Teaching, Learning and Assessment of the LCA ICT Module Descriptors

Participant Workbook

Day 3

LCA

PDST

Professional Development Service for Teachers | An tSeirbhís um Fhorbairt Ghairmiúil do Mhúinteoirí

Participant Booklet

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Supports Provided by PDST

PDST

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Seminars	Webinars	Email & Telephone Support	School Visits	PDST Website https://pdst.ie	Scoilnet

@LCA_PDST   **Email:** lca@pdst.ie   LCA

Key Messages

PDST

Subjects in LCA are inherently transdisciplinary, authentic and relevant to the current and future needs of all students

LCA subjects support the use of a wide range of inclusive, differentiated, experiential teaching and learning approaches

ICT applies to real-life contexts developing skills of higher-order reasoning and problem-solving engaging and recruiting students interest in support of their learning
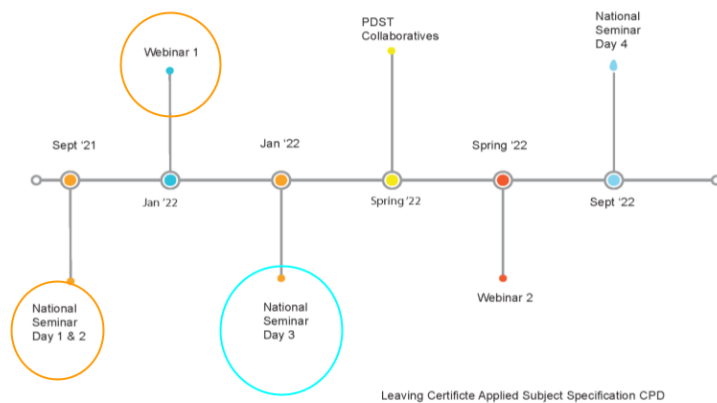
UDL provides a lens through which to review one's teaching practice, to include the needs of all learners.

[Day one and day two presentation link](#)
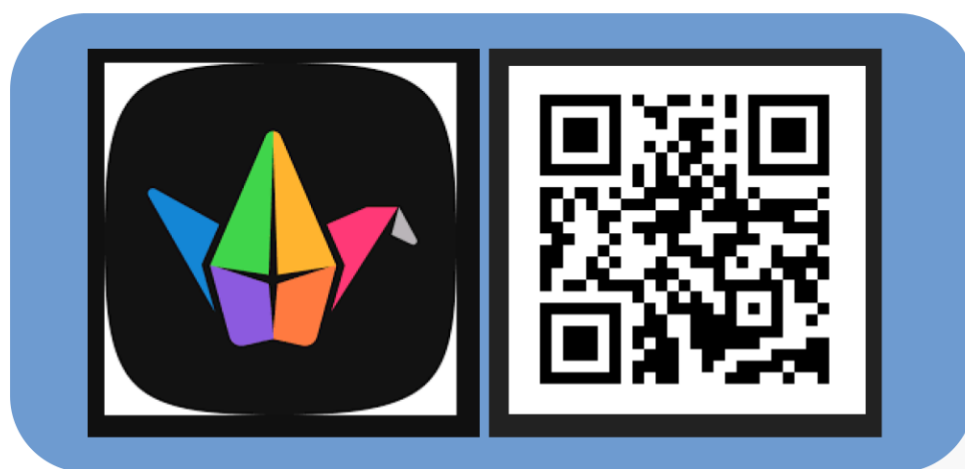
CPD for Revised Module Descriptors

Leaving Certificte Applied Subject Specification CPD

Session 1

ICT Resources and Supports Padlet page link

LCA ICT Resources Padlet

ACTIVITY

Activity 1. Vision for future learning

1. Is there a new understanding that I have gained from my experience with the ICT module descriptors and why may this understanding be important for me going forward?

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2. Can I identify further opportunities that would assist me and my students to enhance future teaching and learning outcomes in ICT?

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3. Has my engagement with the module descriptors brought about improved student performance and how have I measured this success?

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4. What further actions can I take to continue to support students positively in the enactment of the ICT module descriptors?

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Designing For All Learners
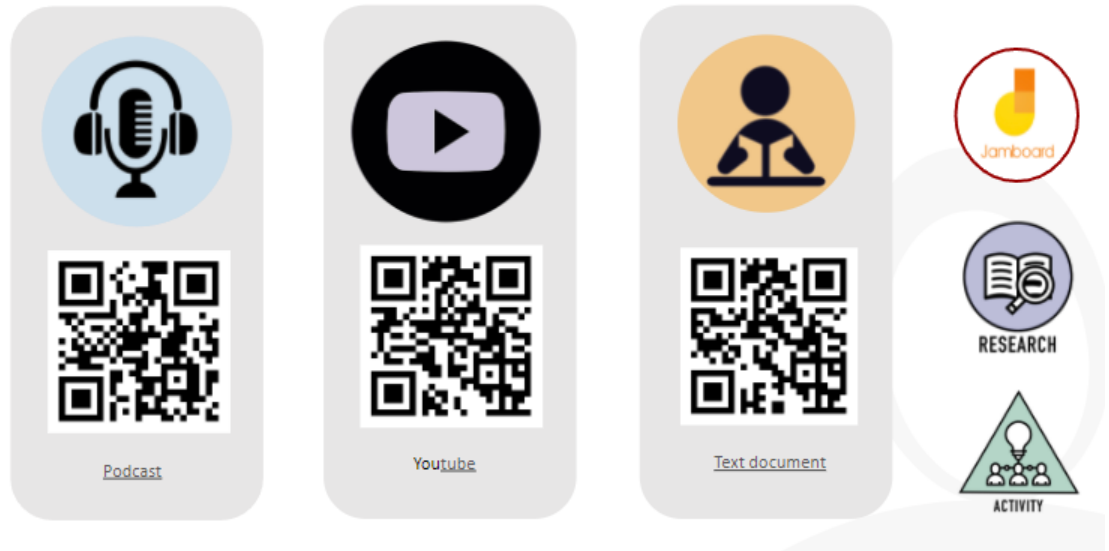
Podcast

Youtube

Text document

1. Which links did you select and why?

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2. How can you see this model enacted in your classroom?

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3. Considering your three LCA students, which medium do you think they would engage with and why?

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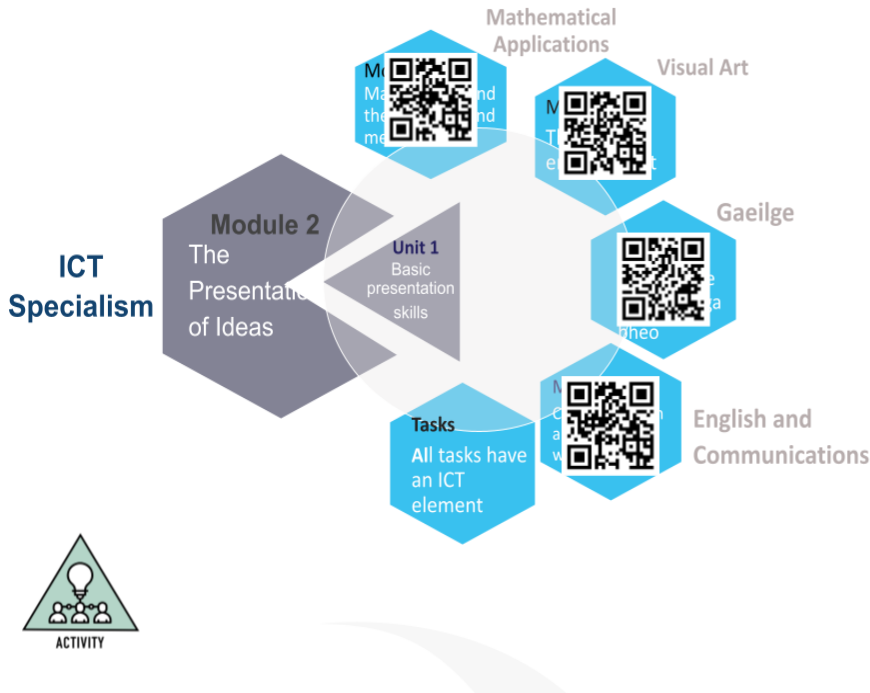
Session 2

Transdisciplinary Nature of the Learning Outcomes

LO1: Identify design principles in a range of presentation formats or media

LO2: Apply those principles to appropriate presentations

LO3: Analyse and evaluate the purpose, audience and requirements of a presentation in a range of formats and media

LO4: Develop awareness of accessibility features and the principles of universal design

Mathematical Applications Module Descriptor

Visual Art Module Descriptor

Gaeilge Module Descriptor

English and Communications Module Descriptor
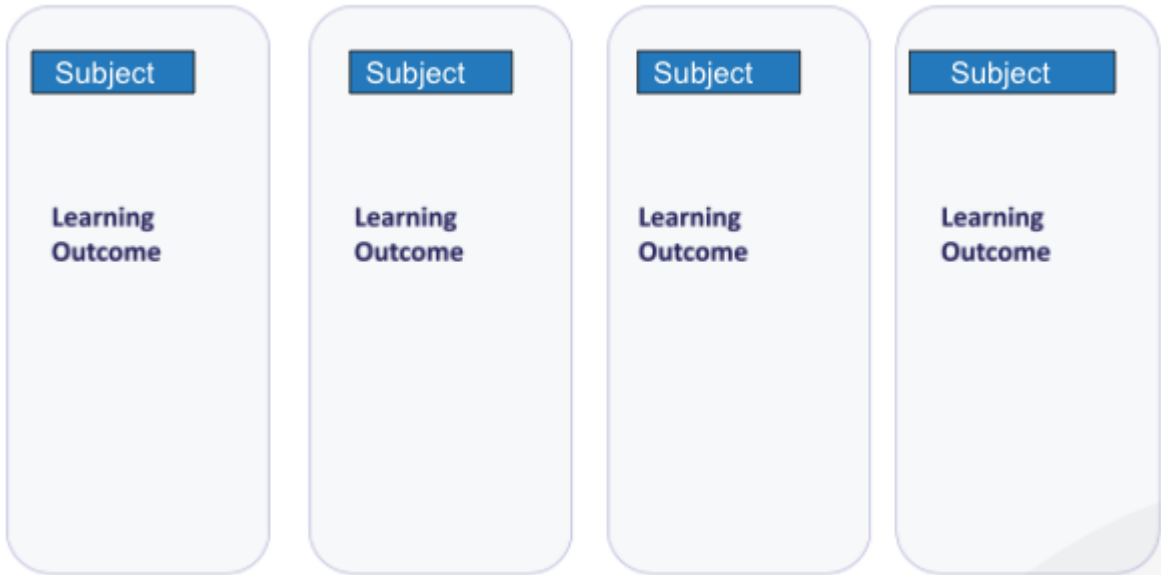
Transdisciplinary	What transdisciplinary links from other LCA subjects can you identify?

12

Links	What tasks are taking place in this session? What opportunities are there for transdisciplinary work for my students? How can I work more collaboratively with other teachers in my school?

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Planning for and Supporting Student Engagement

a)   Recruiting Interest

If we don't have a student's interest, they won't learn effectively and may just "go through the motions" to get their credits. As teachers we can spark interest by making information accessible with relevant, topical, and appealing content to students, and offering them variety in how they develop skills and knowledge.

Can you think of ways that you are currently using with your students to create interest in subject content?

Some specific strategies for recruiting interest include:

- Give students as much choice and autonomy as possible (not in *what* they learn, but *how* they learn – such as the tools they use to complete assignments and the sequence and timings of tasks)
- Allow learners to participate in the design of class activities where possible
- Guide learners in settings their own goals
- Vary activities and sources of information to connect with students from different backgrounds with different abilities and interests
- Create subject content that is socially, culturally, and personally relevant to students
- Invite students to give their responses and perspectives
- Design and maintain a predictable subject structure
- Involve all students in class discussions
- Provide variety in types of assignment, types of interactions, and pace of work throughout the subject
- Maintain continuous communication with students, including alerts and announcements to help them anticipate what's next (no surprises)

B) Sustaining Effort and Persistence

Having captured students' interest, the next thing we need to do is to sustain their effort and persistence to achieve their goals. This comes naturally to some students, however, others will need support to maintain their motivation levels. We can do this by helping students build self-regulating skills, providing conducive learning tools and environments, and creating a culture of self-determination within our students.

Students may lack motivation or internal organization when they don't fully understand the goal or purpose of an activity. Others may need a sense of community to feel engaged in the subject. Sometimes, more structure is required in order to feel that they will succeed. Regardless of the reasons, clear communication and consistent evaluation of student progress will help you adapt to their learning needs.

Some specific strategies for sustaining effort and persistence include:

- Prompt students to put learning goals in their own words to solidify understanding
- Present learning goals and the purpose of activities in multiple ways
- Break up larger goals into smaller goals and break up assessments accordingly
- Use visualizations like timelines to explain goals
- Demonstrate scheduling and planning tools in the LMS
- Show students example of successfully completed assessments
- Adjust the degree of difficulty and complexity according to student performance
- Offer alternative formats, tools, and pathways to learning
- Create a class culture of cooperation and peer learning
- Encourage peer support opportunities like tutoring and study groups
- Generate clear expectations for group work (rubrics, agreements, etc.)
- Provide frequent, timely, and specific feedback that focuses on improvement and encouragement

c) Self-Regulation

Instructor involvement in engaging and motivating learners through subject design and culture helps students get their footing and stay on task. However, it is ultimately the student's responsibility to regulate their attention, focus, and motivations. Self-regulation involves managing one's emotions and mental state to be able to fully participate in one's environment.

Some students may struggle with self-regulation even at the postsecondary level, due to personal aptitude, environmental factors, or lack of guidance in their prior education. At the same time, there is a certain level of expectation that college students can mitigate their thoughts and actions independent of their instructors and classmates. College instructors can integrate support for learner variance in self-regulation without excessive hand-holding by anticipating student needs, allowing for flexibility by planning, and monitoring the aptitude and behavior of individual students.

Some specific strategies for sustaining effort and persistence include:

- Establish expectations on conduct, interaction, and timelines and provide reminders
- Always use rubrics and communicate assessment requirements
- Allow for extra time on assessments when appropriate
- Integrate self-reflection and persona goal-setting into assessments
- Connect students with campus resources for academic success, such as tutoring
- Maintain open dialog about student questions, challenges, and frustrations
- Provide guidance and correction on areas of student improvement when giving feedback

Engagement
(Why)
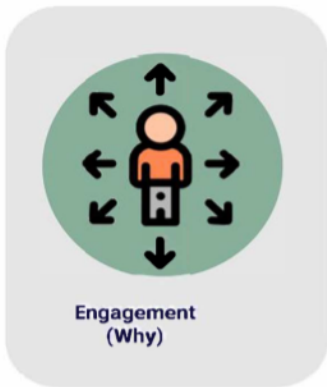
Consider your three LCA students when choosing ICT activities.

How do we offer choice?
How do we motivate?

Student 1

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Student 2

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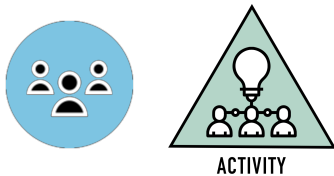_____
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Student 3

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ACTIVITY

'Genius is one percent inspiration and ninety-nine percent perspiration'
(Thomas Edison)

The Five Creative Dispositions Model explores the following five core dispositions of the creative mind:

Consider how the five creative dispositions model could support your three LCA students achieving the learning outcomes for module two.

1. Inquisitive. Clearly creative individuals are good at uncovering and pursuing interesting and worthwhile questions in their creative domain. − Wondering and questioning – beyond simply being curious about things, the questioning individual poses concrete questions about things. This enables him, and others, to think things through and develop new ideas. − Exploring and investigating – questioning things alone does not lead to creativity. The creative individual acts out his curiosity through exploration, and the investigating individual follows up on her questions by actively going out, seeking, and finding out more. − Challenging assumptions – a degree of appropriate skepticism is an important trait of the creative individual. This means not taking things at face value without critical examination.

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2. Persistent. In line with Thomas Edison's remark above, this section has been repeatedly emphasised. − Sticking with difficulty – persistence in the form of tenacity is an important habit of mind enabling an individual to get beyond familiar ideas and come up with new ones. − Daring to be different – creativity demands a certain level of self-confidence as a prerequisite for sensible risk-taking as well as toleration of uncertainty. − Tolerating uncertainty – being able to tolerate uncertainty is important if an individual is going to move 'off of the starting blocks' on a project or task where actions or even goals are not fully set out.

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3. Imaginative. At the heart of a wide range of analyses of the creative personality is the ability to come up with imaginative solutions and possibilities. − Playing with possibilities – developing an idea involves manipulating it, trying it out, improving it. − Making connections – this process of synthesising brings together a new amalgam of disparate things. − Using intuition – the use of intuition allows individuals to make new connections and arise at thoughts and ideas that would not necessarily materialize given analytical thinking alone.

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4. Collaborative. Many current approaches to creativity, such as that of John-Steiner (2006), stress the social and collaborative nature of the creative process. − Sharing the product – this is about the creative output itself impacting beyond its creator. − Giving and receiving feedback – this is the propensity to want to contribute to the ideas of others, and to hear how one's own ideas might be improved. − Cooperating appropriately – the creative individual co-operates appropriately with others. This means working collaboratively as needed, not necessarily all the time.

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5. Disciplined. As a counterbalance to the 'dreamy', imaginative side of creativity, there is a need for knowledge and craft in shaping the creative product and in developing expertise. − Developing techniques – skills may be established or novel but the creative individual will practise in order to improve. This is about devoting time to a creative endeavor. − Reflecting critically – once ideas have been generated, evaluation is important. We could call this 'converging'. It requires decision-making skills. − Crafting and improving – this relates to a sense of taking pride in one's work. The individual pays attention to detail, corrects errors, and makes sure the finished article works perfectly, as it should.

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Tools to present information
Choice 1: _____

Question	Yes	No	Not applicable
Have you considered your students' current technological capabilities and their limitations?			
Will your student utilise this technology in ways that affirm, challenge and inspire?			
Will this technology help your student to learn and communicate?			
Have you considered any challenges with your student using this technology to achieve the associated learning outcomes?			
Can your students collaborate using this technology?			
Will the student be able to complete their key assignment using this technology?			
Will your assessment need to be adapted in any way?			

Tools to present information
Choice 2: _____

Question	Yes	No	Not applicable
Have you considered your students' current technological capabilities and their limitations?			
Will your student utilise this technology in ways that affirm, challenge and inspire?			
Will this technology help your student to learn and communicate?			
Have you considered any challenges with your student using this technology to achieve the associated learning outcomes?			
Can your students collaborate using this technology?			
Will the student be able to complete their key assignment using this technology?			
Will your assessment need to be adapted in any way?			

Principles of Presentation Design

ACTIVITY

Headline

PDST

It summarises or expresses an opinion.
It is emphatic.
It isn't a title, it's job is to help the audience identify what is important.

'using sentence headlines of no more than two lines led to statistically significant increases in recall from the audience'

Alley,M,*et al*.(2006),p.233

A headline stands out.

Technology Intelligence
Rise of the robots is inevitable if Google and Facebook won't say who is behind their clicks

Photo by Annie Spratt on Unsplash

LCA

Authentic imagery
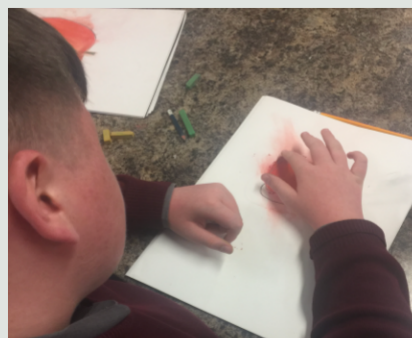
| Stock | VS | Real |

When using authentic imagery remember to keep within the remit of your schools usage policy and GDPR.

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Images

The right image will complement and support the points you want to make.

You do not want to pick images that are just there to fill space.

These images will seem out of place and will not add value to your material.

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Suggested sites for royalty free images:
www.pexels.com
www.pixabay.com
www.unsplash.com

Icons

Icons are effective communication devices. An icon can quickly sum up and express what a section of text is about by communicating the core idea in a visual way.

ACTIVITY
RESEARCH
WORKBOOK

Suggested sites for royalty free icons:
https://thenounproject.com/
https://icons8.com/

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Graphs, charts, numbers

Data helps to:

Visualise – make the point easy to see, not read.

Unify – bring it together for your audience and make it consistent.

Focus – on the most important things for your audience.

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Technology Tools for Presenting Information - Examples

Digital Storytelling	Blogging	Podcasting	Movie Making	Presentation	Desktop Publishing
Microsoft Photostory	Blogger.com	Audacity	Animoto	Prezzi	Canva
Animaker Class	Wix.com	GarageBand	Biteable	Powerpoint	Microsoft Publisher
Cloud Stop Motion	Weebly.com	Power Sound Editor	YouTube Video Editor	Keynote	Scribus
				Google Slides	

Universal Design Features

Best practices for making PowerPoint presentations accessible			
The following table includes key best practices for creating PowerPoint presentations that are accessible to people with disabilities.			
What to fix	**How to find it**	**Why fix it**	**How to fix it**
Include alternative text with all visuals. Visual content includes pictures, SmartArt graphics, shapes, groups, charts, embedded objects, ink, and videos.	To find missing alternative text, use the Accessibility Checker.	Alternative text helps people who can't see the screen to understand what's important in images and other visuals. Avoid using text in images as the sole method of conveying important information. If you must use an image with text in it, repeat that text in the presentation. In the alternative text, briefly describe the image and mention the existence of the text and its intent.	Add alt text to visuals in Microsoft 365 Add alt text to visuals in Office 2019 Add alt text to visuals in Office 2016
Make sure slide contents can be read in the order that you intend.	Use the Accessibility Checker to find slides that have possible problems with reading order.	When someone who can see reads a slide, they usually read things, such as text or a picture, in the order the elements appear on the slide. In contrast, a screen reader reads the elements of a slide in the order they were added to the slide, which might be very different from the order in which things appear. To make sure everyone reads the contents in the order	Set the reading order of slide contents

		you intend, it's important to check the reading order.	
When creating a new slide, use the built-in slide designs.		PowerPoint contains built-in slide layouts that you can apply to any slide. When you use them with a new slide, these layouts automatically make sure that the reading order works for everyone.	Use built-in slide designs for inclusive reading order
Add meaningful hyperlink text and ScreenTips.	To determine whether hyperlink text makes sense as standalone information and whether it gives readers accurate information about the destination target, visually scan the slides in your presentation.	People who use screen readers sometimes scan a list of links. Links should convey clear and accurate information about the destination. For example, instead of linking to the text Click here, include the full title of the destination page. You can even use the URL of the page if it's short and descriptive, for example, www.microsoft.com.	Add hyperlink text and ScreenTips
Ensure that color is not the only means of conveying information.	Go to Windows settings and enable the grayscale filter in Settings > Ease of Access > Color filters. Visually scan each slide in your presentation for instances of color-coding.	People who are blind, have low vision, or are colorblind might miss out on the meaning conveyed by particular colors. For example, add an underline to color-coded hyperlink text so that people who are colorblind know that the text is linked even if they can't see the color. For headings, consider adding bold	Use an accessible slide design

		or using a larger font.	
Use sufficient contrast for text and background colors.	To find insufficient color contrast, use the Accessibility Checker. You can also look for text in your spreadsheet that's hard to read or to distinguish from the background.	Use strong contrast between text and background, so people with low vision can see and use the content. Use dark text on a white or off-white background, or reverse it and use white text on a dark background. White and black schemes also make it easier for people who are colorblind to distinguish text and shapes.	Use accessible text color
Give every slide a unique title	To find slides that do not have titles, use the Accessibility Checker.	People who are blind, have low vision, or a reading disability rely on slide titles to navigate. For example, by skimming or using a screen reader, they can quickly scan through a list of slide titles and go right to the slide they want.	Use unique slide titles Hide a slide title
Use a simple table structure for data only, and specify column header information.	To ensure that tables don't contain split cells, merged cells, or nested tables, use the Accessibility Checker.	Screen readers keep track of their location in a table by counting table cells. If a table is nested within another table or if a cell is merged or split, the screen reader loses count and can't provide helpful information about the table after that point. Screen readers also use header information to identify rows and columns.	Use table headers

Use a larger font size (18pt or larger), sans serif fonts, and sufficient white space.	To find potential issues related to fonts or white space, review your slides for areas that look crowded or illegible.	People who have dyslexia describe seeing text "swim together" on a page (the compressing of one line of text into the line below). They often see text merge or distort. For people who have dyslexia or have low vision, reduce the reading load. For example, they may benefit from familiar sans serif fonts, such as Arial or Calibri. Avoid using all capital letters and excessive italics or underlines. Include ample white space between sentences and paragraphs.	Use an accessible slide design Format text for accessibility
Make videos accessible to visually impaired and hearing-impaired users.		Subtitles typically contain a transcription (or translation) of the dialogue. Closed captions typically also describe audio cues such as music or sound effects that occur off-screen. Video description means audio-narrated descriptions of a video's key visual elements. These descriptions are inserted into natural pauses in the program's dialogue. Video description makes video more accessible to individuals who are blind or visually	Use captions, subtitles, and alternative audio tracks in videos

		impaired.	

Adapted from:

https://support.microsoft.com/en-us/office/make-your-powerpoint-presentations-accessible-to-people-with-disabilities-6f7772b2-2f33-4bd2-8ca7-dae3b2b3ef25

Other Universal Design resources:

https://www.ahead.ie/The-AT-Hive

https://support.microsoft.com/en-us/office/improve-accessibility-with-the-accessibility-checker-a16f6de0-2f39-4a2b-8bd8-5ad801426c7f#PickTab=Windows

https://www.w3.org/WAI/media/av/

https://accessibility.uncg.edu/getting-started-with-accessibility/making-presentations-and-forms-accessible/#presentations

https://insider.office.com/nl-be/blog/reach-more-people-by-making-your-powerpoint-slides-work-with-a-screen-reader

Session 3

Planning a unit of learning

Instructions:
1. Select a learning outcome from module two of the ICT Specialism module descriptor.
2. Design a learning intention(s) associated with the learning outcome while enacting UDL Consider your three LCA students
3. Devise a learning activity based on the learning intention(s).
4. Create success criteria which describe the features of success for the learning activity.

Learning outcome:	UDL Principle
Learning intention(s):	
Learning activity: **Resources:**	
Success criteria:	
Assessment:	

https://www.theudlproject.com/uploads/8/8/1/9/8819970/udl_implementationrubric_melissatoland.pdf

Planning a unit of learning

Next Steps.

Reflection

Consider the following reflective questions:

What new learning have I come to?

What are the implications for my teaching?

What will you do differently to maximise learning for ALL learners in your class?

Can you see the strategic connections between the MDs?

Can you identify the transdisciplinary links?

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What new learning have I come to?

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What are the implications for my teaching?

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What will you do differently to maximise learning for ALL learners in your class?

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Can you see the strategic connections between the Module Descriptors?

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Can you identify the transdisciplinary links?

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CPD for Revised Module Descriptors
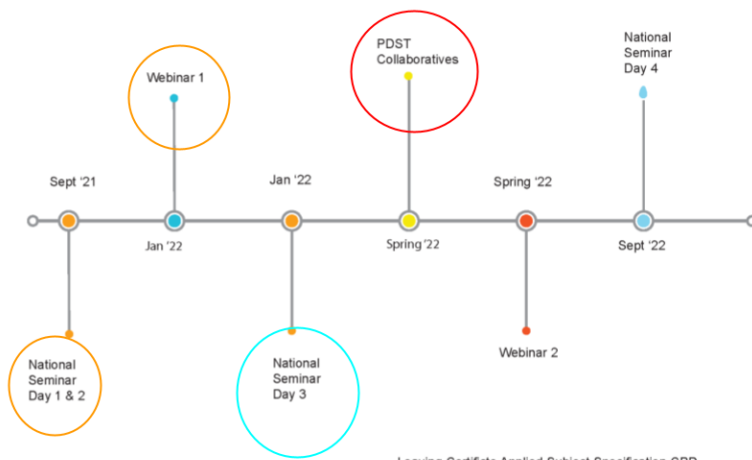
Leaving Certificte Applied Subject Specification CPD

Planning for Collaboration

PDST Collaboratives

None of us is as smart as all of us

Japanese Proverb

In the past quarter century, teaching has made great strides in building professional collaboration. It is now time for this to progress into collaborative professionalism, rooted in inquiry, responsive to feedback and always up for a good argument.

(Hargreaves & O'Connor, 2008, p. 9)

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Learning is:

- Constructive
- Self regulated
- Situated
- Collaborative

Can you identify any opportunities within your school day where structured collaboration can take place?

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Following today's seminar are there any areas that you feel would be best explored in a collaborative environment?

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Resources

LCA ICT Padlet of Resources
https://tinyurl.com/LCAICTRESOURCES

Teacher CPD.ie (URL: https://teachercpd.ie/)

PDST Technology in Education's Digital Portfolios CPD course (URL:
Introducing Digital Portfolios (Post Primary) (online))

PDST Digital Technologies page (URL:
https://www.pdst.ie/DistanceLearning/DigTech)

"My Teacher is an App." BBC Podcasts.
www.bbc.co.uk/programmes/b03w7c6s/episodes/guide

Cult of Pedagogy Podcast

Joanne Banks Inclusion Podcast

Garrison, D. R. *E-Learning in the 21st Century*. 3rd. Abingdon, Oxon: Routledge, 2017.
Gilbert, I. *Why do I need a teacher when I've got google?*. New York: Routledge, 2011.
Clarke, A. *How to use Technology Effectively in Post Compulsory Education*. London: Sage, 2009.

Accessibility Posters set.PDF
https://ukhomeoffice.github.io/accessibility-posters/posters/accessibility-posters.pdf

Creative thinking framework, PISA
https://www.oecd.org/pisa/publications/PISA-2021-Creative-Thinking-Framework.pdf

PDST Acceptable use policy .
https://pdsttechnologyineducation.ie/en/NEWS/How-to-develop-an-Acceptable-Use-Policy.html

Assistive Technology Resource
The AT Hive?

CAST UDL Guidelines Educator Worksheet
https://mail.google.com/mail/u/0/#inbox/FMfcgzGlkjhDTdRfzssDLjdvlCfrsWpk?projector=1&messagePartId=0.0

UNIVERSAL DESIGN FOR **LEARNING**

UDL

Universal design for learning (UDL) is a set of principles for designing curriculum that provides all individuals with equal opportunities to learn.

UDL serves all learners

UDL is designed to serve all learners, UDL is designed to serve all learners, regardless of ability, disability, age, gender, or cultural and linguistic background.

UDL provides a blueprint and framework for designing goals, methods, materials, and assessments to reach all students including those with diverse needs.

UDL is different from other approaches to curriculum design in that educators begin the design process expecting the curriculum to be used by a diverse set of students with varying skills and abilities.

The 3 Main principles of UDL

The CAST model of UDL is based on three core principles

1. The 'WHY' of learning – Multiple Means of Engagement: This is to enable learners to engage positively with their learning.

2. The 'WHAT' of learning – Multiple Means of Representation: This is focused on offering choice around learning.

3. The 'HOW' of learning – Multiple Means of Action/Expression: This relates to assessment – ensuring that learners can demonstrate their understanding.

Why   What   How

UDL has an Inclusive Focus

From a UDL perspective, it is evident that most attention should be focused on the mainstream learning environment, as it is this space that seeks to be inclusive of most learners.

The word "universal" in UDL does not serve to mean that there is only one optimal solution for every learner - it indicates an awareness of the unique nature of each learner and the need to accommodate differences, creating learning experiences that meet the needs of the learner and maximise their ability to progress (Rose & Meyer, 2002).

UDL supports Teaching & Learning Methodologies

UDL has the potential to create a truly inclusive educational setting for all students.

UDL plans for learner variability from the outset, meaning that the needs of all students are accounted for in the planning stage, which reduces in some cases eliminates the need for accommodations. UDL is not in conflict with other teaching and learning methods and practices. It incorporates and supports numerous approaches to teaching and learning, such as the following:

- Cooperative learning (group work)
- Differentiated instruction
- Performance-based assessment
- Project-based learning
- Multisensory teaching
- Theory of multiple intelligences
- Principles of student-centred learning

How Students Benefit from UDL

Students benefit from UDL through a variety of instructional practices, materials, and learning activities:

Opportunity to fully demonstrate knowledge.

Development of self-aware and knowledgeable learners.

Ability to achieve their potential within whichever educational trajectory they pursue.

Circumvent numerous challenges faced by learners with disabilities, while simultaneously improving learning for all learners

HOW EDUCATORS CAN INCORPORATE UDL

Use multiple strategies to present content.
Enhance instruction through the use of case studies, role play, cooperative learning, hands-on activities, guest speakers, excursions, web-based communications, and educational software.

Offer a choice of learning contexts.
Provide opportunities for individual, pair, and group work as well as distance learning, peer learning, and fieldwork. Use a variety of materials. To present, illustrate, and reinforce new content, use materials such as online resources, videos, podcasts, presentations, blogs, digital storytelling, and e-books.

Provide cognitive supports.
Present background information for new concepts using pictures, artefacts, videos, practical examples. Scaffold student learning by providing a course syllabus, outlines, summaries, study guides, and copies of presentations.

Teach to a variety of learning styles.
Build movement into learning. Give instructions both orally and in writing to engage students auditorily and visually. Use visual aids for slides, graphics, and charts.

Provide flexible opportunities for assessment.
Allow students to demonstrate their learning in multiple ways that include visual and oral presentations, rather than only written assessment. According to the National Centre on Universal Design for Learning at CAST, the research that supports UDL comes from cognitive learning science and neuroscience and is also derived from the work of Lev Vygotsky and Benjamin Bloom on understanding individual differences and the pedagogies required to address them. Research has been identified on specific practices for meeting the needs of individual differences as well as research on the specific applications of UDL.

UDL Implementation Rubric

by Melissa Toland

	UDL EXPLORER	UDL NOVICE	UDL INTERMEDIATE	UDL ADVANCED	UDL IDOL
Provide Multiple Means of Engagement	I am aware of the process of providing students with multiple means of engagement and am **exploring ways to incorporate it into my practice** either through professional development, research, or some classroom application.	My classroom is an environment in which **students are directed to share their ideas on their interests** as it relates to content, and **set goals for their own learning**, including reflecting on their progress and achievement of those goals **in some lessons, on some days.**	My classroom is an environment in which **students are encouraged to share how content is relevant and valuable to their own interests, and set goals for their own learning**, including reflecting on their progress and achievement of those goals **in some lessons, on some days.**	My classroom is an environment in which **students are encouraged to share how content is relevant and valuable to their own interests, and set goals for their own learning**, including reflecting on their progress and achievement of those goals **in most lessons, on most days.**	My classroom is an environment in which **students are empowered to make connections between content and their own interests, and make choices that drive their learning experiences**, including consistently setting goals, reflecting on their progress and achievement of those goals, **in every lesson, every day.**
Provide Multiple Means of Representation	I am aware of the process of providing students with multiple means of representation and am **exploring ways to incorporate it into my practice** either through professional development, research, or some classroom application.	My classroom is an environment in which **students are provided multiple resources and materials to support their learning** and build their understanding of concepts in order to achieve the goals of a lesson **on some days.**	My classroom is an environment in which **students are provided multiple resources and materials to support their learning** and build their understanding of concepts in order to achieve the goals of a lesson **on most days.**	My classroom is an environment in which **students are encouraged to choose reputable resources and materials to personalize their learning** and build their understanding of concepts in order to achieve the goals of a lesson **on most days.**	My classroom is an environment in which **students are empowered to choose reputable resources and materials to personalize their learning** and build their understanding of concepts in order to achieve the goals of a lesson **every day.**
Provide Multiple Means of Action & Expression	I am aware of the process of providing students with multiple means of action and expression and am **exploring ways to incorporate it into my practice** either through professional development, research, or some classroom application.	My classroom is an environment in which **students are provided options that allow them to demonstrate mastery of standards in different ways, and select which devices/ technologies they need to demonstrate their knowledge and skills, in** some lessons, on some days.	My classroom is an environment in which **students are provided options that allow them to demonstrate mastery of standards in different ways, and select which devices/ technologies they need to demonstrate their knowledge and skills, in** most lessons, on most days.	My classroom is an environment in which **students are encouraged to independently create authentic products that allow them to demonstrate mastery of standards, and choose which devices/ technologies they need to demonstrate their knowledge and skills, in** most lessons, on most days	My classroom is an environment in which **students are empowered to independently create authentic products that allow them to demonstrate mastery of the standard, and choose which devices/ technologies they need to demonstrate their knowledge and skills, in** every lesson, every day.

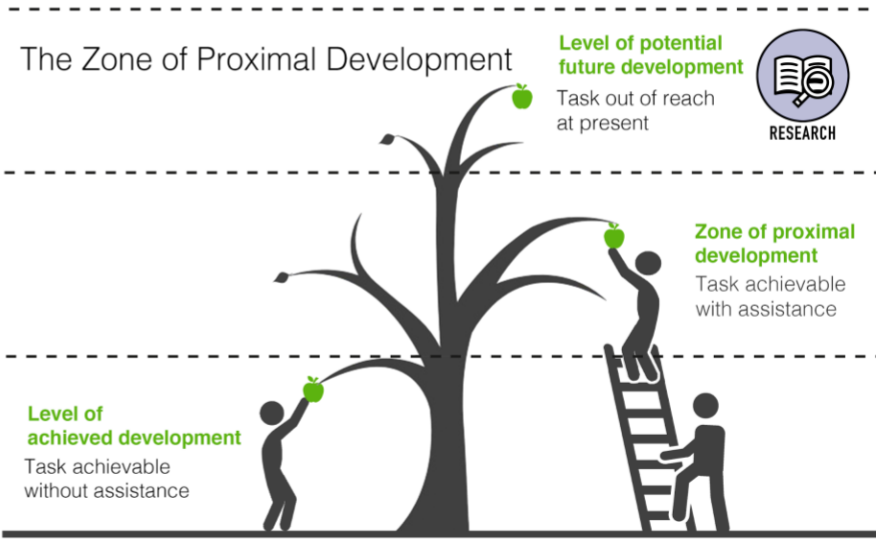*Adapted from the UDL Progression Rubric by Dr. Katie Novak and Dr. Kristan Rodriguez*

https://www.theudlproject.com/uploads/8/8/1/9/8819970/udl_implementationrubric_melissatoland.pdf

Provide multiple means of
Engagement
Affective Networks
The "WHY" of Learning

Provide multiple means of
Representation
Recognition Networks
The "WHAT" of Learning

Provide multiple means of
Action & Expression
Strategic Networks
The "HOW" of Learning

Access

Provide options for
Recruiting Interest (7)
- Optimize individual choice and autonomy (7.1)
- Optimize relevance, value, and authenticity (7.2)
- Minimize threats and distractions (7.3)

Provide options for
Perception (1)
- Offer ways of customizing the display of information (1.1)
- Offer alternatives for auditory information (1.2)
- Offer alternatives for visual information (1.3)

Provide options for
Physical Action (4)
- Vary the methods for response and navigation (4.1)
- Optimize access to tools and assistive technologies (4.2)

Build

Provide options for
Sustaining Effort & Persistence (8)
- Heighten salience of goals and objectives (8.1)
- Vary demands and resources to optimize challenge (8.2)
- Foster collaboration and community (8.3)
- Increase mastery-oriented feedback (8.4)

Provide options for
Language & Symbols (2)
- Clarify vocabulary and symbols (2.1)
- Clarify syntax and structure (2.2)
- Support decoding of text, mathematical notation, and symbols (2.3)
- Promote understanding across languages (2.4)
- Illustrate through multiple media (2.5)

Provide options for
Expression & Communication (5)
- Use multiple media for communication (5.1)
- Use multiple tools for construction and composition (5.2)
- Build fluencies with graduated levels of support for practice and performance (5.3)

Internalize

Provide options for
Self Regulation (9)
- Promote expectations and beliefs that optimize motivation (9.1)
- Facilitate personal coping skills and strategies (9.2)
- Develop self-assessment and reflection (9.3)

Provide options for
Comprehension (3)
- Activate or supply background knowledge (3.1)
- Highlight patterns, critical features, big ideas, and relationships (3.2)
- Guide information processing and visualization (3.3)
- Maximize transfer and generalization (3.4)

Provide options for
Executive Functions (6)
- Guide appropriate goal-setting (6.1)
- Support planning and strategy development (6.2)
- Facilitate managing information and resources (6.3)
- Enhance capacity for monitoring progress (6.4)

Goal

Expert learners who are...

Purposeful & Motivated

Resourceful & Knowledgeable

Strategic & Goal-Directed

This introduction to digital literacy will give students the opportunity to gain practical Information and Communication Technology skills that are valuable over the course of this programme, particularly in presenting student task work and key assignments, for school life and their future lives.
Introduction to ICT pg 12

The Zone of Proximal Development

Level of potential future development
Task out of reach at present

RESEARCH

Zone of proximal development
Task achievable with assistance

Level of achieved development
Task achievable without assistance

Lev Semyonovich Vygotsky (1896-1934)

Useful links

NCSE Courses

https://events-emea4.adobeconnect.com/content/connect/c1/4712923634/en/events/catalog.html?folder-id=5858033856&from-origin=ncse.adobeconnect.com

Stock Photography / Videos

- Unsplash: https://unsplash.com/
- Pexels: https://www.pexels.com/
- Pixabay: https://pixabay.com/

GIFs

- Giphy: https://giphy.com/
- Tenor: https://tenor.com/

MEME generator

- MEME Generator: https://imgflip.com/memegenerator

Other Useful links

- **Creative Commons** - for allowing others to use your creative works: https://creativecommons.org/use-remix/
- **Carbo** - an IOS app for quickly scanning in a drawing: https://creaceed.com/carbo
- **Ipevo Document Cameras**: https://www.ipevo.com/products
- **Skillshare** - for video tutorials in all sorts of areas including design & illustration: https://www.skillshare.com/home
- Courses.lumenlearning.com. Available at: <https://courses.lumenlearning.com/edpsy/chapter/creative-think/>

Methodologies and activities to promote, develop and prosper creative and critical thinking. (Lucas and Spencer 2020, pp. 41- 42).

Whatever pedagogical approach you choose, and whatever environment you find yourself in, there are two important approaches which will be helpful - split-screen teaching and visible thinking. Both of these play an important role in making explicit connections between creative thinking and the world of disciplinary knowledge, by which most schools are organised and which appears on student timetables, and the need to make these kinds of linkages visible and routine. Split-screen teaching invites teachers to describe two worlds, the disciplinary subject matter of their lesson and the capability on which they are also focusing. As part of the evolution of Building Learning Power, teachers have found it helpful

to think explicitly about their teaching as having two 'screens.? One screen is the knowledge and skills and the other is capability. Let's say you were introducing a science activity to understand the properties of acids and bases, then pupils were to prepare a short demonstration for other pupils, who would in turn offer feedback to their peers on the effectiveness of their explanations. Or in a history lesson, students might be looking at the causes of the First World War at the same time as they are exploring aspects of critical thinking, such as the use of primary sources of evidence.

In the imaginary split screen of the lesson and its objectives, a teacher would take care to explain to the class that both the chemistry (acids and bases) and the Creative thinking (giving and receiving feedback) objectives were equally important The visible thinking approach, initiated by Harvard University's Project Zero, has identified a number of important thinking routines which help pupils to develop capabilities such as creative thinking. As its website puts it:

Routines exist in all classrooms; they are the patterns by which we operate and go about the job of learning and working together in a classroom environment. A routine can be thought of as any procedure, process, or pattern of action that is used repeatedly to manage and facilitate the accomplishment of specific goals or tasks. Classrooms have routines that serve to manage student behaviour and interactions, to organising the work of learning, and to establish rules for communication and discourse. Classrooms also have routines that structure the way students go about the process of learning.

In this book we are most interested in the kinds of routines which make explicit connections between knowledge domains - science, history, art, for example and the fifteen aspects of creative thinking which we are exploring. There are some core routines which work well, of which these are three examples:

1. What makes you say that? Students are asked to describe something, such as an object or concept, and then support their interpretation with evidence; an interpretation with justification routine.

2. Think-puzzle-explore: Students are invited to think, then puzzle, then explore ideas when they are beginning a topic to help develop their own questions to investigate; a routine that sets the stage for deeper enquiry.

3. Think-pair-share: Students are encouraged to think about something such as a problem, question or topic, and then articulate their thoughts; a routine for active reasoning and explanation.

Indeed, a good number of Project Zero's thinking routines will be relevant for introducing topics with an explicit focus on the five creative thinking habits.

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