting as possible. With this in mind, please could you look through the attached draft and comment on the following points:

- Is the content accurate?
- Are we missing anything important?
- Is everything relevant?
- Does it align to the stated TOs, LOs, KLPs?

We’ll be able to implement any suggested improvements that reach us by [insert deadline].

Document in context

The 'Pre-kick-off meeting guidance' is for Editors and Instructional Designers responsible for setting up, chairing, and capturing decisions made during the project kick-off meeting.

Step 6: Pre-kick-off Meeting Guidance

1. Content can progress to Step 6 if there are no remaining blockers or significant structural and curation issues from Steps 3, 4 or 5.

2. Create a pre-kick-off storyboard using a copy of 00c_CLD_Main storyboard_TEMPLATE.docx, chunking it appropriately.
   Organise the SME's written content into storyboards:
   - using the top banner to indicate tile and page numbers, following 06a_Cluster structure and terminology.pdf;
   - chunking tile content into C-SIL pages;
   - adding page headings and subheadings (if the SME hasn't included them) with track changes on;
   - making minor adjustments to structure and curation of content if needed, making sure to follow guidelines contained in 7_All storyboard templates_Marking up changes for SMEs and Grade 7s.pdf.

3. Set up a project kick-off meeting, face-to-face where possible. The calendar invite should include:
   - yourself;
   - the SME;
   - SO1 CLD, as an optional attendee;
   - SO1 eDT;
   - SO2 eDT; and
   - for LEF projects, [redacted] as an optional attendee (to ensure alignment with the framework).

During the kick-off meeting, the SME and representatives from CLD and eDT work through the SME's written content page by page, confirming chunking and making decisions on methods and media as well as learner interactions. The meeting will also allow you to discuss ways of working, schedules, availability, and any foreseeable delays, such as Annual Leave.

4. At least one week before the kick-off meeting, share the pre-kick-off storyboard for all attendees to annotate their own copy before the meeting.

5. Before the kick-off meeting, working in a copy of the pre-kick-off storyboards exclusively for you, use the Notes column to add your recommendations for:
   - optimal methods and media, i.e. videos, animations, audio, infographics and non-decorative images;
   - optimal interactivities, e.g. accordions, flip cards, hotspots; and
   - optimal learner activities, e.g. multiple-choice questions and sorting activities.

   For an example of this, see Introduction to Strategy_pre-KO storyboard.

   No other edits should be made at this time.

Major content changes should have been addressed in Steps 3-5.

Editorial changes are owned by CLD and don't need eDT input, so take place at Step 7.

6. Prepare a copy of the 'SME preferences' checklist to fill in during the project kick-off meeting.

Working with CLD: SME preferences

Some changes must be marked-up with Track Changes on or an accompanying note, while others must not – full mark-up guidance is contained in 7a_All storyboard templates_Marking up changes for SMEs and Grade 7s.pdf.

For three types of changes, the SME can choose whether they would like you to switch Track Changes on when storyboarding or not. Please check their preferences during the project kick-off meeting.

1. Fixing objective linguistic errors including:
   - spelling;
   - vocabulary;
   - punctuation;
   - grammar; and
   - syntax.
2. Aligning with in-house style guide (including JSP 101)
3. Improving readability, such as:
   - writing abbreviations out in full form in their first instance;
   - replacing unnecessarily difficult vocabulary (non-subject-specific vocabulary) with Plain English; and
   - improving Flesch/Flesch-Kincaid score (favouring shorter words, shorter sentences, and active sentences).

Document in context

The ‘Kick-off Note for SMEs’ is a template that CLD Editors and Instructional Designers can use to help SMEs prepare for an upcoming kick-off meeting.

Please find attached storyboarded content for [cluster/C-SIL name]. You’ll see that I’ve chunked it in preparation for online development – using one table to represent one online page. Please can you read through the storyboards and add annotations using the Notes column on the right-hand-side. At this stage, we’re focusing on:

- **chunking** – are you happy with the distribution of content across online pages?
- **methods and media** – which bits of content do you think would work well as videos, animations, audio, infographics or images?
- **interactives** – how can we use features such as accordions, flip-cards and hotspots to improve learner engagement?
- **activities** – where are ideal places for learners to carry out short tasks, such as answering multiple-choice questions or doing sorting activities?

In the project kick-off meeting, we’ll go through content and share our ideas. I’ll capture all decisions made and implement them at the next stage of editorial development. That later stage will also include comprehensibility and readability checks, proofreading and alignment with JSP 101, which we don’t cover in the project kick-off meeting.

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SO1 note for SO2s

If an SME asks why we separate Steps 6 and 7, the main reasons are:

- Step 6 is the designated point where SME, CLD and eDT intersect – it’s preserved for the decisions we all have a stake in, not tasks that are SME/CLD only; and
- the text isn’t completely stable while we’re still working on chunking, methods and media, interactives, and activities – instructional design changes come before editorial refinement.

Documents in context

The next several pages include our:

- main storyboard template;
- template guide; and
- template sample.

The storyboarding system has been tested and adjusted over the course of many projects to ensure that content development progresses as clearly as swiftly as possible for all users.

There are modified versions of the storyboards **not** shared here which are specifically for:

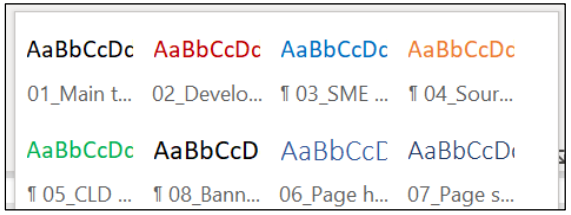
- videos and animations;
- infographics; and
- audio scripts.

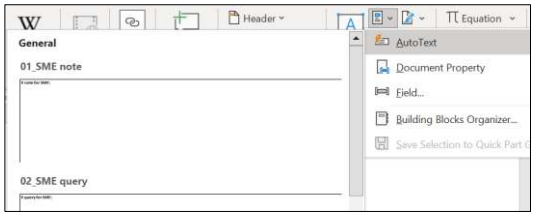
Storyboard Template

This is the master copy of the storyboard template. Do not add to, remove from or amend any part of it. Recommendations for improvements to go via SO1 CLD.

Please **make a copy of this document** and use the template provided for all CLD main storyboards (video/animation/infographic storyboards have a separate template).

The reason the document itself needs to be copied and not just the table template is because of the bespoke Quick Styles and Quick Parts galleries:





[Insert 'course' title]	[Insert module title]	Page number [insert page number]
Text		**Notes**
General module notes		

Storyboard Template: Guidance

- A Martian dropping in at any point of content development should be able to pick up who is saying what to whom and about what – we should not depend on anybody having to:
  - immerse themselves in the text to understand the nature of any issues or discussions;
  - expend energy understanding what our notes mean – we should be leading the way in clear communication;
  - depend on context or memory to understand what is being asked, stated or requested.

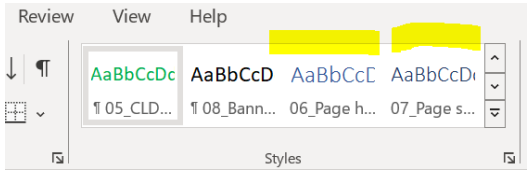
- Our notes/queries to SMEs should be 'shut-downable' in one exchange, i.e. the SME should be able to approve/reject or implement/decide not to implement our suggestions without the need for further discussion in most cases.

- There should be no briefing for audio, infographics, videos or animations within the main storyboard. Instead, we should redirect developers to separate audio/infographic/video/animation storyboard documents.

- The storyboard template relies on internal borders to align text to corresponding notes.

- All members of CLD should use standardised formatting from now on as per the storyboard template, this guide and the sample. These are customer-facing documents that should look professional and be easy to follow. They'll also be eDT's point of reference for making sure that Developers have accurately reproduced on screen what we have storyboarded.

C-SIL name: [C-SIL name]	**Element tile [element tile number]:** [element tile name]	**Page number:**
KLP (or main takeaway): [for SO1 CLD at review stage]		

Text	**Notes**
✓ Every page should have a heading [Styles > Page heading] Page heading ✓ Consider whether you want to state the page's key learning point or main takeaway at the outset. On this page, we will focus on the following key learning points: • abc; • def; and • ghi.	Address SME questions or comments to the SME by name and use blue text. Address questions or comments to Developers and use red text. Address questions or comments to CLD team members by name and use green text. Use orange text to give reference information to original source content. SO1 CLD note to CLD: Use dashed inside horizontal borders when adding notes to this column so that the notes align with the corresponding text in the left column. See the example below.
✓ SME content to be added to this column and styled approprioately. ✓ Subheadings should be used to improve scannabilty and aid page navigation.	SO1 CLD note to CLD: Now the note stays with the corresponding SME content. SO1 CLD note to CLD: Highlighting can be used to make it clearer which parts of a text you're referring to. This is useful when you want an SME or Developers to focus on a particular piece of text.
Using the left-hand column ✓ There should only be two types of text in this left-hand column: • text that is to appear on the developed C-SIL page using styles '01_Main text,' '06_Page heading' or '07_Page subheading' only; or • in situ development information for eDT using style 02_Developer text only, e.g. redirection to a video storyboard.	SO1 CLD note to CLD: This is an example subheading. Headings and subheadings are set up as pre-set styles in 00c_CLD_Main storyboard_TEMPLATE.docx 
Track changes ✓ Follow guidance on marking up track changes for SMEs and Grade 7s.	

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna ~~aqua~~ aliqua.	
Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.	CLD suggestion for Developers: The highlighted text is a quotation. Please style differently from main text.
✗ Don't use track changes for any formatting changes. ✓ Insert instructions in situ to redirect Developers to separate audio scripts, video/animation storyboards or infographic briefs.	
Click on the different parts of the image below to learn more about the greenhouse effect. [Insert '1315_Climate Change_Infographic 1_greenhouse' infographic here.] You can find more information on this topic in the Resources tile. ✓ Include information for the Developers about transitions from one type of content, e.g. main text, to another, e.g. accordions.	SO1 CLD note to CLD: This is an example of developers being redirected to another storyboard (a brief for an infographic in this instance).
Greenhouse gas (GHG) emissions have an impact on the greenhouse effect. Click on the icons below to learn more about human-led GHG emissions. [SME placeholder] [Relevant icon] **Transport** [Reveal text] Transport is one of the biggest sources of emissions of greenhouse gases. As much as 90% of the fuel used for transport is petroleum based, which includes primarily petrol and diesel. [Relevant icon] **Commercial and residential buildings** [Reveal text] GHG emissions from buildings come primarily from burning fossil fuels for heat, the use of GHG emitting products and waste generation. [Relevant icon] **Industry**	From original PowerPoint slide 15 SO1 CLD note for SME: In the previous module, agriculture was listed as one of the main human-led GHG emissions. Do you want to include it here? If so, please add the heading and text directly where I've left a placeholder. If not, please delete the placeholder and this comment. SO1 CLD note to CLD: This row shows an example of the main text switching to an accordion and then back to main text again.

[Reveal text] GHG emissions from industry come from burning fossil fuels for energy, as well as emissions form chemical reactions in some industrial processes to produce goods from raw materials. [End of icon/reveal content] Defence is committed to reducing its GHG emissions by 2050.	

General page notes

- ✓ Include any suggested images (or brief for images) that could go anywhere on the screen, i.e. they're not location-dependent, e.g. Developer suggestion: include photos of different books. Decorative only.
- ✓ Include any other information relevant for the Developers, e.g. Developer suggestion: Please use consistent styling to distinguish all quotations throughout the C-SIL.

Storyboard Template: Sample

Course name: Food in Defence	C-SIL Tile 2: Sandwich fillings	**Page number:** i
Text		**Notes**
## Sandwich fillings in Defence By the end of this module on sandwich fillings, you will have been introduced to: • meat fillings in Defence; • fish fillings in Defence; and • the impact of sandwich fillings on overseas operations. Click next to start.		
General module notes CLD note to Developers: We've chunked SME content for this module into six pages, including one storyboard infographic ('1714_Food in Defence_Tile 2_sandwich fillings infographic') and one animation ('1714_Food in Defence_Tile 2_sardine fishing animation').		

Course name: Food in Defence	**C-SIL tile 2:** Sandwich fillings	**Page number:** 1
Text		**Notes**
## Types of sandwich filling On this page, we list different types of sandwich fillings in the context of UK Defence.		
### Meat Examples of meat fillings served in the cafeteria include: • barbecued chicken; and • honey-roasted ham.		Content from PowerPoint slide 4
Meat fillings are especially important for achieving our strategic goals, as laid out in the latest MOD policy overview.		CLD note for SME: We need to include a link to the latest MOD policy overview. Please can you share a link here. CLD note to Developers: Please use link shared by the SME to hyperlink the highlighted text.
### Fish In Defence, the most popular fish fillings include: • sardines; • tuna; and • salmon.		SO1 CLD note to CLD: The SME prefers 'fish fillings' but the MOD glossary uses 'Fish Fillings'. Added to the proofreading queries spreadsheet.
Click here if you'd like to see suggested reasons for their popularity. [Text pop-up for when learner clicks 'here'] The main reasons suggested for the popularity of sardines is their low cost compared to other fish, their long shelf life when tinned and environmentally friendly fishing methods used to catch them. [End of text pop-up]		CLD note to Developers: The highlighted text will need updating if you don't go with a pop-up approach here.

What percentage of Defence's total sandwich fillings do sardines make up? Enter your guess in the box below. [Insert free text box with percentage symbol on the right-hand side.] [Insert 'Submit' button] [After the learner has clicked 'Submit', please reveal sandwich fillings infographic as briefed in '1714_Food in Defence_sandwich fillings' alongside the answer feedback.] [Answer feedback if learner guesses 25%] That's the exact percentage. Well done. [Answer feedback if learner guesses 20% to 24% or 26% to 30%] Almost. The correct answer is 25%. [Answer feedback if learner guesses any other percentage] Not quite. The correct answer is 25%. On the next page, we'll be looking at the impact sardine fishing has on overseas operations.	

General module notes

CLD note for Developers: SME has requested pictures of meat on this page but wants us to avoid pictures of pork products.

Document in content

This guidance is for CLD Editors and Instructional Designers. It itemises all the content changes that might be made and instructs how we should track and mark them up within our storyboards for optimal clarity.

CLD Internal Instructions: Storyboards – Marking Up Changes for SMEs and Grade 7s

Overview

This document covers **mandatory instructions** for the way all CLD Editors mark-up changes for the attention of SMEs and Grade 7s who review after us in the workflow.

To better understand the workflow process, see 02_Working with TEL_for SMEs and Grade 7.pdf.

Rationale

Below are the key reasons for these mandatory instructions.

For workflow step 6: the project kick-off meeting

- The project kick-off discussion focuses on content structure, methods and media, and learner interactions (such as activities and knowledge checks). Changes at this stage should be easy to spot to aid discussion and avoid confusion.

At workflow step 7: CLD storyboarding

- The SME should be able to see clearly what has changed and why.
- The SME should be able to opt out of seeing certain smaller changes.

For workflow step 8: preparing for Grade 7 sign-off

- The Grade 7 should only have ‘highlights’ flagged up for their attention.

At all stages

- Historically, each Editor has worked in their own way with varying degrees of quality and clarity.
- When new Editors join the team, clear ways of working will be essential.
- Whichever Editor an SME or Grade 7 works with, they should receive the same high-quality experience.
- SO1 CLD will be able to give specific feedback and support where editorial standards aren’t being met.

Marking up changes for workflow step 6: the project kick-off meeting

Working in the CLD > 02_Kick off storyboards folder

Type of content change	Mark-up and tracking instructions
Formatting changes	At this stage, this should only include: - adding SME's original content to the CLD storyboard template; and - adding and/or styling page headings and subheadings if not already done. For the former, Track Changes should be off. The most significant feature will be the page chunking, which is indicated by storyboard tables. For the latter, Track Changes should be on. This will alert SMEs to check the wording of newly implemented headings and subheadings.
Changing the order of content (restructuring to improve narrative flow)	Such as improving narrative flow by making the order of paragraphs more logical, e.g. concept introduced > concept defined > concept elaborated on, increasing in complexity where needed > example of concept in context given. If the content is largely unfathomable, illogical or incomprehensible, escalate to SO1 CLD. If the content is missing significant information needed in order to fulfil TOs/LOs/KLPs, escalate to SO1 CLD. Otherwise … Whenever re-ordering content: - turn track changes off; - apply structural changes directly to the text; make sure that relocated text is contained within its own dashed row (see below);
[Insert relocated text to its own dashed row.]	- label relocated text, 'Relocated text #1'; change the background theme colour to the lightest grey – this is the only time we should be changing a row's background colour;
[Give the now empty space where relocated text was moved from its own dashed row.]	- add a comment in the notes section saying that this is where you've relocated text from, signposting where you've moved it to and stating your reasons why, e.g. 'DG note to SME: Original location of relocated text #1. Moved so that definition of Human Security comes before overview of HS issues.'

Adding content	At this stage, comments should only be added to the Notes column, consisting of recommendations for methods and media and learner interactions.

After creating and making relevant mark-ups on all module storyboards in this way, print enough copies for all project kick-off meeting attendees.

Marking up changes for SMEs at workflow step 7: CLD storyboarding

Working in the CLD > 03_CLD development storyboards folder

Type of content change	Mark-up and tracking instructions
Formatting changes	Such as: - applying a templated style; - adjusting an image size; - changing prose text into bullet points; - using bold to improve scannability. Always keep Track Changes off for formatting changes. They don't give SME, other Editors or SO1 CLD any useful information. It is expected that all formatting will follow the storyboard template, guide and sample.
Fixing objective linguistic errors	This includes: - spelling; - vocabulary; - punctuation; - grammar; and - syntax. Allow SME to choose whether they'd like to have Track Changes on or not for the correction of objective linguistic errors – check at project kick-off meeting.
Aligning with in-house style guide (including JSP 101)	Such as: - applying sentence case to headings and subheadings; and - using 'the MOD' rather than 'MOD' without an article. Allow SME to choose whether they'd like to have Track Changes on or not for alignment with the in-house style guide – check at project kick-off meeting.

Stylistic changes	Such as: - replacing cliches; - modifying 'classroom' style of delivery; and - changing anything that doesn't sound right to the ear. Please try to retain the SME's narrative voice and writing style. Stylistic changes can be highly subjective, so keep them to a minimum. When making stylistic changes, please work with Track Changes on.
Value changes	Such as: - avoiding negative stereotypes; and - avoiding bias. Make changes with Track Changes on. Leave a note for the SME with your rationale, e.g. 'SO1 CLD note for SME: I've changed the example from 'a woman nagging' to a disagreement between two people of unspecified gender to avoid sexist tropes.'
Changing the order of content (restructuring to improve narrative flow)	Such as improving narrative flow by making the order of paragraphs more logical, e.g. concept introduced > concept defined > concept elaborated on, increasing in complexity where needed > example of concept in context given. Whenever re-ordering content: - turn track changes off; - apply structural changes directly to the text; - make sure that relocated text is contained within its own dashed row (see below);
[Insert relocated text to its own dashed row.]	- label relocated text, 'Relocated text #1'; - change the background theme colour to the lightest grey – this is the only time we should be changing a row's background colour;
[Give the now empty space where relocated text was moved from its own dashed row.]	- add a comment in the notes section saying that this is where you've relocated text from, signposting where you've moved it to and stating your reasons why, e.g. 'DG note to SME: Original location of relocated text #1. Moved so that definition of Human Security comes before overview of HS issues.'
Improving comprehensibility: re-writing text	Any changes (e.g. to syntax or grammar) made in order to make the intended meaning easier to understand. Track changes must be turned on, as re-writing text counts as a significant editorial change. Replace whole sentences and paragraphs rather (as necessary) rather than tracking all the chops and changes within.

	Like this … ~~Her mellifluous verbiage, though erudite, harboured a labyrinthine convolution of esoteric precepts and cryptic paradigms.~~Although she knew a lot and spoke well on the topic, her ideas were confusing and contradictory. Instead of … Although she knew a lot and ~~Her mellifluous verbiage~~spoke well on the topic, ~~though erudite~~, ~~harboured a labyrinthine convolution of esoteric precepts~~her ideas were confusing and ~~cryptic paradigms~~contradictory.
[Give re-written text its own dashed row.]	Where you have re-written incomprehensible text, leave a note for the SME to sense check the new content, e.g. 'DG note for SME: I've made significant edits here to improve comprehensibility. Please check to make sure I've retained your original intended meaning.'
Improving comprehensibility: three or more changes in a sentence	Any changes (e.g. to syntax or grammar) made in order to make the intended meaning easier to understand. Track Changes must be turned on, as comprehensibility improvements count as significant editorial changes. Bear in mind that where a sentence needs many changes, it's easier on the eye to replace the whole sentence then all the little bits within. Like this … ~~Although she was exceedingly well versed and spoke well on the topic, her ideas were, nine times out of ten, confusing and contradictory.~~Although she was an expert and spoke well on the topic, her ideas were often confusing and contradictory. Instead of … Although she was ~~exceedingly well versed~~an expert and ~~mellifluously eloquent~~spoke well on the topic, her ideas were~~, nine times out of ten,~~ often confusing and contradictory.
Improving comprehensibility: one or two changes in a sentence	Any changes (e.g. to syntax or grammar) made in order to make the intended meaning easier to understand. It's okay to make changes within the sentence if you're just changing odd bits. However, Track Changes must be turned on. Although she knew a lot and ~~articulated mellifluously~~spoke well on the topic, her ideas were confusing and contradictory. Switch to Simple Markup to make sure your edits haven't introduced any typos or formatting errors.
Improving readability	Such as: - writing abbreviations out in full form in their first instance;

	- replacing unnecessarily difficult vocabulary (non-subject-specific vocabulary) with Plain English; and - improving Flesch/Flesch-Kincaid score (favouring shorter words, shorter sentences and active sentences). Allow SME to choose whether they'd like to have Track Changes on or not for readability edits – check at project kick-off meeting.
Adding content	Such as: - adding source attribution; - introducing segue text and signposting; - giving definitions for words and concepts where necessary; and - elucidating intended meaning, e.g. by adding examples. Track Changes must be turned on, as adding content counts as a significant editorial change.
[Give new text its own dashed row.]	Where you've added new text, leave a note for the SME for them to check it, e.g. 'DG note for SME: I've added a definition for Human Security. Please check and change if needed.'
Removing content	Such as content that: - doesn't align with TOs/LOs/KLPs; - is factually inaccurate; - is a repetition of other content or otherwise superfluous; and - could cause reputational damage to TEL/DefAC/MOD. Track Changes must be turned on, as removing content counts as a significant editorial change.
[Leave struck through original text in its own dashed row.]	Where you've deleted original text, leave a note for the SME including your rationale, e.g. 'DG note for SME: This paragraph repeats highlighted points made on previous page without adding anything. Please 'reject deletion' if you would prefer.'

After marking up all module storyboards in this way, send them to the SME along with the Working with TEL – Checking CLD Edits: A Guide for SMEs document.

Marking up changes for Grade 7s at workflow step 8: preparing for Grade 7 sign-off

Working in the CLD > 04_CLD storyboards for Grade 7 sign off

Type of content change	Mark-up and tracking instructions
All	Strip out all mark-ups to SMEs (they should all have been approved or resolved by this point), so that only developer instructions remain.

	With Track Changes off, add 'highlights' comments for the Grade 7 in the Notes column to give them a top-level overview of noteworthy changes made to the original content. This should include mentions of either first instance of types of changes (or most significant instance of types of changes) for: - content restructuring to improve narrative flow; - improved comprehensibility; - improved readability; - added content; and - removed content. Some examples below. 'CLD note to Grade 7: We changed this section around so that learners were introduced to the concept before dealing with its complexities.' 'CLD note to Grade 7: We changed the Flesch readability score for this module from 40 to 60, making it much easier for learners to digest.'

After marking up all module storyboards in this way, notify SO1 CLD that they are ready for Grade 7 sign-off.

Document in content
This guidance for communicating with developers is used to train Editors and Instructional Designers about what CLD can ask eDT for and how it should be done to ensure we get the outputs we want as efficiently as possible

Main Storyboard: Communicating with eDT Developers

In all CLD communications with eDT developers, we need to have good discernment about what they do and don't need to know in order to execute what we're asking for.

- They should never have to immerse themselves in the substance of the text to understand what we're asking them to do.
- CLD notes, suggestions and queries should be exemplars of comprehensibility; there is no place for ambiguity.

Implementing decisions made during the project kick-off meeting

For each cluster of C-SILs, CLD and eDT will already have collaborated in the project kick-off meeting to determine:

- how C-SIL content will be chunked;
- what types of methods and media will be used and where; and
- what types of learner activities will be used and where.

In each main storyboard document, we will reflect the decisions made in the project kick-off meeting by having:

- content chunked into one table per page (with accurate descriptors – cluster name, C-SIL number and name, page number – in the table banner);
- clear redirection to supplementary video, animation and infographics storyboards, audio scripts, and knowledge checks; and
- standardised briefing of agreed learner activity types.

For definitions of the highlighted terms, please see 06a_Cluster structure and terminology.pdf.

For a project kick-off description and checklist, please see 06e_Pre-kick-off meeting guidance.pdf.

For an overview of different types of methods and media, please see the methods and media document.

For an overview of different types of learner activities, please see the learner activities document.

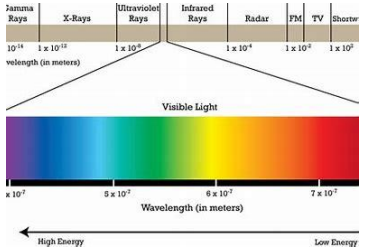
Communicating CLD decisions about what images and how text should be presented

We will also need to write notes that convey information to developers that wasn't determined in the project kick-off meeting.

This relates to notes on:

- requested and/or recommended images;
- text formatting, e.g. quotations;
- supplementary content, e.g. video storyboards;
- treatment of definitions;
- linking to sources; and
- ‘unstable’ text.

Guidelines for each of these types of notes are covered in the table below.

Type of note	Purpose	Information to share	Examples
Image requests and recommendations	To convey SME specific image requests To make our own image recommendations To save developers having to read and digest all the text content if they don’t have time to	Use ‘request’ in the note to developers if the SME has made a specific request or if you feel like the page needs a specific image to help make sense of text. Use ‘suggestion’ for images that are optional or decorative. Say whether an image suggestion is from us or the SME. If from the SME, include a copy of the image and a source location. Note that eDT developers usually source images from Adobe Stock (free licence), iStock (via Serco) or Defence Imagery. If the SME would like us to use a specific image (rather than a similar image) from another source, eDT will need to check permissions. Make it clear whether page images should be specific (relating directly to page content) or generic (relating to the overall C-SIL theme). If specific, say what the key features of the image should be.	SME request for developer: SME requested the image below. If unusable, please find something similar relating to peacekeeping forces in desert terrain.  Rebecca request for developer: The text describes wavelengths of different colours on the electromagnetic spectrum. This information must be supported by an image. Please source one like the one recommended below. 

		Say whether the image should depict military and/or civilian personnel *based on the text*. Developers know to include a variety of military and civilian people (as well as age/race/gender/other variety) throughout a C-SIL, so we only need to signal whether **the text itself** requires specific people or not.	Rebecca suggestion developer: Images showing colleagues (military and/or civilian) in a meeting or working in a busy office would be relevant on this page. Rebecca suggestion for developer: Any relating to overall C-SIL theme: adult education.
[Headings and subheadings]	To show at a glance how we think page content should be divided Improves scannability and assists in-page navigation	Every page should have a heading relating to the main topic content. Subheadings should be used to divide page content into subtopics.	[No accompanying note needed]
Formatting: bold	To indicate where we want bold text only Improves scannability and assists in-page navigation	Apply bold directly to text in the left-hand column where you would like to draw attention to something. Leave a review note with stock text to signal that our use of bold is deliberate.	Rebecca note to developers: Bold used to draw learners' attention to key parts of text.
Formatting: quotations	To indicate where quotation text should be styled differently to normal text Improves scannability and assists in-page navigation	Put the quotation and its source reference in the left-hand column of its own dashed row. Leave a review note in the right-hand column of the same row. We don't need to do this for all quoted text; only where you think particular attention needs drawing to a quotation via visual design. • I think it's useful when the quotation is a leader into further elaboration in the main text. • I think it's less useful when the quotation is playing a supporting role to something in the main text. I	Rebecca note to developers: This text is a quotation we'd like to draw learners' attention to.

		would rather format the key parts of the main text (see below) than a quotation in these instances.	
Formatting: key text	To indicate where key text should be styled differently to normal text	Put the quotation and its source reference in the left-hand column of its own dashed row. Leave a review note in the right-hand column of the same row.	Rebecca note to developers: This text is key information we'd like to draw learners' attention to.
Formatting: subsidiary text	To indicate non-essential text To indicate additional content for more enthusiastic learners	Put the quotation and its source reference in the left-hand column of its own dashed row. Leave a review note in the right-hand column of the same row.	Rebecca note to developers: This text is not relevant to all learners, so should be nested. If you need a heading, e.g. for an accordion, please use [insert appropriate accordion heading].
Supplementary content: audio	To indicate that all audio script content is collated in one supporting document	In the left-hand column for page text, include the full audio script text with [Audio script] before the start and [End of audio script] after the end. Add the text to a separate audio script document. In the right-hand review note column, add a comment signposting to the audio script document.	Rebecca note to developers: This text has been added to the audio script document for voice recording.
Supplementary content: video, animation and infographic storyboards	To show where we're switching from the main text storyboard to a supplementary storyboard	There shouldn't be any video, animation or infographic content in the main storyboard. Each one should have its own storyboard. In the right-hand review note column, add a comment signposting to the relevant document	CLD note to developer: Please insert [video/animation/infographic] from [storyboard document name] here.
Supplementary content: module knowledge checks		The module knowledge check should come on the final table of a module's storyboard document. Each knowledge check question should give standardised briefing according to the question type.	[No accompanying note needed]

Supplementary content: entire cluster knowledge check	To show where we're switching from the main text storyboard to a supplementary storyboard	There shouldn't be any video, animation or infographic content in the main storyboard. Each one should have its own storyboard.	[No accompanying note needed]
Definitions: glossary	To indicate that we want a glossary to be included	We should use a glossary when definitions are needed for multiple subject-specific terms on one C-SIL page. Highlight the words that you're going to include in the glossary. They should be subject-specific terms only. Any non-subject specific vocabulary that needs defining should be substituted for a simpler word. Leave a stock note to developers about the highlighted words. In the left-hand column, include briefing for glossaries as follows … In a cluster's first instance [Glossary card to appear on page – learners should be able to view definitions at the same time as viewing main text on the page – glossary box explanation given for this first instance] [Side 1] **Glossary** Throughout this course, we use specific words that are essential to understanding the subject. Look out for these boxes which will provide definitions. [Side 2] **[word]** [definition]	[Rebecca] note to developers: The highlighted words are included in the glossary. It would be useful to style them to show this.

		[word] [definition] [end of definitions] In all subsequent instances [Glossary card to appear on page – learners should be able to view definitions at the same time as viewing main text on the page] [Side 1] **Glossary** [Side 2] **[word]** [definition] **[word]** [definition] [end of definitions]	
Definitions: hover-over	To request a (couple of) definition(s) on a page without the need for a glossary	Highlight the word(s) that you want a hover-over definition to be added to. Leave a note for the developer requesting the functionality and text.	Rebecca note to developers: Please add the following definition when learner hovers over 'endemic': regularly found in a particular place or amongst a particular group of people
Linking to sources: hyperlinks within sentences	To indicate that the learner may wish to look at other resources	Used when incorporating hyperlinked text in a sentence, e.g. when referring learners to another resource for more information. The UN web page on children and armed conflict gives more details on this.	Rebecca note to developers: Please hyperlink the highlighted text to URL https://childrenandarmedconflict.un.org/

		- Highlight the text that you would like to be hyperlinked and leave a note for the developer with the URL. - The highlighted text should describe what is being hyperlinked; avoid vagueness such as, 'Click here for more details'.	
Linking to sources: content citation	To give attribution for others' content	Used when providing citation for others' content, e.g. quotations, images, infographics. - [Type of content] source: [insert URL] - No developer instructions needed Quotation source: https://childrenandarmedconflict.un.org/	[No accompanying note needed]
Text dependent on image/graphic	To show developers that a text is 'unstable'	'Unstable' refers to any text that needs changing if eDT decide not to implement our suggestion. For example, if we request an accordion but the developer thinks block prose would be better, the text 'Click each of the headings below to see more information on each of …' would need to change. Highlight this 'unstable' text and leave a comment for developers in the Notes column.	Rebecca note to developers: The highlighted text will need to be updated if an accordion isn't used here.

In addition to the pieces compiled here, several others have been omitted.

These include:

- our in-house Style Guide which is too long to add;
- a full catalogue of activities and interactives which is in development; and
- context-specific guidance of limited value to a wider audience.

Project CODEX – C-SIL Benchmarking

Benchmarking Report

April 2024

Building a better working world

Table of Contents

1. Executive summary

Current context and objectives of this report

Post-pandemic, Defence Academy (DefAc) Project CODEX has been developed to enable the digitalisation of learning for Defence in the UK.

As a critical workstream within project CODEX, DefAc designed a standard known as Content-Specific Information Learning (C-SIL). C-SILs are accessible, on-demand resources, available at the point of need, for any member of the Defence workforce, anywhere in the world. Currently, C-SILs are outperforming other MOD courses on learner satisfaction.

This benchmarking report:

- compares the C-SIL design standards with other Defence, Industry and Academic providers, highlighting the benefits of C-SILs and how their adoption will benefit broader Defence learning; and
- reviews the C-SIL learning content to ensure that DefAc delivers what Defence requires in a way that adds value.

Overall findings

DefAc's C-SILs lead the way in forming and adhering to a clear set of innovative design standards, with a consistent user experience.

C-SILs are particularly strong in their Whole Force accessibility, flexibility, and reusability, allowing for use across several learning pathways. The report analysis identifies social learning, gamification, and AI as areas for development.

The fact that C-SILs are designed by Defence, for Defence, creates learning which is relevant at the point of need.

Recommendations

- Explore scalability across Defence: involve other departments in C-SIL design and increase access to C-SIL content.
- Provide recognition, clearer accreditation, and badging on completion of C-SILs.
- Further innovations include added social interaction, gamification, and future-focused content.
- Develop an evaluation strategy and feedback system to refine C-SIL learning, to regularly evaluate impact and effectiveness.

2. Introduction and methodology

2.1. Introduction

To promote the C-SIL design as part of Project CODEX, the Head of J7 (Research, Education, and Operations) at the DefAc has requested a benchmarking activity to compare the DefAc approach with other Defence, Industry and Academic providers to highlight the benefits of C-SILs and support their uptake across Defence.

Project CODEX aims to provide Whole Force access and enhance the quality of all learning materials across the DefAc, whilst converting all relevant knowledge-based content into accessible, re-usable digital learning resources, known as C-SILs. C-SILs themselves are a design standard based on the CODEX objectives:

- Build once use many times
- Standardised, integrated
- Accessible by design
- Open to Whole Force
- Accurate Defence-endorsed content
- Reduced duplication of effort
- Multiple ways to deploy

C-SILs and Project CODEX have been created to convert knowledge based content to online learning, supplementing traditional face-to-face classroom-based learning, and supporting fully digital and blended learning.

The DefAc plans to release 800 C-SILs that will be prioritised for ‘on demand’ topics and will undergo regular review cycles to ensure content remains relevant and up-to-date, saving learning professionals that want to capture and share their learning considerable time and money.

2.2. Purpose of the report

EY partnered with the Head of J7 and the Technology Enabled Learning team to create a benchmarking report seeking to assess the C-SIL approach against other external comparators against the Defence backdrop and digital learning context.

Specifically, the report seeks to understand:

Section 1

- The Learning and Development (L&D) context within Defence and how C-SILs compare to other digital learning available to MOD employees.
- The alignment of these Defence trends with external L&D trends.

Section 2

- How C-SILs compare to other external organisations as a design standard.
- How C-SILs compare to other external organisations as microlearning.

2.3. Methodology

The benchmarking assessment of C-SILs was performed using data sources which summarise the C-SIL approach and compare it to other parts of Defence and the broader industry. These data sources include but are not limited to:

- Review of key documentation related to C-SILs. An overview of all these key desk research documents can be found at the end of this report.
- Interviews with internal MOD stakeholders and stakeholders from other Defence entities.
- Research into equivalent digital learning, across UK and International public, private sectors, and e-learning providers to provide a comparison of the similarities and variances with the C-SIL approach.

The C-SIL approach was measured against comparators to understand:

a. The standards being used (Technology Code of Practice, WCAG Accessibility guidelines).

b. Content design approach - developed solely 'in-house' or partially/completely through 3rd party.

The C-SIL microlearning product was compared against external equivalents with consideration given to the following criteria, however availability of data has prevented a comprehensive review of all criteria for each comparator.

Figure 1: Benchmarking criteria

1. Accessibility of learning	2. Flexibility of learning	3. Contextualisation of learning to sector	4. Length of learning content
5. Provision of timely feedback on learning activities	6. Learning meets organisational and individual needs	7. Interactivity of learning content	8. Ensuring social interaction opportunities are designed into training
9. Provides relevant, 'real world' practical learning experiences	10. Promotes a culture of self-learning, giving learners the tools to own their learning	11. Support learning professionals to develop and build skills	12. Senior management/leadership are driving uptake and engagement
13. Degree of technological innovation	14. Consistency of product	15. Assessment and recognition of learning	16. Personalised content

3. Section 1 – The Defence and broader context

3.1. Introduction

This section summarises the C-SIL approach, its benefits, and how it differs from current cross Defence digital learning offerings. It then assesses the current digital learning landscape within Defence and its alignment to the global shift to digital and microlearning.

3.2. The C-SIL product

DefAc developing C-SILs to transform the way digital learning is delivered. C-SILs are a design standard to build bite-sized, knowledge-based microlearning based around functions rather than courses. This learning is accessible, at the point of need, for any member of the Defence workforce, anywhere in the world. C-SILs possess a high degree of flexibility, reusability and shareability, thus embodying the 'build once, use many times' principle. They are created in collaboration with Defence SMEs, ensuring that content is Defence-endorsed, reliable, relevant, and of high quality. The C-SIL design process ensures that all learning outputs meet accessibility and design standards (e.g. TCOP and WCAG).

This microlearning can be used in four different ways: as a standalone C-SIL, as modules within a DSAT course, as a whole study unit of several C-SILs (a cluster), or to support a blended learner journey (pathway).

3.3. Analysis of C-SIL products vs. existing Defence eLearning

The C-SIL learner satisfaction score was assessed using all active C-SIL courses available on the DLE, via the learner feedback (InVal) question "Was the learning a good use of your time?." The findings show that C-SILs compare ahead of the wider MOD L&D satisfaction scores: 80% of MOD learners who completed a C-SIL are either satisfied or very satisfied with their training. The Climate Change Awareness, Introduction to Defence Operating Model and Introduction to Finance C-SILs have satisfaction rates of 85-95%. In comparison, the MOD average learner satisfaction score, from the 2023 Civil Service People Survey, stands at 49%. C-SILs are therefore outperforming other MOD courses on learner satisfaction, indicating that C-SILs compare favourably to other MOD digital learning[1].

This research also performed a practical, qualitative comparison of learners' experience in C-SILs against different iterations of the Def Ac's products available on the DLE. The four different assets considered include:

1. a TEL standard C-SIL (Human Security);
2. a non-C-SIL TEL Fundamentals course (Active Bystander);
3. an internally generated course (Annual Mental Fitness Brief); and
4. a mandatory training course externally created with a third-party supplier (Personal Perspectives).

[1] See Figure 7 in the appendix for a detailed breakdown of the C-SIL learner satisfaction score compared against other organisations.

Similarities between the four assets include clear communication of course learning outcomes, signposting to further learning resources, interactive elements, tile layout supporting user flexibility, and use of MOD examples and case studies.

C-SILs are more accessible, MoD brand compliant, and better contextualised although all courses are likely to have been built to meet audience needs, using the resources, media, and time available, which should be considered. C-SILs use less assessment and video content, and they would benefit from module summary pages and delivery within the same webpage. The specific findings are:

- The Human Security C-SIL makes greater use of MOD imagery compared to the other courses, increasing reusability and shareability across services.
- Personal Perspectives and the Annual Mental Fitness Brief make greater use of **videos** to deliver content, whereas the TEL eLearning primarily uses text.
- Active Bystander Fundamentals v2 uses **formal assessment** throughout the course, in which learners are required to complete a Confirmation of Learning after each module to progress as it forms part of Defence mandatory training. All courses use **knowledge checks**; however, they are more frequent in Active Bystander and Personal Perspectives than the Human Security C-SIL.
- The Human Security C-SIL is offered in the widest variety of alternative formats. The Human Security and Active Bystander content is offered in Word and PDF format as well as within the browser. This is not the case in the other courses, which either offer PowerPoint or H5P links.
- Personal Perspectives includes a clear **module summary** at the end of each module, reinforcing the key messages covered. This was not as defined within the other courses considered.
- The Personal Perspectives course and Annual Mental Fitness Brief are the only courses delivered within the **same webpage**, facilitating a smoother learner experience.
- All C-SIL content is **contextualised** for Defence, whilst in the equivalent courses there is some contextualised content.

There are additional differences between C-SILs and wider MOD eLearning which support the positive impact of C-SILs in Defence's digital learning offer:

- C-SIL content can be seamlessly merged into existing courses on the Moodle LMS, enhancing flexibility, whilst the MOD owns the intellectual property rights of C-SIL content, which is entirely AA accessible. This cannot be guaranteed for all MOD eLearning.
- C-SILs are universally compliant with the Technology Code of Practice.
- The C-SIL development process involves multiple sign off points with Defence SMEs for Defence endorsement, which cannot be confirmed for all MOD eLearning.

Finally, we have used Marshall's eLearning Maturity Model, a quality improvement framework for Higher Education institutions to improve their organisational capability using technology in learning and teaching (Marshall, 2013), to score C-SILs against other types of Defence eLearning. The results told us that:

- C-SILs possess greater flexibility and reusability compared to equivalents.
- The C-SIL development and institutional planning process scores highly against Marshall's model.
- C-SILs score comparatively less favourably on learner assessment. This is likely to be the case as assessment is held within the course or pathway than at C-SIL level.
- More can be done across all the eLearnings considered, including C-SILs, to provide greater learner support[2].

In all, the findings support the conclusion that C-SILs compare favourably to other MOD digital learning.

3.4. The Defence Context

C-SILs have been pursued by the DefAc within a Defence context for several reasons. There is a lack of standardisation across Defence digital learning, leading to duplication of effort and inconsistency of quality. Digital learning has not been designed with accessibility as a key consideration, and Whole Force access to role-relevant digital learning content is limited – lack of ability to access content for those not enrolled onto courses. There is a pressing need for change to tackle these issues and address the current demands of the workforce, including reviewing the ability to provide learning at point of need.

It is important to consider the landscape within which C-SILs exist. The MOD's learner satisfaction score is below the Civil Service benchmark, according to Civil Service People Survey data (Cabinet Office, 2024), highlighting the discrepancy between learning provision and learner needs. Whilst this reflects the experience of MOD military and civilian personnel who completed the survey, an assumption has been made that this is also reflective of MOD more generally. After performing comfortably above the Civil Service Benchmark for learner satisfaction by 1.5% in 2020, MOD has performed below this benchmark in the three subsequent years. Over the period analysed, positive responses to the question 'There are opportunities for me to develop my career,' has seen the sharpest decline, falling 6% ppts since 2020 (see Figure 1[3]).

Therefore, it would be beneficial for changes to be made within MOD L&D to improve these results.

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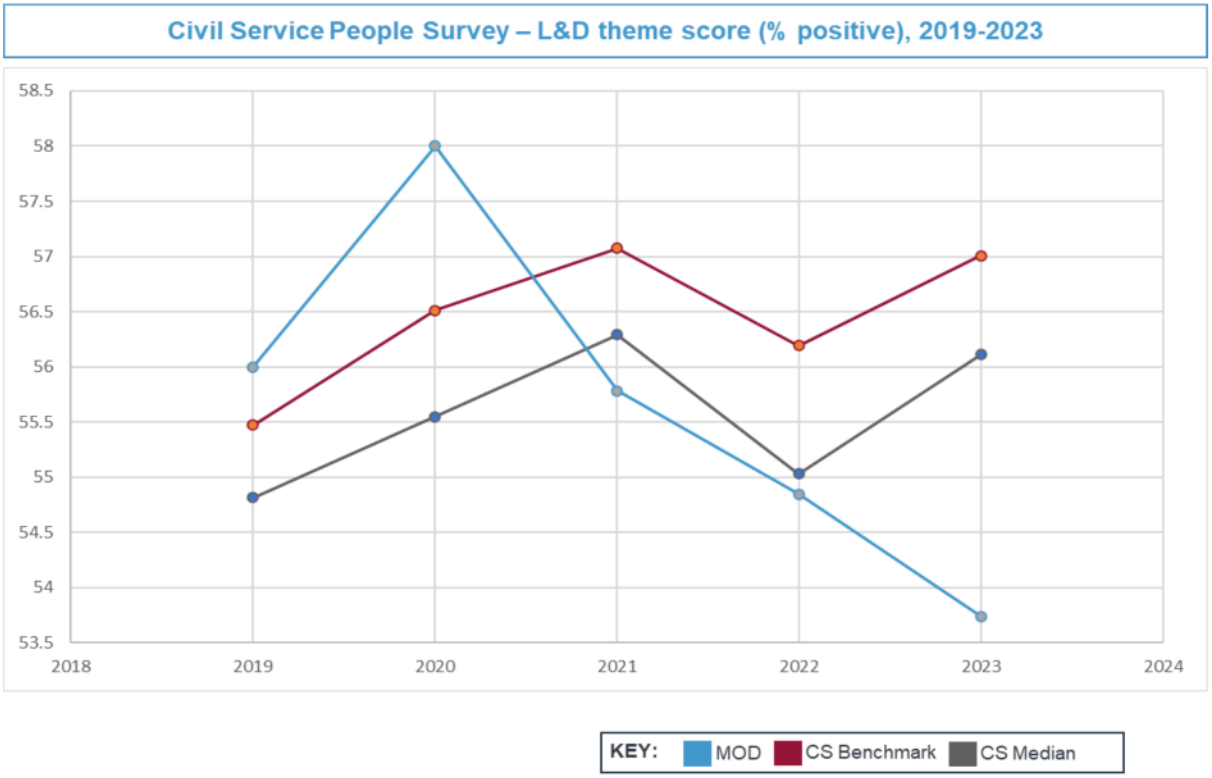
[2] See Figure 8 in the appendix for a detailed view of how the types of MOD e-learnings score against Marshall's e-learning Maturity Model

[3] See Figure 6 in the appendix for a breakdown of MOD's 2023 L&D performance against the Civil Service Benchmark

Figure 2: Civil Service People Survey L&D theme score (% positive), 2019-2023.



'Defence Design 2030' and 'Digital Skills for Defence Programme' Leadership

There is a clear drive within Defence to build digital capabilities to provide rapidly delivered, high-quality digital training. This is evidenced by the MOD's overarching Defence Design 2030 vision, affirming that the MOD "will be one of the most integrated, digital, and agile forces in the world, projecting our influence and promoting our capabilities on the world stage across land, air, maritime, cyberspace and space" (Military of Defence, 2021: 39). Training must be available to be consumed on a just-in-time basis, to support the upskilling of personnel.

The Digital Skills for Defence programme is currently working to increase access to digital learning, foster a digital culture, build word-class digital skills, and ensure workforce digital readiness (UK Government, n.d.). The key link here with the DefAc's C-SILs is the outcome to provide people with access to best in class, appropriate and personalised digital learning.

The increased adoption of digital learning practices is a priority for UK Defence. Nonetheless, whilst Defence is moving in this direction, it is restricted to the degree of digital and technological innovation that can be pursued compared to non-Defence organisations, largely due to cybersecurity concerns, which may lead to Defence becoming 'late-adopters' of the digital learning options that other organisations are implementing. Regarding C-SILs and associate learning, the implication is that DLE security classification must be taken into account when considering the possibility of incorporating new digital and technological innovations.

3.5. The broader context of the shift to Digital

The move towards digital, bite-sized content in learning is an industry-wide shift, evidenced by several key digital learning trends currently driving change within L&D.

Learner trends

- More flexible, digital 'bite-sized' modular learning content, awarded using micro-qualifications or credits that can be incorporated into more defined and recognised learning journeys and underpinned by a common skills framework (Department for Education, 2021).
- Video content was especially effective in supporting learning in the pandemic, alongside mobile learning, curated content, and microlearning (Fosway Group, 2020).
- Cost and resourcing considerations: demand to provide cheaper, shorter L&D that is incorporated into an employee's 'day job' (Universities UK, 2018).

Organisations and Governments (Impact of COVID-19) trends

- 47% of L&D teams plan to deploy microlearning programmes in 2024 (LinkedIn Learning, 2024).
- The Governments of Singapore and France launched nationwide campaigns to promote the benefits of digital learning (CIPD, 2021).
- The Governments of Germany and Sweden directed funding towards building the skill levels of instructors in delivering digital learning (CIPD, 2021).
- Before the COVID-19 pandemic, most organisations were using digital learning to deliver less than 20% of their total L&D activity. Usage of digital learning is now above trainer-led training and in-house development programmes. The growth in digital learning in part is driven by a need to upskill and reskill adults in the context of changing business models, digitalisation, and automation (CIPD, 2021).
- There has been a clear shift towards "just-in-time and in-the-flow-of-work learning" (CIPD, 2020: 2).

There are a range of digital learning options available to organisations:

- **eLearning**: Online, self-paced learning conducted via digital platforms on computers, tablets, or smartphones.
- **Virtual classroom**: Instructor-led learning conducted via digital collaboration platforms such as MS Teams, Zoom, and Webex.
- **Digital social learning**: Leverages digital social networks for sharing knowledge and experiences, promoting user-generated content and peer-to-peer interaction.
- **Gamified learning**: Uses game design elements in learning contexts to motivate learners and make learning more engaging and fun.
- **Immersive learning**: Use of AR/VR, mixed reality, metaverse experiences and simulations to create immersive learning experiences[4].

[4] It is important to note that Defence may be unable to be a leading organisation in the use of this technology within L&D due to cybersecurity concerns.

Organisations shifting to providing digital learning in these formats can expect to realise some of the following benefits.

- **Cost effectiveness and reusability**: digital learning reduces or eliminates costs associated with in-person training. It can be used multiple times over an extended period and updated efficiently (Yusuf & Al-Banawi, 2013).
- **Accessibility and flexibility**: access anytime, anywhere, and on any device. Digital learning can cater to diverse learning styles and attention spans, improving inclusion and effectiveness (Hayden, 2023).
- **Scalability**: organisations can provide consistent training content to many employees across multiple locations (Hayden, 2023).
- **Rapid reskilling and upskilling**: digital learning is a quick and efficient medium for employees to acquire and update skills essential to their roles or market trends (Pandey, 2022).
- **Analytics and data tracking**: digital learning platforms provide comprehensive analytics on learner engagement, course progress, and skills enhancement, aiding continuous improvement of training programmes (Tangri, 2021).
- **Personalised learning**: digital learning technology can deliver personalised, pathway-driven learning experiences tailored to individual skill and knowledge levels, leveraging machine-learning and innovations in AI (de Vera, 2021).

Digital learning has been found to require 40-60% less time than traditional classroom learning, as learners can study at their own pace (Godsey, 2019). Retention of learning is improved by up to 60% in a digital setting: learners have more control over the learning process and can focus on the most relevant learning (Oxford Learning College, 2023). Many organisations have explored combining digital learning with face-to-face interventions, and Towards Maturity found that blended learning is usually the most effective delivery method of learning (Daly & Overton, 2017). In fact, completing digital pre-learning activities before attending a face-to-face or virtual classroom increases learner engagement in the classroom and the likelihood of meeting learner outcomes (Fergus, 2020). It is thus unsurprising to see many organisational L&D programmes incorporating digital learning.

The shift toward digital learning can be refined further. Organisations are increasingly turning to microlearning to upskill their people, where concepts or skills are taught in small, highly focused segments, akin to the C-SIL methodology.

A 2020 survey found that over 70% of companies planned to increase their use of microlearning within their L&D offerings (Cooke, 2021), and several organisations have endorsed the validity of this methodology. Google moved from a traditional classroom environment to microlearning due to its effectiveness and ability to improve memory retention: short content drives over 20% more information retention than long-form content (Heinle, 2024). IBM launched IBM Microlearning, a platform to enable employees to develop cloud expertise at their own pace, offering a quick, focused, and easily accessible way to develop the skills required (Heinle, 2024). Finally, Shell has developed microlearning online offerings to upskill its workforce and ensure that learning is delivered in the flow of work (CIPD, 2020).

To summarise, external organisations, especially in the private sector, show clear evidence of movement towards digital learning, particularly microlearning. Both

market and organisational trends point towards workplace learning being agile, bite-sized, and easily accessible at the point of need, to meet changing learner requirements and expectations. Whilst it is challenging to keep pace with innovation in the private sector due to security considerations in the Defence context, the DefAc's development of C-SILs aligns with the wider trend of digitally enabled learning.

4. Section 2 – External comparison data

4.1. Introduction

This benchmarking document seeks to compare C-SILs both as a design standard and as microlearning to equivalent offerings from external organisations within the digital learning space, and to identify common examples of similar good practice the DefAc could learn from, as well as areas needing improvement.

As comparisons are made, it is important to consider that C-SILs sit within the Defence learning context and are bound by certain restrictions. C-SILs are not seeking commercial gain, and they may be unable to deploy innovative technology, such as VR and AR, within digital L&D due to cybersecurity requirements.

4.2. C-SIL as a design standard

We sought to benchmark C-SIL as a design standard against external organisations by using TEL's standards, which form a set of rules and a fixed template for how digital content is created and presented within an eLearning package.

Our research found that other organisations do not follow design standards in eLearning in the same way as the DefAc's TEL team. This is because the organisations we looked at do not offer a library of digital content for their L&D design function to use in the design of their learning interventions. The digital learning team at EY has a set of common design principles, applicable to all, which provide the golden threads that underpin the design and development of a learning product. These design principles consider aspects such as 'voice of the learner,' 'do's and don'ts around wording' and 'bite-sized learning,' but not the same rigorous design standard of the C-SIL approach. Therefore, C-SILs cannot be compared like for like with external comparators but only across several common design principles.

Figure 3: Comparison of Design Principles

	MOD 'TEL standards'	**University of Bristol 'Core standards for online spaces (n.d.)**	**NHS Leadership Academy 'Government Design Principles' (n.d.a)**	**NHS Scotland 'E-Learning Guide using ADDIE model' (2013)**	**FCDO 'Programme Operating Framework Principles' (2023)**
Sample of principles	1. C-SIL course shells can be created by users with DLE 'sub-category' permissions for the C-SIL Library only. The development of C-SIL modules must be completed by members of DefAc HQ J7 eDT	For course information and objectives • The schedule of expected course activities is clearly laid out • Intended Learning Outcomes are	1. Start with user needs 2. Do less 3. Design with data 4. Do the hard work to make it simple 5. Iterate. Then iterate again 6. This is for everyone 7. Understand context	Technical • Design for the following hierarchy: course, module, topic • Design for a screen resolution of 1024x768 pixels Content	Collaborative, honest, professional, ambitious, transparent, innovative, and agile, responsible, and accountable, **context-specific, evidence-based,**

	or via eDT contracted staff. 2. The CSIL - Cards template provides a templated shell for new C-SIL courses.	clearly identified • Policies are linked to or attached, where relevant	8. Build digital services, not websites 9. Be consistent, not uniform	• State learning outcomes • Write course welcome text, module welcome page text, etc., depending on the structure	proportionate, and balanced
Use of appropriate format	Yes	Yes	Yes	Yes	Yes
Referencing correctly	Yes	N/A	N/A	N/A	N/A
Use of data for design	Yes, but dependent on SME	N/A	N/A	Yes	Yes
Inclusive of design phases	Yes	Yes	No	Yes	Yes
Learning outcomes clear	Yes	Yes	Yes	Yes	N/A
Consideration of context	Yes	Yes	Yes	N/A	Yes

Implications

Through C-SILs, the DefAc moves beyond a general set of design principles into more specific design guidance with a set of enforceable standards. The C-SIL approach should produce greater levels of standardisation, which will need to be balanced in terms of speed of design, cost of time and resource, and flexibility of design to meet learner needs and deliver a quality product.

4.3. C-SIL as microlearning

To structure the benchmarking research of C-SILs as microlearning, external organisations have been grouped according to type, allowing clear implications to be drawn around how C-SILs stand up against external comparators that are leading in the digital and microlearning space.

4.3.1. Private sector

Comparisons were made to private sector organisations leading in the digital learning space e.g. Google, IBM, Unilever, SAP, Kelloggs, Dell, Mazars and EY. The C-SIL approach was considered across learner satisfaction, digital-micro learning creation, contextualisation, and branding, learning tracking and assessment, use of third-party content and internal SME's, proficiency, and accessibility.

The C-SIL learner satisfaction score indicates that C-SILs are highly regarded, with 80% of learners either satisfied or very satisfied with their training. Compared to EY, a leading private sector organisation with a score of 80% in learner satisfaction, C-SILs are performing at an equivalent level.

Google, a leading organisation in digital microlearning, has harnessed microlearning in the form of 'Whisper Courses' (Stillman, 2017) to improve memory retention and support existing training courses. Google sought a new way to create a psychologically safe team culture, moving away from a traditional classroom environment. The approach helped employees put their learning into action via reminders instead of more lessons. Managers received a series of emails ('nudges') with short snippets of content which supported them to put their team culture training into action; over ten weeks, this led to a 22-40% behavioural improvement amongst managers. Whilst Google's microlearning approach supplements existing training, this example highlights how private sector organisations are using microlearning approaches to reinforce learning. In comparison, C-SILs offer a broader approach to microlearning, acting not only as a nudge but also as a standalone learning module.

IBM's Microlearning platform enables employees to develop technological cloud expertise in a quick, focused, and accessible way (Heinle, 2024). The platform uses bite-sized lessons to develop learner knowledge quickly and efficiently, which is comparable to C-SILs in its use of bite-sized microlearning at point of need.

Another example is Unilever's "snackable learning" tool, offering training comprising modules of TED talks, instructional videos, social campaigns, and supporting resources (Radu, 2021). In comparison, C-SILs make less use of videos and audio content. C-SILs do not use third-party learning content/ products, choosing to curate existing content and create new content only in collaboration with the right Defence subject matter experts.

Several key differences have been identified through analysis of C-SILs against private sector eLearning. A core distinction is the contextualisation of learning for Defence. Private sector organisations do not offer information specific eLearning, preferring to structure their eLearning offerings as a course, incorporating assessment to track learning achievements. For example, SAP offers bitesize learning courses on the platform SAP learning, yet this is sequential and utilises assessment (SAP Learning, n.d.). Most private sector comparators require learning to be completed sequentially, whilst it is unlikely that the Technology Code of Practice is used to guide course development. C-SILs avoid third-party content from external course libraries, yet many private sector organisations rely on these libraries to host their eLearning content. For example, Kellogg's, Dell Technologies, and IBM all utilise Credly to offer certified eLearning badges (Credly, n.d.), whilst Mazars delivers online L&D in collaboration with LinkedIn Learning (Mazars, n.d.).

We compared C-SILs to EY's internal digital learning offering, EY Badges, a global programme to upskill EY people with digital capabilities and a transformative mindset needed for the future (EY, n.d.). It comprises digital learning courses that can be combined with on-the-job experiences, with five levels, from learning to platinum. Each EY Badge consists of a set of non-sequential learning courses, which users can complete in any order to satisfy the learning hours requirement (e.g. 15 hours of learning for a Bronze badge). Each badge pulls together learning modules from

different providers, which are accessed via the SuccessFactors Learning Management System. These are curated from a variety of platforms such as Udemy, Skillsoft, Coursera, getabstract, GLOBESMART, goFluent, and EY designed modules. At the end of 2023, there were 227 badges on offer, across 27 topics ranging from AI to sustainability to inclusion, with 500,000+ EY Badges awarded globally since the programme began in 2017. As courses are used multiple times across various badges, and the programme focuses on upskilling all staff, many of the design principles for EY Badges are akin to C-SILs.

DefAc's C-SILs and EY Badges share several common features:

- Design once, use many times.
- Consistent branding.
- Non-sequential learning.
- Access at point of need.
- SME-approved content.
- Bite-sized.
- Self-enrollable regardless of rank.
- Accessible to all 24/7.
- Provides a basic level of proficiency.
- Content is regularly reviewed and updated.
- Able to complete standalone modules or a full course.
- Blended learning.

Despite the similarities between the two offers, there are several key differences:

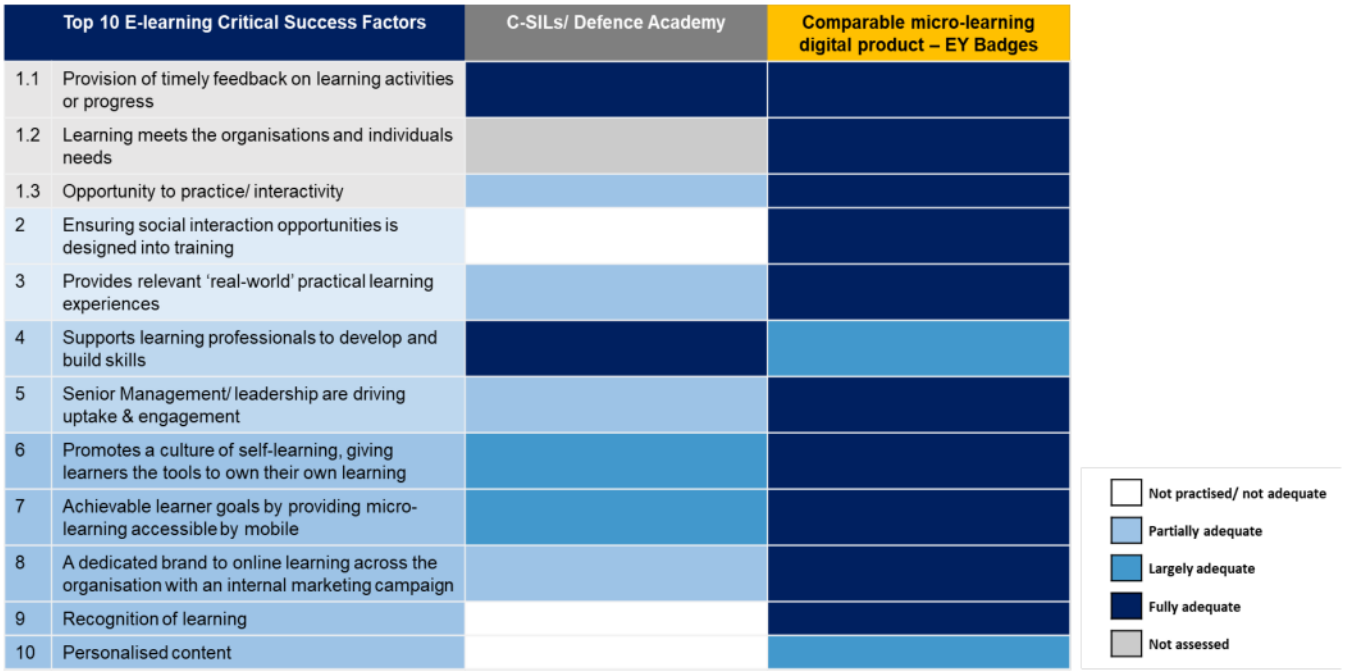
Figure 4: Key differences between C-SILs and EY Badges

	DefAc's C-SILs	**EY Badges**
Course platform	Moodle (more commonly used by academic institutions)	SuccessFactors (encompasses end-to-end talent management)
Assessment	Information specific eLearning content without formal assessment	Learner must pass a formal assessment at the end of each contributory eLearning module
Learning recognition	Does not offer micro-credentials to learners	Offers digital badges. Badges are popular with learners because of the sense of achievement they get from earning a badge, whilst learners feel this gives their learning more credibility, thus returning to complete more badges (Stewart, 2019)
Consistency of product	C-SILs have a standardised 'look and feel' to enable consistency	EY Badges are branded consistently only at the platform level (not each individual course)
Reputation	C-SILs are not yet well-known across the organisation	The programme is well-known amongst employees
Development process	All modules are developed internally by SMEs and avoid use of third-party content	Some courses are developed internally by SMEs and others are procured externally

Content contextualisation	All C-SILs are contextualised for Defence and the MOD	Only a select number of modules will be contextualised
Type of content	Limited to bite-sized eLearning but content is shareable and reusable in other delivery formats	Combines a mix of microlearning and larger courses, whilst some Badges incorporate face-to-face
Proficiency level	Basic proficiency levels only	Learners can work towards an expert level of understanding, even up to degree level with Hult International Business School
Type of learning	Limited to online tests and knowledge checks	Offers an opportunity for peer learning with study groups and sometimes requires learners to submit evidence of application of their learning within their day job

The two programmes, whilst similar, show slight differences, with C-SILs excelling in many of these such as consistency, internal SME development and endorsement, and prominence of bite-sized learning. The C-SIL programme could look to incorporate enhanced peer learning opportunities, and greater learning recognition, although further consideration is needed to address concerns surrounding validity of learning transfer without formal assessment. These conclusions are supported by the performance of the two programmes against the top ten CIPD eLearning critical success factors (CIPD, 2021), shown in Figure 5 below.

Figure 5: The performance of C-SILs and EY Badges against the top 10 e-learning critical success factors.



C-SILs can improve the effectiveness of their digital learning product around the following critical success factors:

1. recognition of learning;
2. personalised content; and
3. ensuring social interaction opportunities are designed into the training.

Overall, compared to the digital learning offerings of private sector organisations, C-SILs are certainly performing at an equivalent standard.

Implications

Based on the organisations considered, C-SILs compare well to equivalent private sector microlearning offerings, particularly around their accessibility for all, defence contextualisation, and exclusion of third-party content. They are 'leading the way' in respect of the digital offering, as none of the compared organisations offer a digital content library for their learning professionals to use. However, other organisations are ahead of C-SILs in their use of peer learning, recognition of learning, and use of video content.

4.3.2. Public sector

Whilst the benchmarking activities largely focused on organisations in the private, academic, and defence sectors, analysis was undertaken to compare C-SILs to public sector activity within the digital learning space.

Firstly, the Human Security C-SIL was compared to the Civil Service Learning (CSL) Emotional Intelligence Course at Administrative Officer Level and assessed against the eLearning Maturity Model where possible[5]. The C-SIL outperformed the Civil Service Learning course regarding learning transfer, providing more effective guidance on course navigation, building student competence in respect of diverse learning capabilities, the robust and integrated nature of its course infrastructure, and the degree of learner support provided. Therefore, the C-SIL compared favourably to Civil Service Learning based on this exercise. Unfortunately, we have been unable to access the LEARN LMS, preventing its inclusion in this benchmarking exercise.

In addition, as part of the research into leading digital learning, the Department for Education's 'Skills Toolkit' was considered, a digital learning platform providing free access to courses to help people build skills and progress in work (Department for Education, 2020). The platform provides introductory, intermediate, and advanced courses through providers e.g. the Open University, FutureLearn, Google Digital Garage, Lloyds Bank, Microsoft, and the Good Things Foundation. Courses are offered entirely online, with a free record of completion for participants. As such, C-SILs positively differ as they do not utilise third-party providers and have a consistent format to enhance shareability within courses, however they do not offer a form of digital certification to recognise learning in isolation (though they are assessed and certified when clustered or put into learning pathways). Whilst this platform is designed for the public rather than internal employees, the 'Skills Toolkit' highlights how other public sector organisations are using microlearning.

[5] See Figure 5 in the appendix for a detailed view of how the CSL e-learning scores against Marshall's e-learning Maturity Model

Other relevant public sector examples include the NHS Leadership Academy Learning Hub (NHS, n.d.b), with bite-sized digital learning courses for NHS staff of all levels, and National Highways' Roads Academy, which combines eLearning modules by third-party providers with in-person collaborative learning, to develop selected future leaders (National Highways, n.d.). The NHS Leadership Academy Learning Hub is equivalent to C-SILs in its aim to increase accessibility of bite-sized learning content to the whole workforce, however it does not possess the same degree of flexibility for use across various learner pathways. National Highways' Roads Academy's microlearning content is more flexible; however, learning is taken from third-party providers, rather than being developed internally.

Implications

C-SILs offer several features and benefits over and above other public sector digital and microlearning offerings. The flexibility and reusability of the C-SIL approach facilitates the delivery of learning in several formats, e.g. standalone, courses, or pathways, compared to other types of microlearning which can are often only able to be used in a specific sequence or format.

4.3.3. Academic institutions

One of the leaders in digital learning offered by academic institutions is the University of Edinburgh, who are using microlearning to complement lectures (La Croix, 2020). Their Centre for Open Learning has developed microlearning as a companion to a series of four lectures on dementia. Students gained access to additional microlearning resources around each lecture, to support them to prepare beforehand, delve deeper afterwards, or catch up on something they missed. The microlearning's compatibility offered integration with the university's virtual learning environment, enabling automated tracking, and reporting of student progress and assessment grades. In a similar way to how bite-sized digital learning complements a face-to-face learning intervention in this example, C-SILs are flexibly used as part of a blended learning pathway, seamlessly incorporated in a virtual learning environment, and widely available as a refresher or introduction.

The University of Portsmouth has used microlearning within their student onboarding programmes, delivering learning covering harassment, sexual misconduct, and microaggressions to all students via bite-sized online courses (University of Portsmouth, 2023). Courses are designed to be completed via mobile devices, including a mix of information, videos, gifs, and quizzes to check how much students have learned, thus enhancing interactivity. Similarly, in the microlearning space, Sheffield Hallam University introduced micro-research as part of their teaching approach, highlighting the shift towards an enhanced number of briefer learning interventions within academic institutions (Glover, 2014). Unlike large-scale research endeavours, micro-research focuses on bite-sized investigations that foster critical thinking and active participation. Compared to these examples, C-SILs are similarly bite-sized and accessible, whilst promoting self-learning and using real-world examples.

Arizona State University is a leader in the digital learning space amongst academic institutions, through their use of virtual reality (Faller, 2018). They developed a biology degree that can be obtained completely online, leveraging VR technology to

give students access to a state-of-the-art lab. Students remotely complete real-world scenarios, from taking blood samples to analysing results. Whilst restrictions may prevent UK Defence from promptly implementing innovative technology such as VR, academic institutions are increasingly using digital learning and microlearning approaches, in a similar way to how DefAc is pursuing greater amounts of bite-sized, digital learning content.

C-SILs are currently different from Academic institution eLearning offerings in several ways, particularly Defence contextualisation, the use of Defence SMEs to generate content, and development in line with the Technology Code of Practice. Academic institutions make better use of new technology, which DefAc could consider how to incorporate , within Defence restrictions.

Implications

DefAc's C-SIL programme is congruent with the microlearning trend, also being pursued by academic institutions. C-SILs compare fairly against the offerings of academic institutions, with accessibility as an important feature, however UK Defence restrictions may limit the degree to which Defence digital learning can keep pace with the level of technological innovation in these organisations.

4.3.4. eLearning providers

The C-SIL learner satisfaction score indicates that C-SILs are highly regarded by employees, with 80% of learners either satisfied or very satisfied. In comparison, eLearning providers score similarly, with Netex leading at 97%, Apolitical scoring 90%, Future Learn scoring 77%, and MindGym scoring 73%[6].C-SILs are performing at industry standard amongst eLearning providers regarding learner satisfaction.

There are several pioneering eLearning providers within digital and microlearning. For example, IBM's SkillsBuild platform offers personalised learning paths, combining AI-driven recommendations with micro-credentials to tailor content to individual needs (IBM, n.d.). The platform offers more than 1,000 courses on cybersecurity, data analysis, and other technical disciplines, in addition to workplace skills, and participants can earn IBM-branded digital credentials. The IBM microlearning offers an enhanced degree of personalisation using intelligent technology, alongside credentials to encourage learning. Yet, as a piece of information-specific learning, C-SILs possess greater flexibility than these IBM courses.

Another organisational example is Duolingo, who produces bite-sized, quick, and focused lessons to support language learning (Duolingo, n.d.). Duolingo uses a gamified interface to keep users motivated, leveraging AI to adapt lessons to learner strengths and weaknesses. C-SILs are similarly bite-sized content, yet Duolingo harnesses AI for personalisation where C-SILs prioritise standardisation. Duolingo's content is gamified, in a similar manner to Attensi & Marston's gamified and immersive digital training app and OMIND's gamified learning tool, both winners of

[6] Netex and apolitical's learner average score is based on the result of a randomly selected ready-to-go e-learning course.

the Learning Technologies Awards (2023), whereas C-SILs do not utilise gamification.

SalesForce, a cloud-based software company, has also developed a programme named Trailhead, with bite-sized Reusable Learning Objects (RLOs) that create learning modules (Salesforce, n.d.). This and the previous examples highlight the bite-sized digital learning that other organisations offer, the efficacy and popularity of this form of learning, and the likenesses that exist between the offerings of these eLearning providers and C-SILs.

This research also assessed the products of a range of eLearning providers (including Netex, Apolitical, Mindgym, Mediazoo, FutureLearn, and Alchemist) that offer ready-to-go or off-the-shelf digital learning like C-SILs, as well as bespoke client solutions. The key differentiators between C-SILs and these ready-to-go options are cost and the contextualisation of content for the MOD. Firstly, the DefAc's C-SILs are significantly cheaper than external eLearning. There are various subscription models, but our research finds that, on average, it will cost £10-30 a course per person on an annual basis from an eLearning provider. This means that 800 eLearning courses for one employee could cost between £8-24k a year. Also, the content within these courses would not be contextualised to Defence or Defence-endorsed, thus losing a core aspect of the appeal of C-SILs. Not only are C-SILs a more cost-effective way of allowing learning to be accessed within a scalable approach compared to ready-to-go eLearning providers courses, but they are most effective in meeting the needs of learners and learning professionals.

Other ways in which C-SILs differ from off-the-shelf eLearning:

- C-SIL content can be merged into an existing course on the Moodle LMS, increasing the reusability and shareability of C-SILs across Defence. This is not possible with an eLearning provider's course unless Defence buys IP rights.
- C-SILs are MOD branded.
- The MOD owns the intellectual property rights of C-SIL content. Future content changes are easier, to ensure that the training remains current and relevant to employees.
- C-SILs offer enhanced flexibility. They do not require sequential completion of modules and can be freely utilised across the four different pathways.
- eLearning providers incorporate assessment into their courses.

Therefore, the DefAc's approach of developing C-SILs as opposed to pursuing off-the-shelf content from eLearning providers fits the DefAc's needs, as C-SILs outperform the off-the-shelf equivalents. Also, C-SILs benchmark positively against the leading digital and microlearning offerings of eLearning providers.

Implications

C-SILs are aligned to the digital and microlearning offerings of eLearning providers, bearing similarities regarding accessibility and readily available bite-sized learning, yet leading comparators have incorporated greater gamification and AI into their offerings. The C-SIL approach is a cost-effective way of allowing learning to be

accessed in a scalable approach, with many additional features such as being MOD contextualised and endorsed.

4.3.5. International Defence organisations

The benchmarking research looked at the digital learning offerings of several International Defence Organisations: the Royal Danish Defence College, the Royal Military College of Canada, the Swiss Armed Forces and NATO. Our analysis unveiled several key insights[7].

1. Switzerland, Denmark, and Canada do not offer a digital learning offering similar to CSILs.
2. Canada does not have a central team that manages digital learning across the entire force like the DefAc.
3. Canada, Switzerland and the DefAc use similar authoring tools and LMS.
4. Canada uses external libraries and third-party content.
5. The DefAc has more courses on their LMS than Canada, Switzerland, and Denmark.

Canada's digital learning approach consists of many different training centres that each independently commission the production of eLearning. Canada uses a variety of external content libraries, such as Udemy, Coursera, LinkedIn Learning, and Pluralsight, with a combination of Moodle and Cornerstone LMS to deliver learning content. eLearning is created both in-house, and by external suppliers, with 3,500 courses currently available. Whilst Canada does not currently offer a digital learning proposition akin to C-SILs, Royal Military College of Canada personnel have expressed interest in adopting the C-SIL methodology of pursuing more digital, reusable, and shareable content in the future.

Similarly, the Swiss Armed Forces do not currently employ a digital learning concept akin to C-SILs. They use GlobalTeach as their LMS, and Articulate, Captivate, Storyline and Vyond as authoring tools. Switzerland employs a larger number of internal eLearning developers (139) compared to those working on the development of C-SILs and has more courses available (4,667) despite there being a smaller number of end users (147,000). Switzerland is the only nation we have been able to benchmark the C-SILs learner satisfaction score (80%) against, outperforming the Swiss Armed Forces learner satisfaction score which stands at 52.5%.

The Royal Danish Defence College offers modular eLearning that is akin to C-SILs in the sense that it is segmental. The Royal Danish Defence College employs five eLearning developers, and uses Moodle as their LMS, like the MOD.

Although not a national defence organisation, NATO are leading in the digital microlearning space through their eLearning networking app, NeNA (Dolowitz et al., 2022). This app is designed to provide just-in-time eLearning content, create socialisation, and deliver personalised, self-directed microlearning that meets the changing needs of the younger workforce. The 'Affinity spaces,' areas of the app

[7] A chart of our detailed findings is shown in Figure 9, in the appendix.

dedicated to socialisation, allow learners to engage in discussions, exchange best practices, seek, and provide peer support – this is an area where NeNA and C-SILs differ. NATO's eLearning app NeNA exemplifies some of the digital microlearning activity that is taking place within the international Defence space.

Implications

Albeit using a limited sample size, this benchmarking activity finds that C-SILs are outperforming eLearning offerings in other similar International Defence organisations, with many of them not yet offering digital learning akin to C-SILs though voicing their desire to move in this direction soon.

4.4. Summary of findings

Based on the available information presented in Section 2 – External comparison data, the following observations are made.

- The DefAc's C-SILs are leading the way in their adherence to a clear set of design standards for digital learning beyond a set of design principles.
- C-SILs lead in providing a library of content for learning professionals to utilise in the design of their learning interventions.
- C-SILs compare well to equivalent private sector microlearning offerings, particularly regarding their accessibility for all, defence contextualisation, and exclusion of third-party content. However, other organisations are ahead of C-SILs in their use of peer learning, recognition of learning, and use of video content.
- C-SILs offer many unique features and benefits as a microlearning product in comparison to the public sector organisations considered. The flexibility and reusability of the C-SIL approach provides benefits in terms of being vehicles for learning in a number of formats, e.g. standalone, courses, or pathways, compared to other types of microlearning which are less able to be used in as many ways. It is worth noting that this approach works for the MOD and Defence environment where everyone can design learning, but it would be less applicable to a centralised learning design function.
- Microlearning is being pursued by academic institutions, and the DefAc's C-SIL programme is congruent with this trend. C-SILs compare fairly against the offerings of academic institutions, with accessibility as an important feature.
- UK Defence restrictions may limit the degree to which Defence digital learning can keep pace with the level of technological innovation in other organisations.
- C-SILs are aligned to the digital and microlearning offerings of eLearning providers, regarding accessibility and readily available bite-sized learning, yet leading comparators have incorporated greater gamification into their offerings.
- The C-SIL approach is a cost-effective way of allowing learning to be accessed in a scalable approach. It is cheaper in the long run than buying off-the-shelf learning and allows for MOD contextualisation and endorsement.

- C-SILs are outperforming eLearning offerings in other similar International Defence organisations, with many of them not yet offering digital learning akin to C-SILs.

4.5. Overall key takeaways

a. C-SILs are following the trend into micro learning and digitally enabled learning. This pathway is set to continue and the C-SIL approach aligns with this trend.

b. C-SILs should continue to be built in their current format as a design standard for others to adopt and enable a high-quality format to provide wider Whole Force access to content.

c. C-SILs stand up well against equivalent external digital and microlearning offerings, with particular importance placed on their accessibility, flexibility, reusability, Defence contextualisation, exclusion of third-party content, and cost effectiveness.

d. There are potential improvements, included in Section 5 of this report, which would be beneficial for the C-SILs to be of the highest quality, keep in line with design updates and make use of innovative approaches to learning where possible in the Defence environment.

5. Recommended next steps

This analysis suggests several follow-on activities around C-SILs, and their infrastructure and support.

5.1. Recommendations for C-SILs

- Explore the opportunity to provide recognition to learners on completion of an individual C-SIL, as opposed to whole course completion.
- Build clearer and broader accreditation and badging into the multiple approaches of C-SILs such as through learning pathways and courses.
- Consider how learner social interaction can be built into C-SILs.
- Explore the potential for enhancements to C-SIL learning content, such as gamification or use of AI.
- Consider how to build innovative methodology into C-SILs, where possible in accordance with Defence restrictions, to bring into line with best-in-class digital learning.
- Plan for C-SIL content to be both current and future-focused, staying ahead of the trends to enable learning to be available at point of need.

5.2. Recommendations for infrastructure and support around the C-SILs

- Consider how to involve more people from across Defence in developing and owning C-SIL content – to support engagement and content development.
- Gather feedback from other MOD courses and eLearning to provide comparison data with the C-SIL learner feedback.
- Develop an evaluation strategy for the C-SILs that goes beyond DSAT InVAL forms, to regularly evaluate learning impact and effectiveness.

Consider further change adoption, business readiness, stakeholder, and communications engagement activities to gain buy in for C-SILs, including the development of user experience journeys and personas.

6. Source materials considered in this paper

Several source materials, listed below, were accessed to inform this paper.

a. Desk review
   - Apolitical eLearning courses
   - EY Badges
   - Future Learn eLearning courses
   - InVal data for all current active C-SIL courses
   - MindGym eLearning courses
   - Netex eLearning courses
   - Project CODEX communications (various)
   - Royal Danish Defence College
   - Swiss Armed Forces

b. Interviews
   - Amanda Stenhaug – Senior Lecturer in the Defence Academy of the United Kingdom Business Skills Centre
   - Caroline Moore – Training, Technology Enhanced Learning (TTEL) at HQ Combat Manoeuvre Centre, Bovington, Dorset
   - David Tandy and Danielle Gee - (SO1) eDT Team (Defence Academy of the United Kingdom)
   - Dr Jheela Jones – Canadian Defence Force Learning Academy
   - Emily Brooke – C1 Digital Content Manager, SpLD Advisor, Defence Capability Management School, Defence College for Military Capability Integration, Defence Academy of the United Kingdom
   - John Owens, Navy on Project SELBOURNE
   - Lynda Clements - B2 AHd TEL & Bus Spt (Defence Academy of the United Kingdom)

c. Internal MOD courses
   - Active Bystander Fundamentals v2 (DLE)
   - Annual Mental Fitness Brief (DLE)
   - Climate Change Awareness and Defence Resilience Course (CCA&DR) (DLE)
   - Emotional Intelligence Course at Administrative Officer Level (CSL)
   - Human Security C-SIL Course (DLE)
   - Personal Perspectives (DLE)

d. External publicly available sources
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The following data sources were not accessed as part of this discovery process: interviews with other military entities in the 5 Eyes Community, Sandhurst, quantitative data related to other MOD eLearning, the LEARN LMS platform, and external standards.

7. Appendix

Definition of Terms

C-SIL (Content-Specific Information Learning) – refers to DefAc's design standard of creating reusable, shareable, modular content in the form of digital microlearning that can be used by learning professionals in the design of their learning interventions across four different ways: 1. a standalone module, 2. as modules within a DSAT course, 3. as a whole study unit of several C-SILs (a cluster), or 4. to support a blended learner journey.

Microlearning – an educational strategy that focuses on learning new information in small units. This approach to learning breaks down topics into short-form, standalone units of study that the learner can view as many times as necessary, whenever and wherever they need.

Design Standards – an obligatory set of established uniform design requirements which must be met on completion of the design.

Design Principles – guidelines, values, and considerations that designers apply to make easy-to-use designs that frame design decisions and support consistency in decision making.

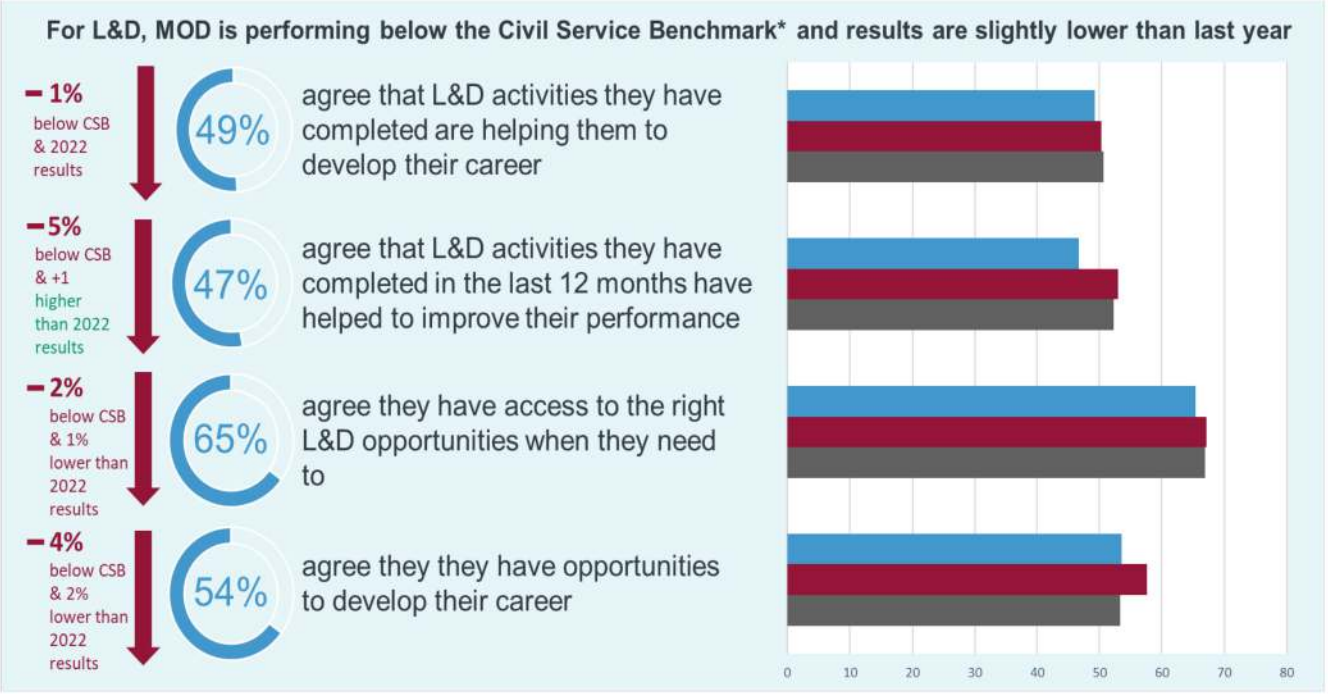
LMS (Learning Management System) - a software application for the administration, documentation, tracking, reporting, automation, and delivery of educational courses, training programs, materials, or learning and development programs.

WCAG / **AA+ Accessible -** AA is the second level of accessibility compliance defined by the Web Content Accessibility Guidelines (WCAG). Meeting AA standards means that a website is reasonably accessible to a broad range of people with disabilities, including those with more common disabilities like blindness, low vision, deafness, and mobility impairments. AAA is the highest level of accessibility compliance defined by WCAG. Meeting AAA standards requires a higher level of commitment to accessibility, as it addresses a broader range of disabilities, including those that are less common or more severe.

TCOP – The 'Technology Code of Practice' is a set of criteria to help government design, build and buy technology

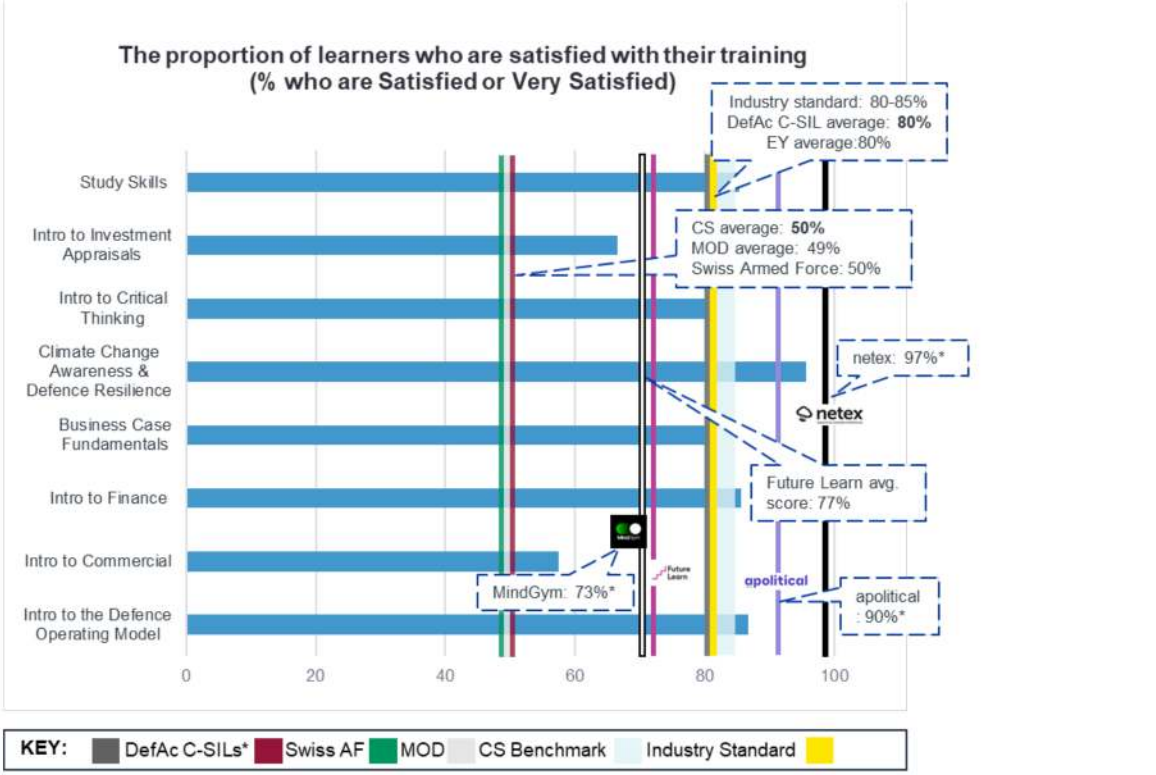
Glossary of Figures

Figure 6: Breakdown of MOD's 2023 L&D performance against the Civil Service Benchmark



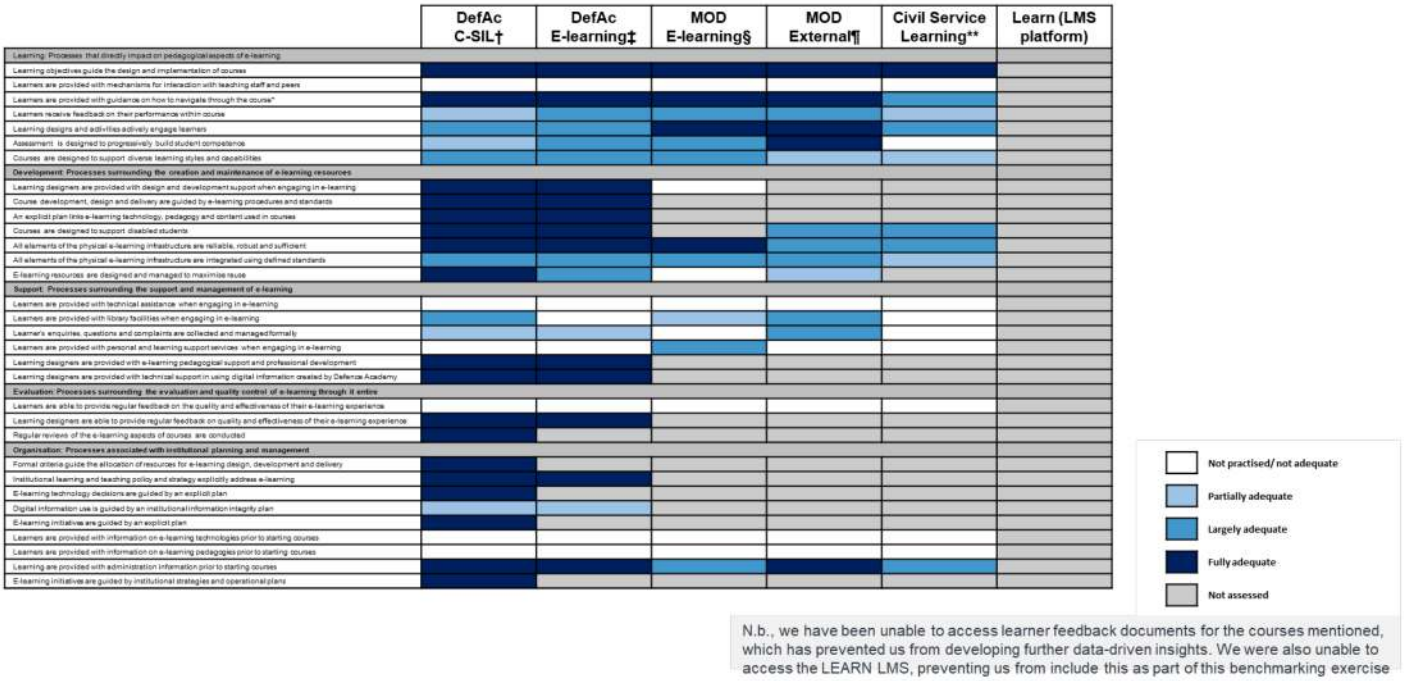
*CS Median and Mean score have stayed the same or improved by one percentage point from 2022 to 2023

Figure 7: Breakdown of the C-SIL learner satisfaction score compared against other organisations.



- Based on the InVAL question: 'Was the learning a good use of your time?'
- *Netex and apolitical learner average score is based on the result of a randomly selected ready to go e-learning course

Figure 8: Detailed view of how the types of MOD digital learning score against Marshall's eLearning Maturity Model (2013)



N.b., we have been unable to access learner feedback documents for the courses mentioned, which has prevented us from developing further data-driven insights. We were also unable to access the LEARN LMS, preventing us from include this as part of this benchmarking exercise

Figure 9: International Defence Organisations L&D and digital learning data

Comparator	DefAc's C-SILs	Royal Danish Defence College	Royal Military College of Canada	Swiss Armed Forces
C-SIL or concept similar to C-SILs	**Yes**	Yes – Modular eLearning	No	No
Number of courses available	Y1:200; Y2: 150 Y3: 200-300; Y5: 50 **Total – 800 at end of 2027**	1200 (Open Access) 80 (Restricted/ internal)	3,500	4,667
Avg. Learner Satisfaction Score	80%	Unknown		52.5%
Number of eLearning developers	6	RDDC ED Center: 5	In-house & external suppliers	139 - internal Unknown – external
Number of users/ learners	340,000	90,000	Unknown	147,000 (+ militia)
LMS	Moodle	Moodle	Cornerstone SBX Moodle for RMC EN/FR	GlobalTeach®
Authoring tool	Articulate	Unknown	Articulate 360; Adobe Captivate; Domiknow; One, ELB Lectora	Articulate, Storyline, Captivate & Vyond
Avg. L&D spend	£140	Unknown	Unknown	£2.7M
External content libraries	None	None	Udemy; Coursera; Linkedin Learning; Pluralsight	None
Avg. learning hrs per person	Unknown	Unknown	Unknown	Recruits (10-12 hours), Prof. Soldiers (4-5 hours), Civil Service (2-3 hours)
Proportion of learning delivered	F2F: Unknown Remote: Unknown Blended: Unknown	F2F: Unknown Remote: Unknown Blended: Unknown	F2F: Unknown Remote: Unknown Blended: Unknown	F2F: 85% Remote: 10% Blended: 5%