Training Grant Framework

Learning Content and Training Considerations

MiMi Bernal-Graves

LMS Program Manager

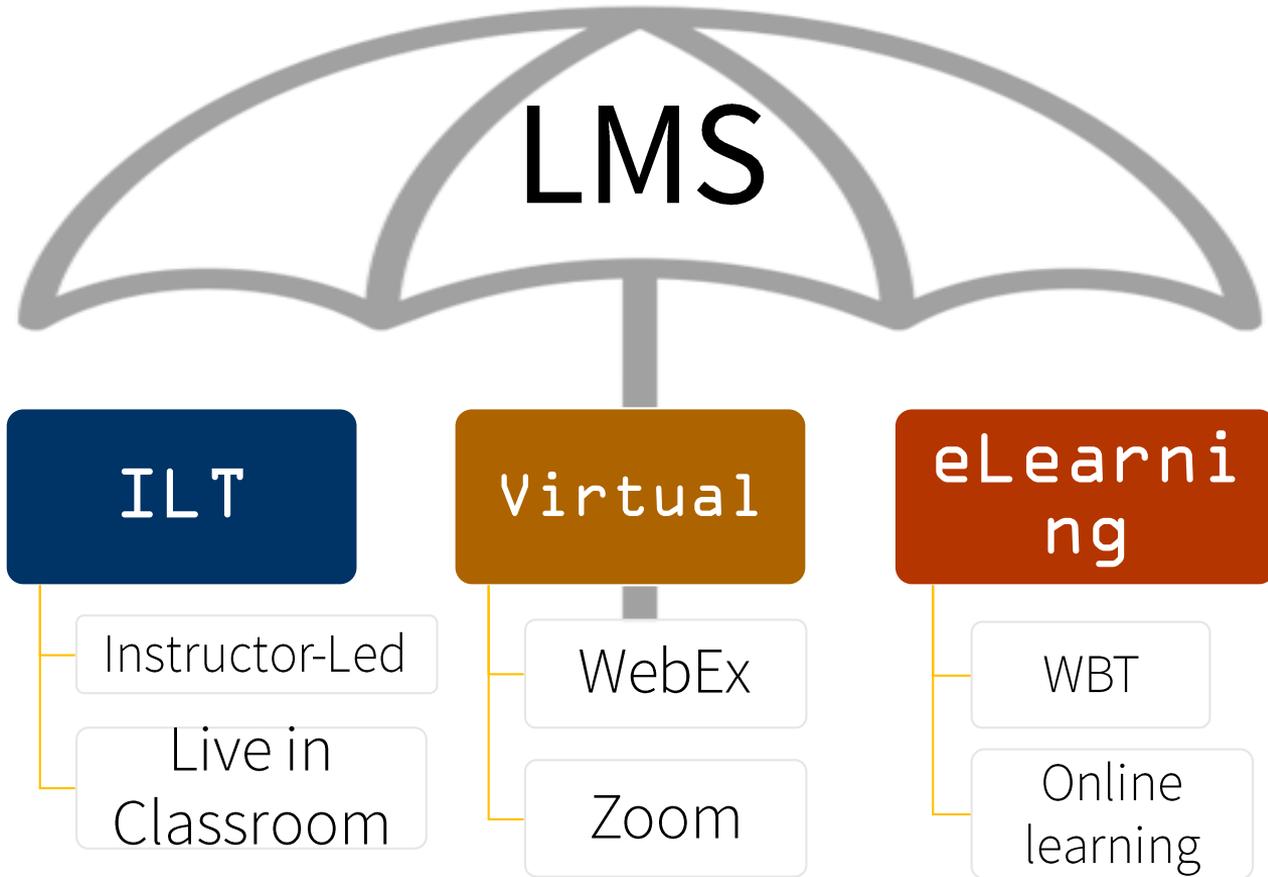November 2021

TRIMET

Agenda

- Curriculum and instructional design: what matters?
  - Best Practices
  - Federal and State laws

- LMS requirements

- Questions?

Management System (LMS)

TriMet Priority Areas: Diversity, Equity, and Inclusion

LMS

ILT	Virtual	eLearning
Instructor-Led	WebEx	WBT
Live in Classroom	Zoom	Online learning

Navigating the
Learning Landscape
can be……

Overwhelming.

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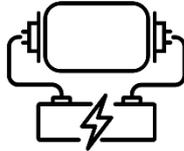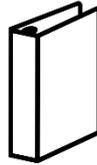Created by SBTS from Noun Project
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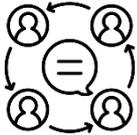Created by Vectors Market from Noun Project
Created by Adrien Coquet from Noun Project
Created by Gan Khoon Lay from Noun Project
Created by Adrien Coquet from Noun Project
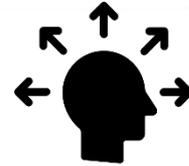Created by Made x Made from Noun Project
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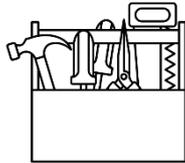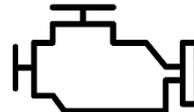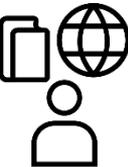
Leveraging industry standards and best practices can help.

Building the foundation

Created by Adrien Coquet
from Noun Project

Prepare

Design and Development
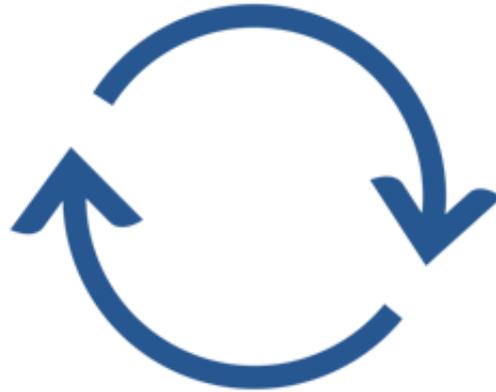
Roll-out and Deploy

LMS
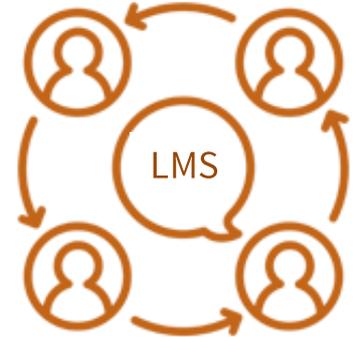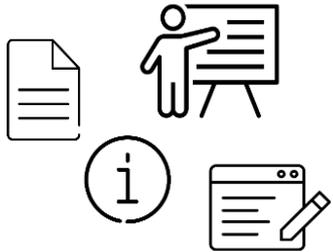
Icons created by Dant, Patrick Snyder, Tee Yang, Herbert Spencer, Janina Aritao, Adrien Coquet, Pictohaven, Made x Made, EliRatus Santrii Icon, TMD, Royal Icon, Susannanova, Amiryshakiel, and Eucalyup from Noun Project

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Know your audience

Who are your learners?
What are their needs?

Created by Pause08
from Noun Project

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Design Matters

Questions to ask…

- How is the training solution supporting learners and the organization?

- How are equity, learner-centered design, engaging content, and adult learning best practices incorporated the training?

- Are the learning objectives appropriate and measurable?

- How will we best measure learner knowledge retention?

Created by Juicy Fish
from Noun Project

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Creating Learning Content

- Training must meet federal and state ADA and copyright requirements.

- Training must include Universal Design principles.

- Training Assessment and learner exam:
  - Vetted by TriMet and the partner organization.
  - Assessment of both learner and the training.

- Sustainability and maintenance of learning content is outlined.

Created by Nithinan Tatah
from Noun Project

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eLearning compatibility with LMS

- Build modules and courses per specifications for the primary TriMet LMS.
  - SCORM 1.2 standards, Oracle on Prem LMS

- Integrate developed content into multiple delivery methods (Instructor led, web based training, etc.).
  - Ensure learner enrollments are tracked and managed via the LMS for consolidated reporting and regulatory requirements.

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Appendix
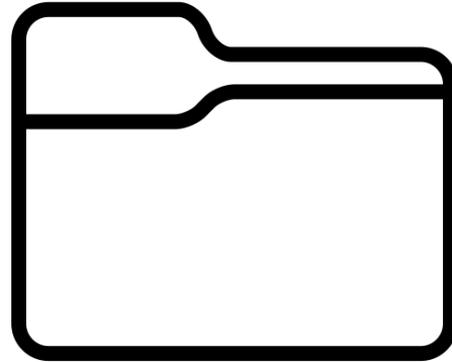
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Why LMS?

Agency-wide support: learning content and eLearning

Efficiency: administration of training through one system

Role-based training: ability to monitor learner progress

Reporting and metrics: support regulatory requirements

What is an LMS: https://elearningindustry.com/top-8-benefits-of-using-learning-management-systems

What an LMS is not…

Content Management: ownership of learning content and updates to be maintained by division or department

Enterprise Content Management (ECM): Document Storage

Records Governance: Official Copy of documentation

Instructional Design standards and best practices: Foundational skills need to be developed, takes training and time

Tips for engaging adult learners

1. Make it relevant!
2. Include activities.
3. Consider the experience and educational background of the adult learners.
4. Integrate emotionally-driven content.
5. Keep cognitive overload in mind.
6. Use avatars and storytelling.
7. Remember that practice makes perfect.
8. Use aesthetically pleasing design elements.

Created by b farias
from Noun Project

https://elearningindustry.com/11-tips-engage-inspire-adult-learners
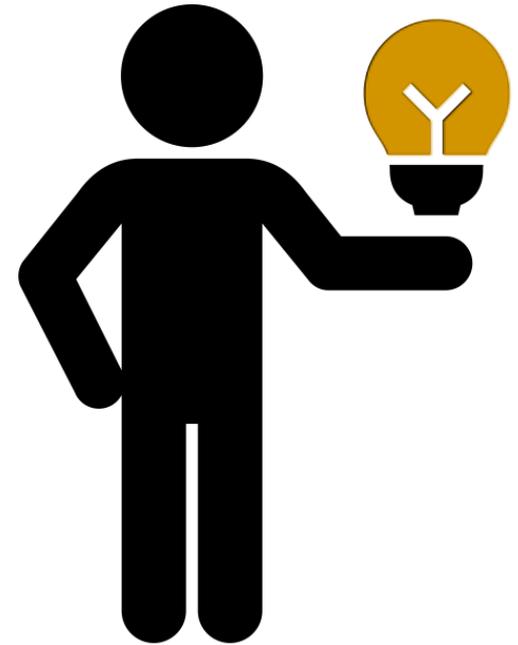
Creative Services
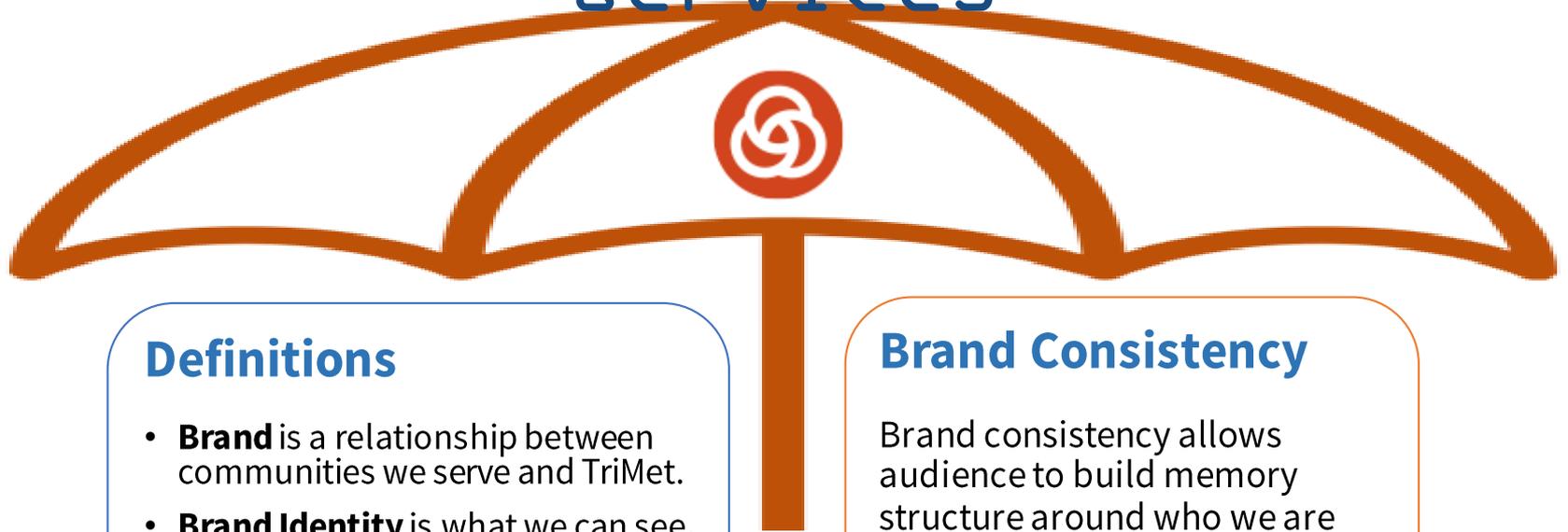
Definitions

- **Brand** is a relationship between communities we serve and TriMet.
- **Brand Identity** is what we can see.
- **Branding is a process** of building awareness and to extent – loyalty**.**

Brand Consistency

Brand consistency allows audience to build memory structure around who we are and what value we have to offer.

LMS (OLM) and eLearning request intake process

TriMet Divisions

Chief Operating Officer

Safety & Security

Maintenance Operations

Transportation Operations

Information Technology (IT)

Engineering & Construction

General Manager

Legal Services

Finance & Admin Services

Public Affairs

LRHR

E3 Program

Received: Request for LMS support (email, Service desk, etc.)

Discovery meeting (Division stakeholders and LMS Program): is an LMS or eLearning solution needed?
- Who is the Executive Sponsor?
- What is the scope, schedule, and budget?
- What is the problem/opportunity?
  - What is the current state?
  - What is the desired state
- What are the business drivers?
- What is the desired timeline for the request?

Yes

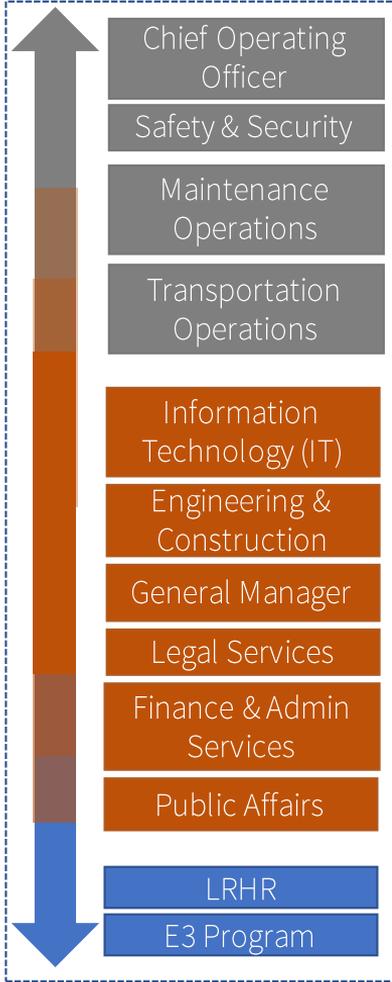**Evaluate:** Is the business priority high?
- What strategic context is important to know?
- Is there a regulatory or compliance need for an eLearning/LMS solution?
- Who is the Audience (demographics and size)?
- What is the value of the LMS/eLearning solution to the organization?
- What communications may be needed to the organization for this request to be successfully implemented?

No → **Recommend non-LMS solution:**
- Provide self service options for stakeholders

END

No

Yes → **Determine:** Is there an in-house LMS solution available or can one be built?
- Do we have in-house capability (skills, tools, staff resources, etc.)?

Yes   **No**

No → **Log request (Jira)**
- As LMS project backlog for future planning. Move to Learning Needs Analysis upon project start

Pursue external solution:
- Division stakeholders utilize vendor or external services

END

Initiate: Learning needs analysis and allocate resource to build in house
- Begin learning needs analysis
- What Learning Objectives need to be met?
- What context is needed to be successful with LMS solution or eLearning solution.
  - What is the shelf life of the training solution ?
  - How will solution be sustained?
- What tasks need completed by the LMS program and Division stakeholders?
- What concepts need conveyed?
- Is there learning content available or does it need created?
- Knowledge retention: How will we know LMS solution is successful? (examination, evaluation, etc.)

Implement LMS/eLearning solution.   **END**

Training, Learning and Development

Adult Learning or andragogy

The concept or study of how adults learn and how it differs from children. It aims to show how adult learning is distinct and identify the learning styles which suit them best.

Behaviorist Theory

A learning theory that only focuses on objectively observable behaviors and discounts any independent activities of the mind. Behavior theorists define learning as nothing more than the acquisition of new behavior based on environmental conditions

Connectivism Learning Theory

A theoretical framework for understanding learning in a digital age. It emphasizes how internet technologies such as web browsers, search engines, wikis, online discussion forums, and social networks contributed to new avenues of learning.

Cognitive Theory

A broad theory that explains thinking and differing mental processes and how they are influenced by internal and external factors in order to produce learning in individuals. Cognitive processes are: observing, categorizing, and forming generalizations about our environment.

Constructivist Theory

States that knowledge can only exist within the human mind, and that it does not have to match any real world reality (Driscoll, 2000) . Learners will be constantly trying to develop their own individual mental model of the real world from their perceptions of that world.

Social Learning Theory

States people learn from one another, via observation, imitation, and modeling.
The theory has often been called a bridge between behaviorist and cognitive learning theories because it encompasses attention, memory, and motivation.

Source: Wikipedia.com, this is not an exhaustive list of theoretical frameworks

Andragogy - adult learning

Workplace learning

Maturing self-concept	Increasing experience	Readiness to learn	Shifting application & orientation	Internal motivation to learn
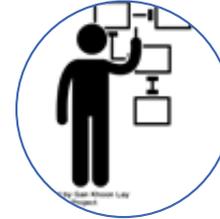
https://www.cornerstone.edu/blogs/lifelong-learning-matters/post/a-simple-easy-to-understand-guide-to-andragogy

Noun project icons: Gregor Cresnar, Adrien Coquet, Tee Yang, Gan Khoon Lay, Nithinan Tatah

Learning styles - overview

Visual (Spatial)	Aural (Auditory Musical)	Verbal (Linguistic)	Physical (Kinesthetic)	Logical (Math)	Social (Inter-personal)	Solitary (Intra-personal)	Naturalistic
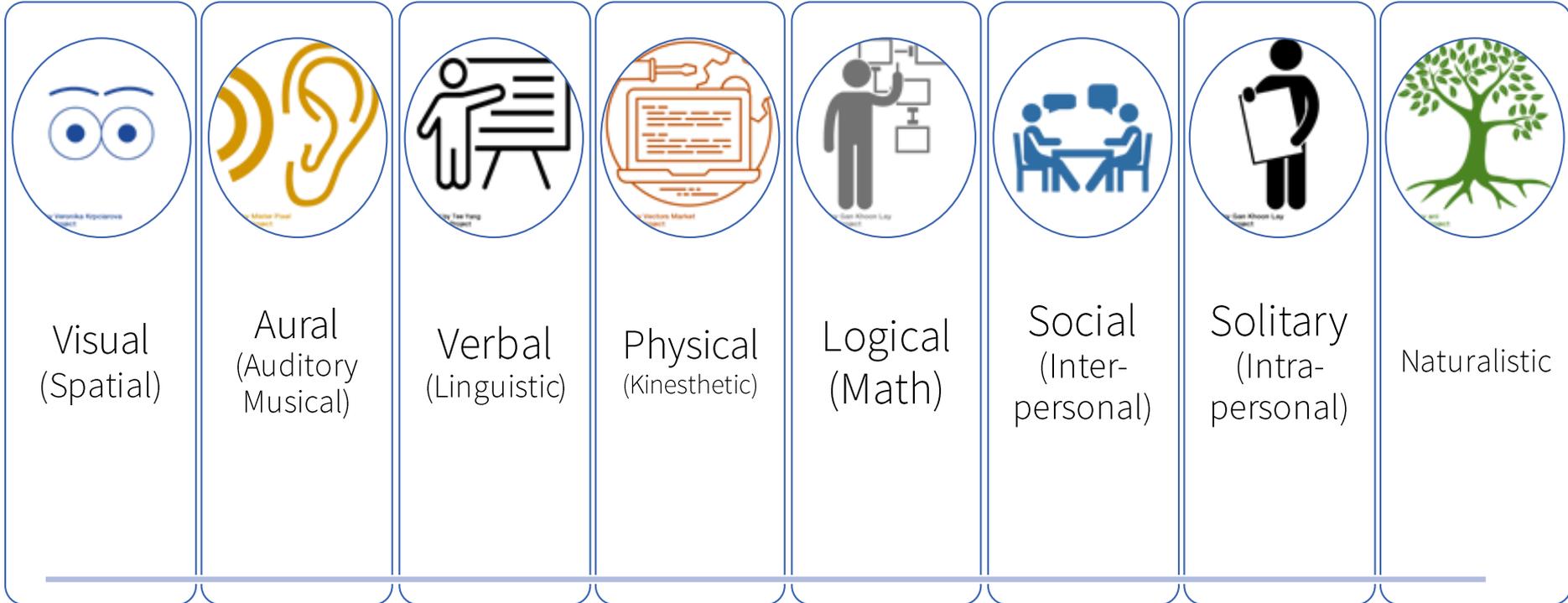
Learning Objectives

How do you write learning objectives

Created by Gan Khoon Lay
from Noun Project

https://learninginnovation.duke.edu/blog/2017/03/learning-objectives/

Writing learning objectives

1 **Learning objectives begin with the phrase:**
- "At the conclusion of this *<class, module, activity>* participants will be able to…"

2 **Connect step one with an action verb**
- communicate the performance by the learner. Use verbs which describe an action that can be observed and that are measurable within the teaching time frame (e.g., via a post-test).

3 **Conclude with the specifics**
- What will the the learner will be doing when demonstrating achievement or mastery of the objectives. Stress what the participant will walk away from the activity with.

Stairs by Yasser Megahed from the Noun Project

BLOOM'S TAXONOMY

KNOWLEDGE	COMPREHENSION	APPLICATION	ANALYSIS	EVALUATION	CREATION
videos documents assets	tests assessments questions	simulations role playing learning games	problems forums advice	ratings appraisals mentoring	reviewing collaboration planning
define repeat record list	translate restate describe explain identify	interpret apply use demonstrate illustrate schedule	distinguish analyse test compare debate question appraise	judge evaluate consider rate compare score choose measure	create devise imagine compose propose plan set up prepare organise
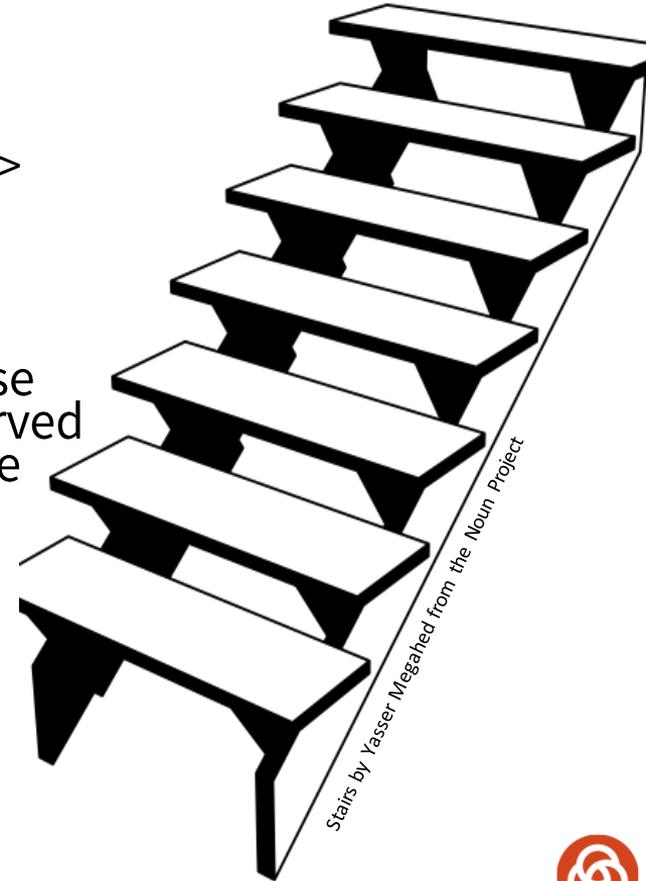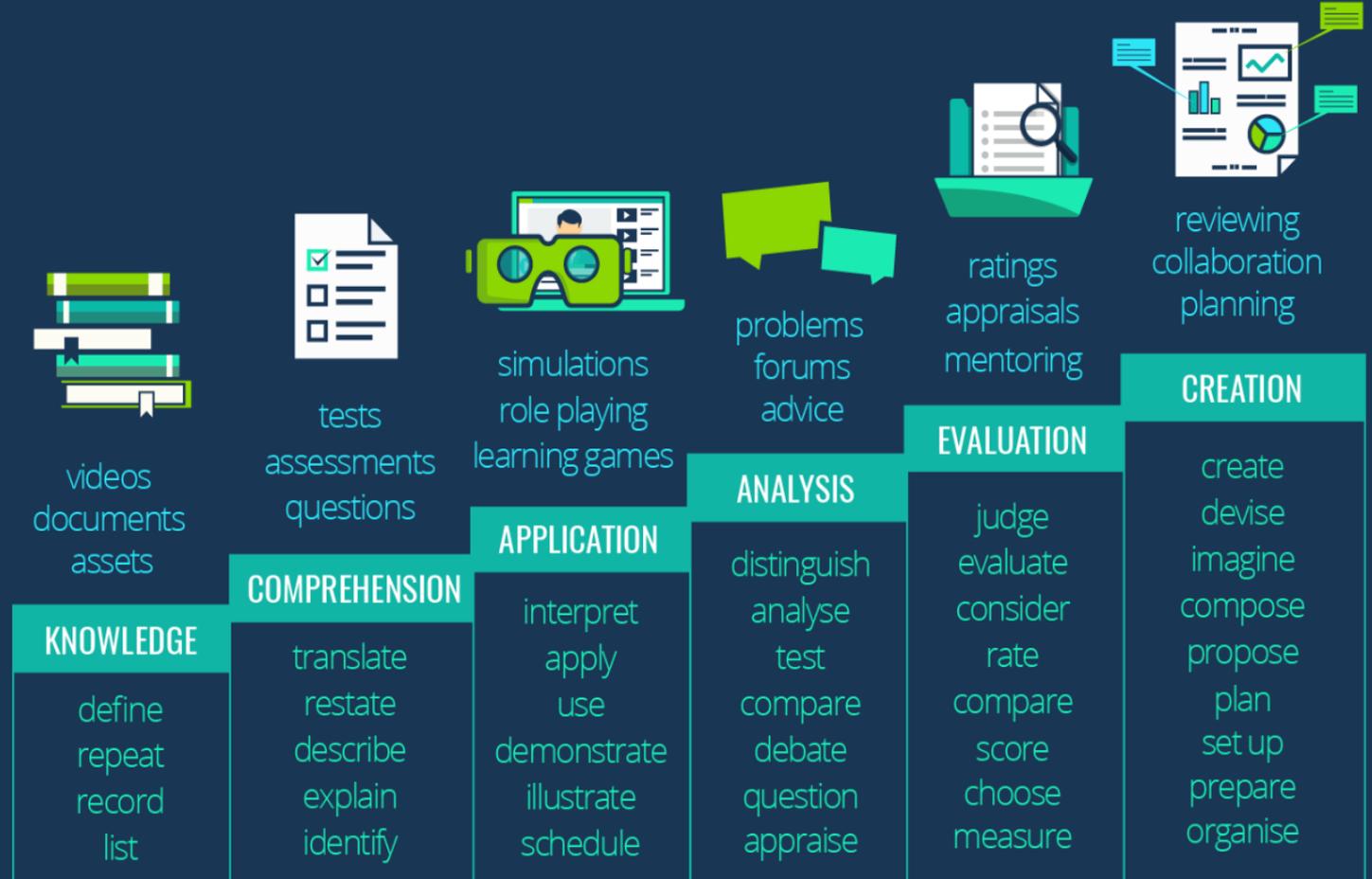
Learning Objectives
Blooms Taxonomy, revised

Learning objective(s) development and framework

Level 6	Can the learner create a new product or point of view?	assemble, construct, create, design, develop, formulate, write
Level 5	Can the learner justify a stand or decision?	appraise, argue, defend, judge, select, support, value, evaluate
Level 4	Can the learner distinguish between different parts?	appraise, compare, contrast, criticise, differentiate, discriminate, distinguish, examine, experiment, question, test
Level 3	Can the learner use information in a new way?	choose, demonstrate, dramatise, employ, illustrate, interpret, operate, schedule, sketch, solve, use, write
Level 2	Can the learner explain ideas or concepts?	classify, describe, discuss, explain, identify, locate, recognise, report, select, translate, paraphrase
Level 1	Can the learner recall or remember the information?	define, duplicate, list, memorise, recall, repeat, state

https://www.niallmcnulty.com/wp-content/uploads/2019/09/ICTZA4.5.jpg

Creating
Evaluating
Analysing
Applying
Understanding
Remembering

Writing Learning Objectives
Simple as 1, 2, 3!

1 **Learning objectives begin with the phrase:**
- "At the conclusion of this *<class, module, activity>* participants will be able to…"

2 **Connect step one with an action verb**
- communicate the performance by the learner. Use verbs which describe an action that can be observed and that are measurable within the teaching time frame (e.g., via a post-test).

3 **Conclude with the specifics**
- What will the the learner will be doing when demonstrating achievement or mastery of the objectives. Stress what the participant will walk away from the activity with.

Learning objective example from the TriMet E3 Program course "Business Writing that Works"
- At the end of this workshop, you will be able to explain the value of good written communication.

Bloom's Taxonomy: *Level of understanding, Increasing difficulty*

Level of understanding, Increasing difficulty

6. Creating: Can the learner create a new perspective?
Action verbs: assess, compare, conclude, contrast, critique, differentiate, examine, experiment, justify, judge, test, solve, question.

5. Evaluating: Can the learner justify a stand or decision?
Action verbs: Argue, combine, compose, defend, design, evaluate, formulate, invent, judge, plan, revise, select, support, value.

4. Analyzing: Can the learner distinguish between different parts?
Action verbs: Analyze, categorize, compare, contrast, criticize, debate, distinguish, examine, experiment, investigate, sort, question.

3. Applying: Can the learner use the information in a new way?
Action verbs: Apply, build, construct, choose, demonstrate, interpret, modify, operate, produce, report, sketch, schedule, solve, use, write.

2. Understanding: Can the learner explain ideas or concepts?
Action verbs: Describe, discuss, estimate, explain, identify, locate, match, paraphrase, predict, recognize, report, translate.

1. Remembering: Can the learner recall or remember the information?
Action verbs: Define, duplicate, draw, identify, label, list, locate, memorize, name, outline, recall, recite, record, repeat, select, state.

Learning Objectives, Bloom's Taxonomy, and Learning Sources

Level: Learning sources may be:

1. Remembering
People, events, recordings, dictionary, television shows, definition, text reading, magazine articles

2. Understanding
Analogy, speech, collage, drawing, poster, story, summary, outline, photograph, tape, recording, cartoon, diagram

3. Applying
Diagram, sculpture, photograph, forecast, illustration, list, project, puzzle, cartoon, films

4. Analyzing
Survey, syllogism, model, conclusion, graph, argument broken down, questionnaire, report

5. Evaluating
Poem, article, book, report, story, play, invention, cartoon, experiment, song, game, set of rules or standards, principles

6. Creating
Editorial, conclusion, valuing, self-evaluation, group discussion, recommendation, survey

eLearning design: Content

Need to have, the "Do's"

- Do identify how the content will be used on the job.
- Do identify the repercussions of not knowing a piece of information.
- Do **ensure** that **every piece** of information supports the learning objectives.

Nice to have, the "Don'ts"

- Don't be convinced that everything is important.
- Don't include "nice-to-know" content as filler.
- Don't forget about your audience.
- Don't forget to do an analysis of what information is needed for the job.

https://community.articulate.com/articles/the-dos-and-don-ts-of-separating-need-to-know-from-nice-to-know

eLearning design
Basic course structure

1. Welcome
2. **Instructions:** The "how."
3. **Introduction:** The why and "What's in it for me?"
4. **Objectives:** learner roadmap.
5. **Content:** Build your main course, if necessary, chunk it into lessons (intro, content, assessment, and summary).
6. **Assessment:** learner knowledge retention.
7. **Summary:** Revisit course objectives stated up front.
8. **Resources:** Offer additional content or resources that reinforce the course material.
9. **Exit:** Give final instructions on how to exit the e-learning course.

https://community.articulate.com/articles/the-dos-and-don-ts-of-separating-need-to-know-from-nice-to-know

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eLearning Content and Delivery

Create WBT

Created by Egon Låstad
from Noun Project

Authoring software:
Articulate Storyline
File output: SCORM

Store WBT

Created by worker
from Noun Project

WBT content library
(SCORM file storage)

Access WBT

Created by Gan Khoon Lay
from Noun Project

Learner logs in to
LMS - completes
WBT module

eLearning Content and Delivery

Create

Created by Egon Låstad
from Noun Project

eLearning Authoring software, output: SCORM File

SCORM(Shareable Content Object Reference Model)
- Technical standards for eLearning software products.
- Industry standard for eLearning interoperability.
- Governs how online learning content and Learning Management Systems (LMSs) communicate with each other.

NOTE: SCORM does not speak to instructional design or any other pedagogical concern — it is purely a technical standard.
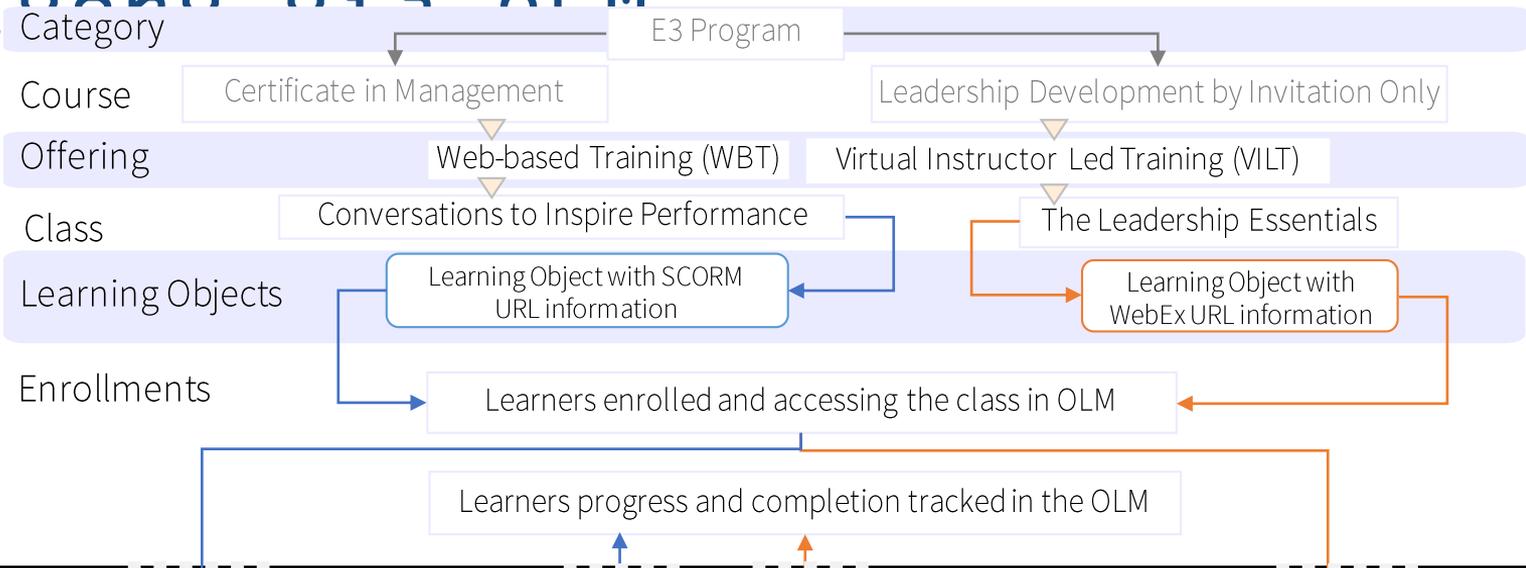
LMS (OLM) issue escalation process

Start
User request received (email to LMS inbox or HELPDESK ticket)

Evaluate: Is the support request for help with OLM product functionality?

No

Yes

User Support Request

User Feature Request

Evaluate: does the feature request exist on the project plan, or is it critical it is added to the project plan?

No

Yes

Respond: acknowledge support request received. Assign Jira ticket to LMS team and support user through resolution.

Close
User request

Evaluate: Is the support request something TriMet IT Oracle team can support?

No

Respond: LMS Program team responds to user and consults on potential work around or interim solution.

Yes

Add Detail: to DATABASE project backlog for assignment and resolution (including Oracle Service Request (SR) tracking if applicable).

Respond: TriMet IT Oracle team continues to update LMS Team and user on status and timeline of resolution.

Close
User request

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Transfer of Learning, Knowledge retention and Examination

Examination

- We must have defensible examination and evaluation of learner knowledge retention

Assessment cycle

Learning Objectives → Map curriculum → Design → Implement → Analyze → Use & plan → Design
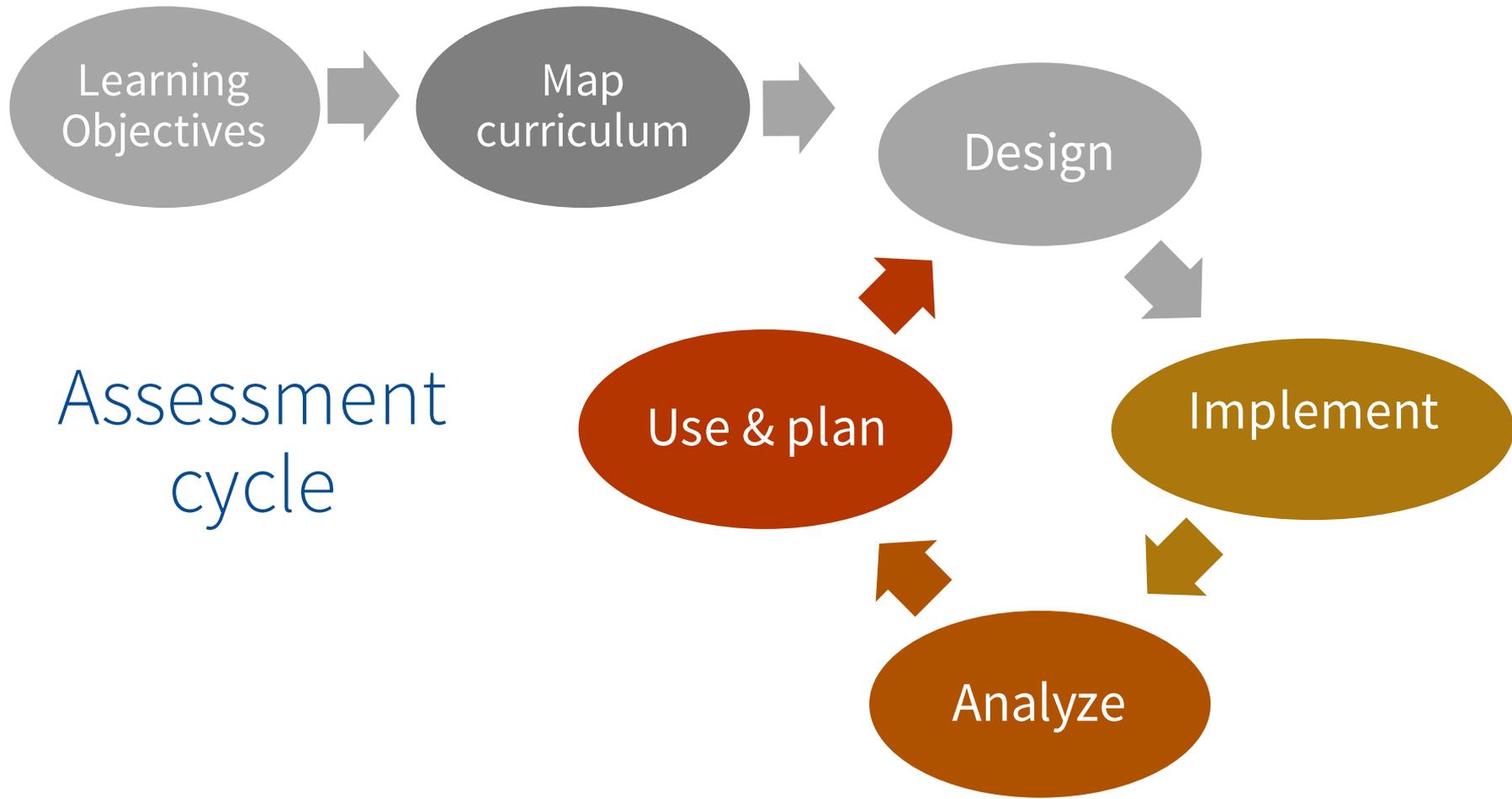
Examination: toolbox

Pre-requisite:

Spoiler alert....

Solid learning objectives

What is your purpose for testing?
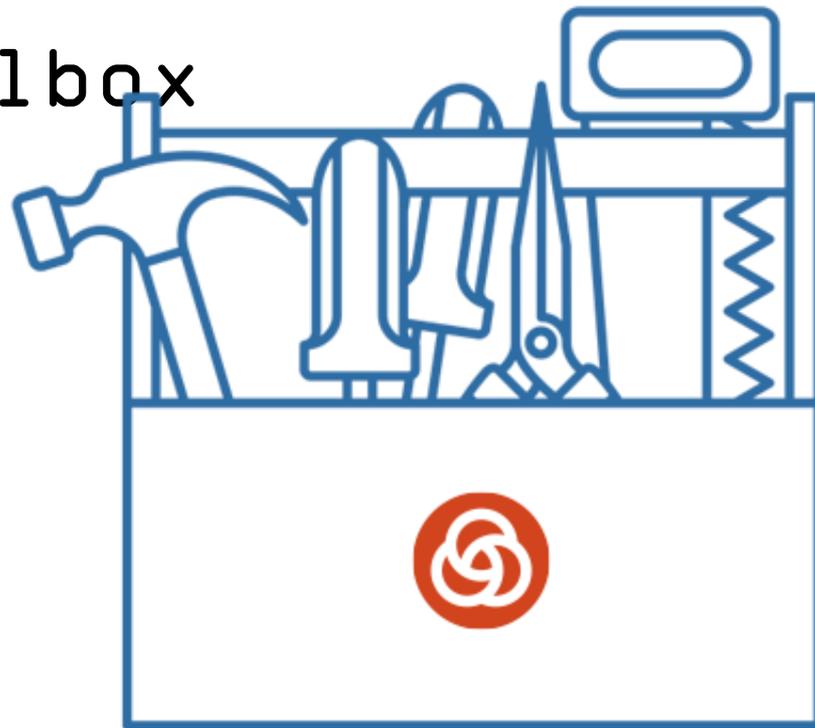
- Formative
- Summative
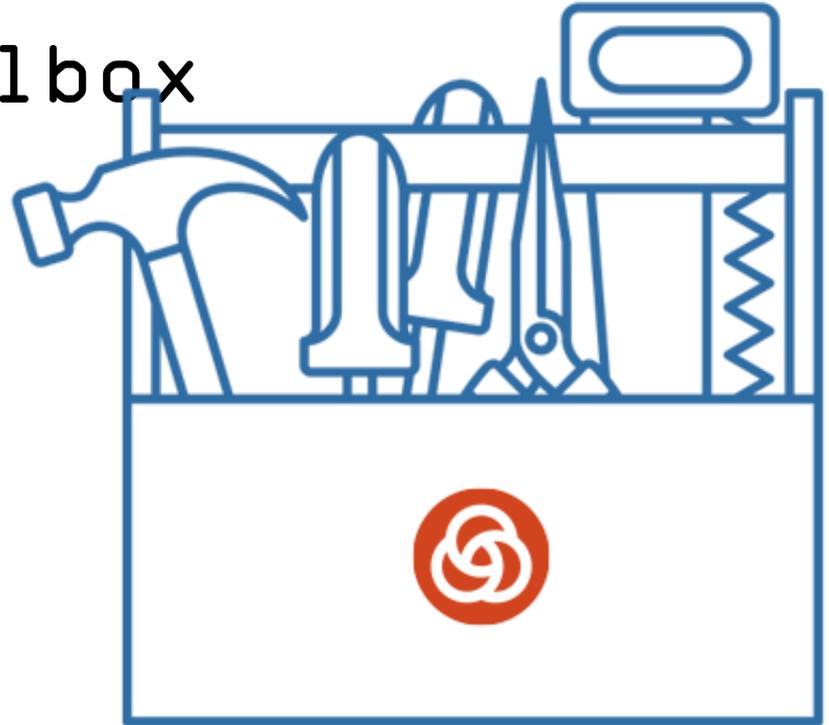
Examination: toolbox

Examination Focus:

- What outcome should the examination focus on? Why?

Evidence/indicators:

- What information needs to be gathered to answer the question?
- How will we know learners are meeting stated outcomes?

Examination: toolbox

Judgement criteria:

- What criteria should we use to determine program effectiveness or learner success?

Methodology:

- How will we deliver the examination to determine if learners are retaining knowledge?

https://teaching.berkeley.edu/resources/assessment-and-evaluation/design-assessment

Toolbox by Joost Haar from the Noun Project
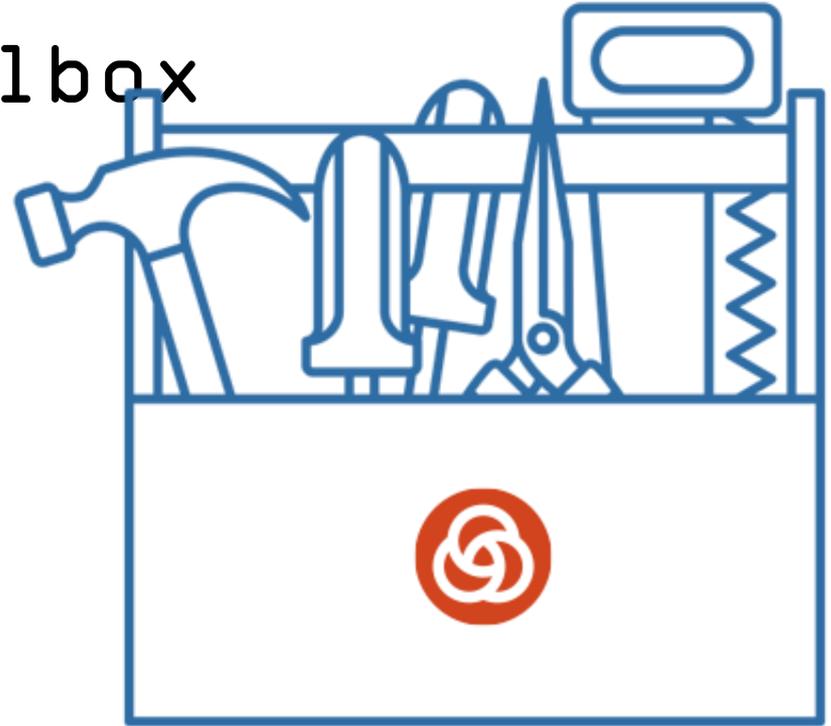
Intellectual property (IP) –

Lets unpack it shall we?
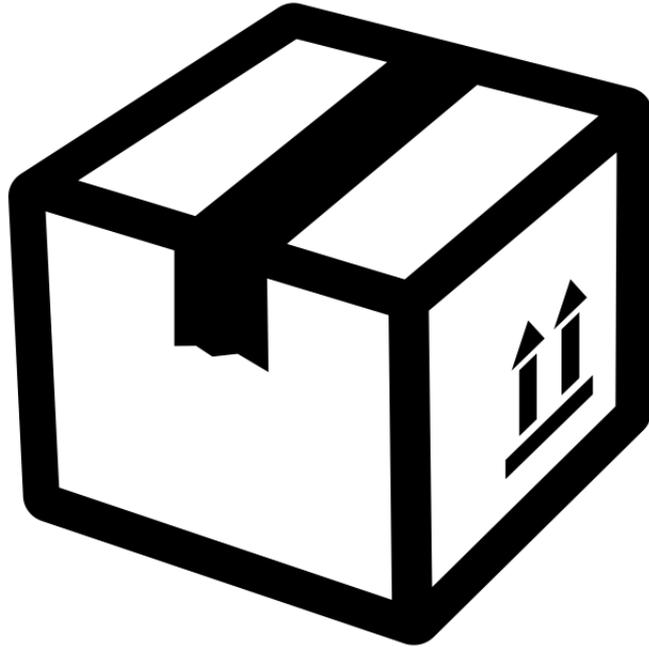
Created by Mourad Mokrane
from Noun Project

Owner of IP

Patent

Trademark
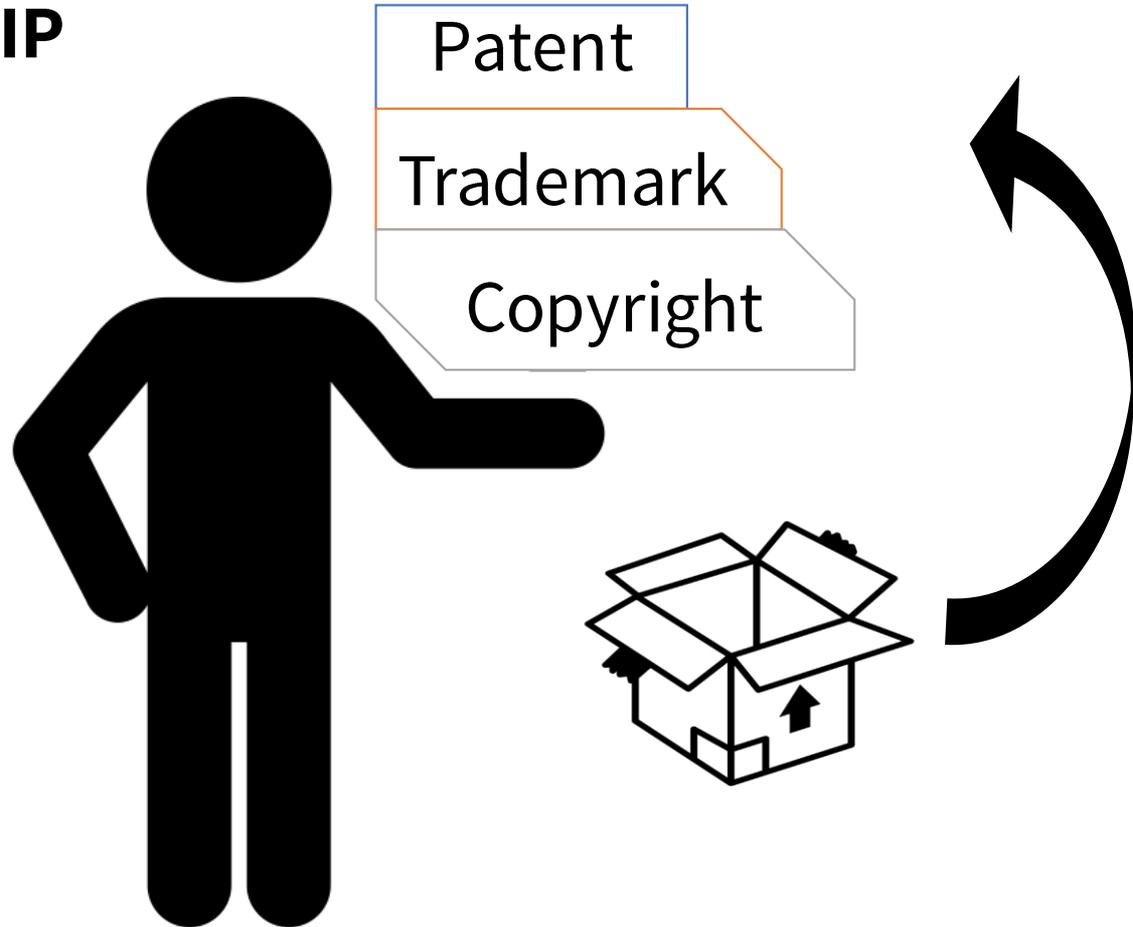
Copyright

Terms of Use define how we can use the IP content. The owners of IP establish their terms of use.

Patent

Trademark
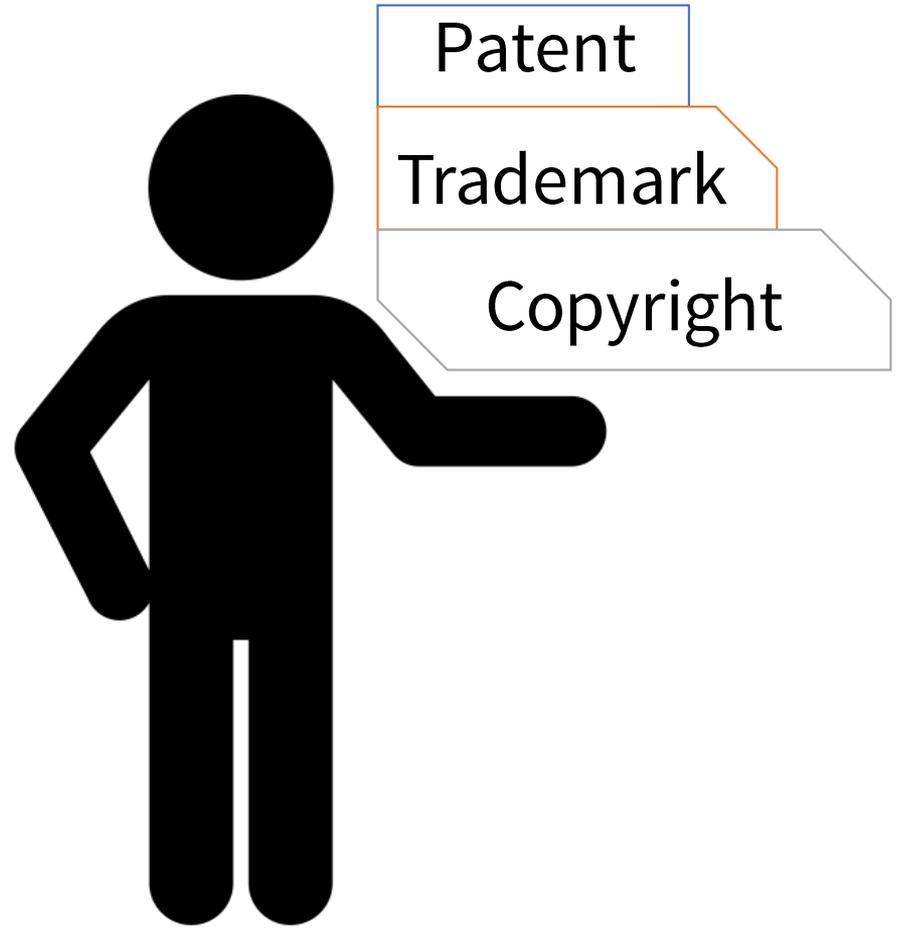
Copyright

Example of Copyright Infringement:

2003: Lowry's Reports, Inc. v. Legg Mason Inc.
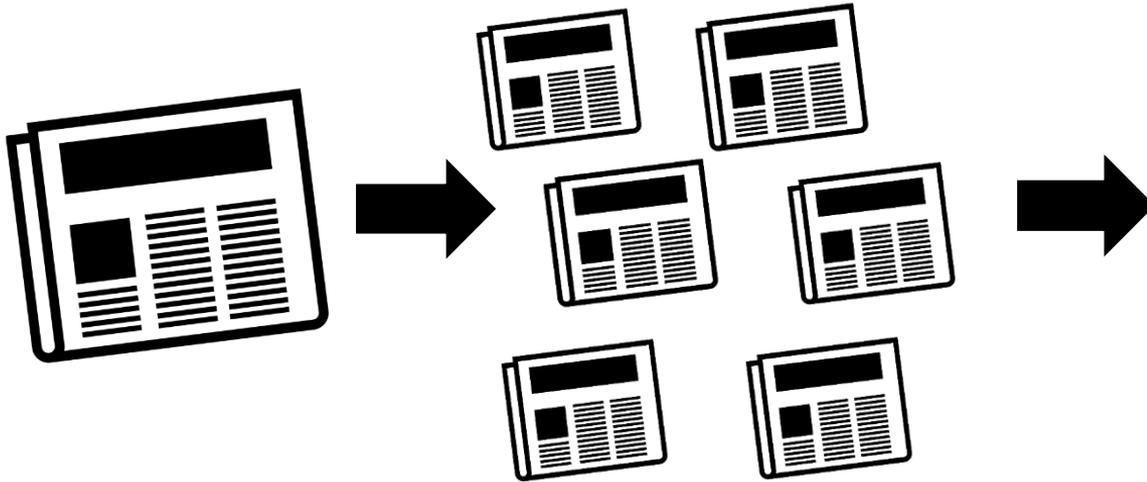
$20 Million
in damages
awarded

Created by Loïc Poivet
from Noun Project

Designing for diverse learner audiences

Inclusion and accessibility

Meet multiple learning needs

- ex: both visual and non-visual materials

Lighting, awareness

- Can trigger seizures (some videos, flash photography, etc.)

Universal designs and accessible format

- Proactive vs. Reactive

Requests for accommodation

- Loop management in asap
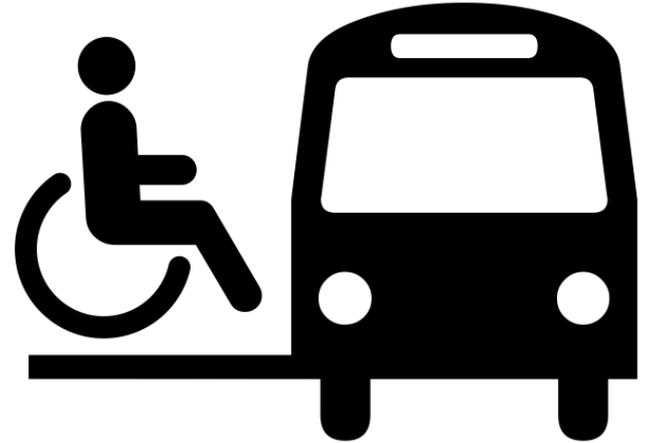
Created by Luis Prado
from Noun Project

https://youth.gov/youth-topics/inclusion-and-accessibility

Inclusion and accessibility

Language: awareness

- avoid phrases like "I need everybody to stand now" try using "if you're able, please stand with me"

Person first language, phrases such as:

- "a person who …,"

- "a person with …", or

- "person who has …

Designing for different learners

Best practices to design for different types of learners

Designing for users with **anxiety**

Do... | Don't...

give users enough time to complete an action | rush users or set impractical time limits

explain what will happen after completing a service | leave users confused about next steps or timeframes

make important information clear | leave users uncertain about the consequences of their actions

give users the support they need to complete a service | make support or help hard to access

let users check their answers before they submit them | leave users questioning what answers they gave

Designing for different learners

Best practices to design for different types of learners

Designing for users on the **autistic spectrum**

Do...		Don't...	
use simple colours		use bright contrasting colours	
write in plain language	Do this	use figures of speech and idioms	
use simple sentences and bullets		create a wall of text	
make buttons descriptive	Attach files	make buttons vague and unpredictable	Click here!
build simple and consistent layouts		build complex and cluttered layouts	

Designing for different learners

Best practices to design for different types of learners

Designing for users with **dyslexia**

Do...

use images and diagrams to support text	
align text to the left and keep a consistent layout	
consider producing materials in other formats (for example audio or video)	
keep content short, clear and simple	
let users change the contrast between background and text	

Don't...

use large blocks of heavy text	
underline words, use italics or write in capitals — *DON'T DO THIS*	
force users to remember things from previous pages - give reminders and prompts	
rely on accurate spelling - use autocorrect or provide suggestions — dyslexia ✗ dsyle	
put too much information in one place	

https://ukhomeoffice.github.io/accessibility-posters/

Designing for different learners

Best practices to design for different types of learners

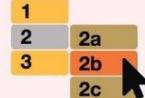Designing for users with **low vision**

Do...

Don't...

use good colour contrasts and a readable font size

use low colour contrasts and small font size

publish all information on web pages

bury information in downloads

use a combination of colour, shapes and text

only use colour to convey meaning

follow a linear, logical layout

spread content all over a page

put buttons and notifications in context

separate actions from their context

https://ukhomeoffice.github.io/accessibility-posters/

Designing for different learners

Best practices to design for
different types of learners

Designing for users with **physical or motor disabilities**

Do...	Don't...
make large clickable actions	demand precision
give clickable elements space	bunch interactions together
design for keyboard or speech only use	make dynamic content that requires a lot of mouse movement
design with mobile and touchscreen in mind	have short time out windows
provide shortcuts	tire users with lots of typing and scrolling

Designing for different learners

Best practices to design for different types of learners

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Designing for different learners

Best practices to design for different types of learners

Designing for users of screen readers

Do...	Don't...
describe images and provide transcripts for video `<alt>`	only show information in an image or video
follow a linear logical layout	spread content all over a page
structure content using HTML5 `<h1>` `<nav>` `<label>`	rely on text size and placement for structure `36pt, bold` `Header`
build for keyboard use only	force mouse or screen use
write descriptive links and headings Contact us	write uninformative links and headings Click here

https://ukhomeoffice.github.io/accessibility-posters/

Workplace

Generations

- **1909-1945** Silent Generation, Traditionalists, or Matures
  - GI Generation (1900-1924)
- **1946-1964** Baby Boomers
- **1965-1979** Generation X or Thirteeners
- **1980-2000** Millennials or Generation Y
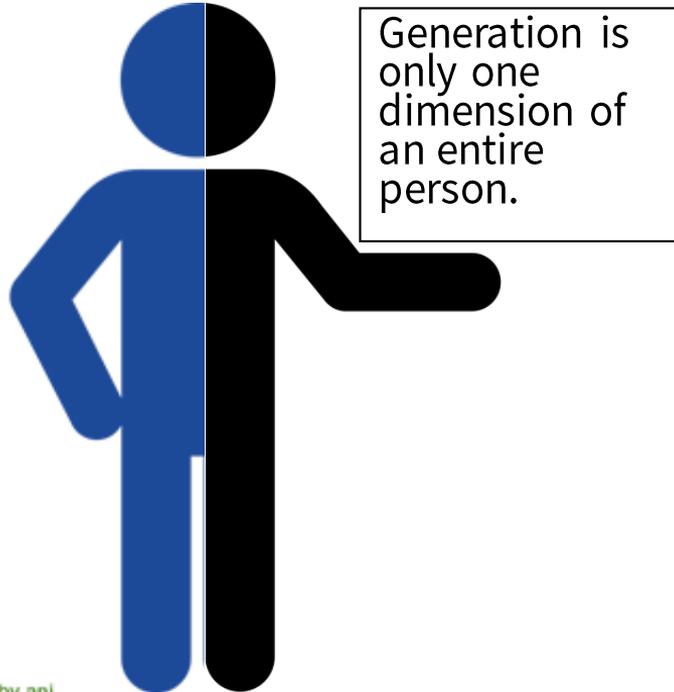- **1995-2015** Generation Z, iGen, Centennials
- **2010-2024** Generation Alpha
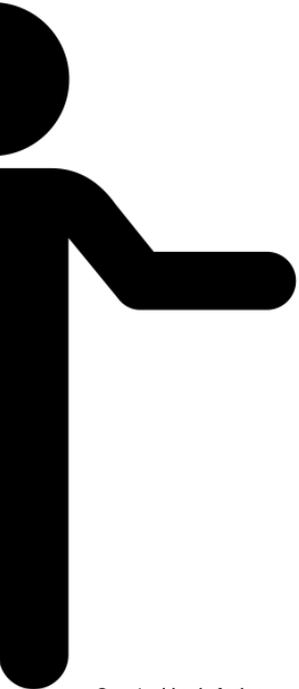
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from Noun Project

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from Noun Project

Workplace

Generations

Generation is only one dimension of an entire person.