Curriculum Development: Writing Learning Outcomes

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Outcomes-based learning design

Curriculum design is a complex process, with potential for "fragmentation and disjointed thinking" (O'Neill et al., 2014: 268) if not carefully planned and sequenced. Considered curriculum planning is extremely important, particularly when working within modular systems in order to ensure coherence, sequencing and relevance of a programme of study and its teaching, learning and assessment activities (O'Neill et al., 2014: 269).

O'Neill, G., Donnelly, R. & Fitzmaurice, M. (2014) Supporting programme teams to develop sequencing in higher education curricula. *International Journal for Academic Development*, 19(4): 268-280. http://dx.doi.org/10.1080/1360144X.2013.867266

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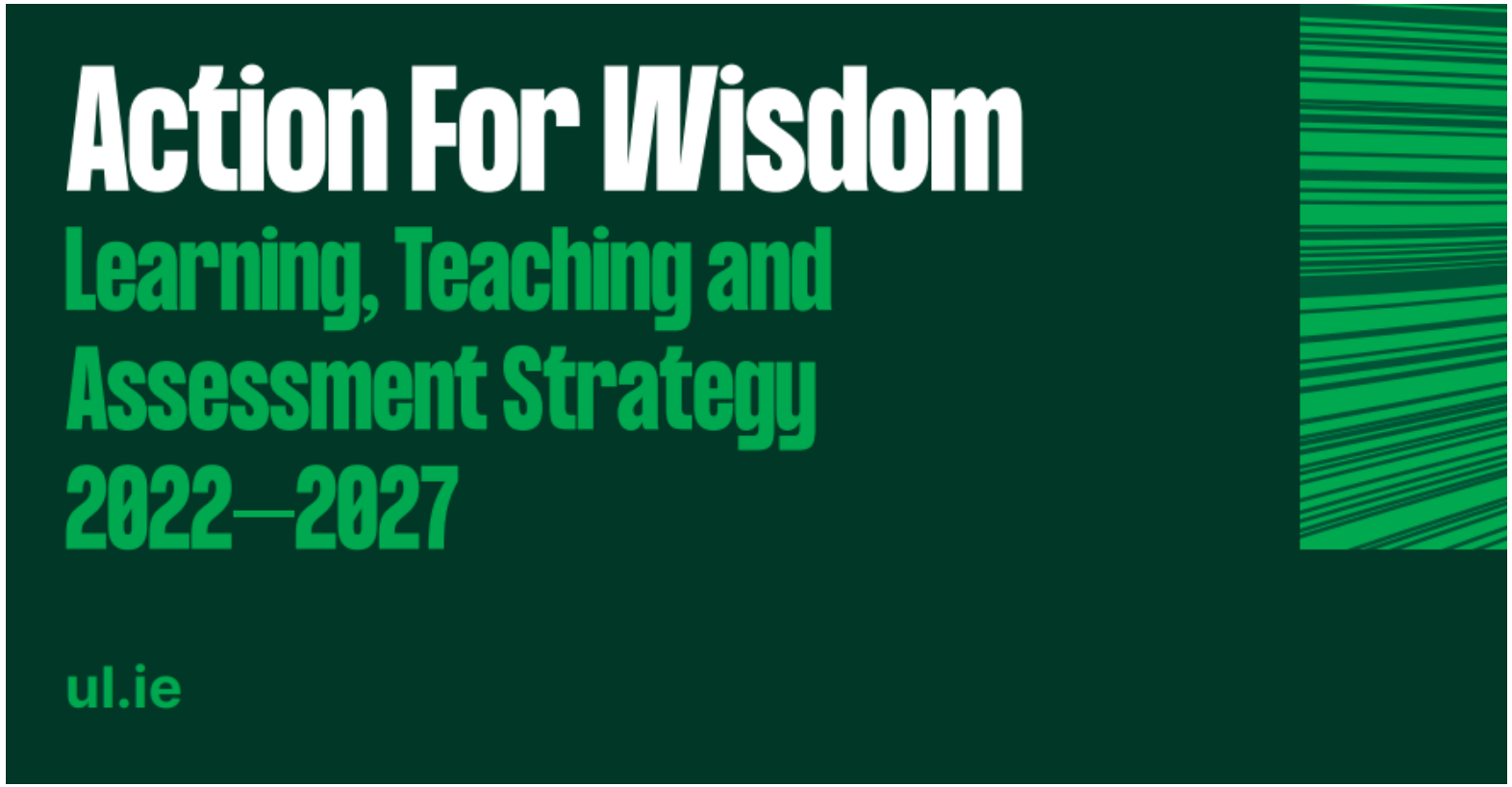
Context



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Transforming the Curriculum

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AIM

Adopt an Integrated Curriculum Development Framework (ICDF) that embeds the synergy between teaching and research through research-led, challenge driven, experiential, collaborative learning modes and fosters cross-disciplinary sharing and exchange.

ACTION

Implement the ICDF to guide and support programme development, mapping content, pedagogy and learning for sustainability, in line with national and international standards to ensure clear and streamlined academic programmes.

OUTCOME

UL programmes that will be dynamic and co- constructed, with a responsive and sustainably responsible curriculum that provides an enhanced, accessible, quality-assured student learning experience in the development of skills and knowledge for the future of work.

UL's ICDF: Principles

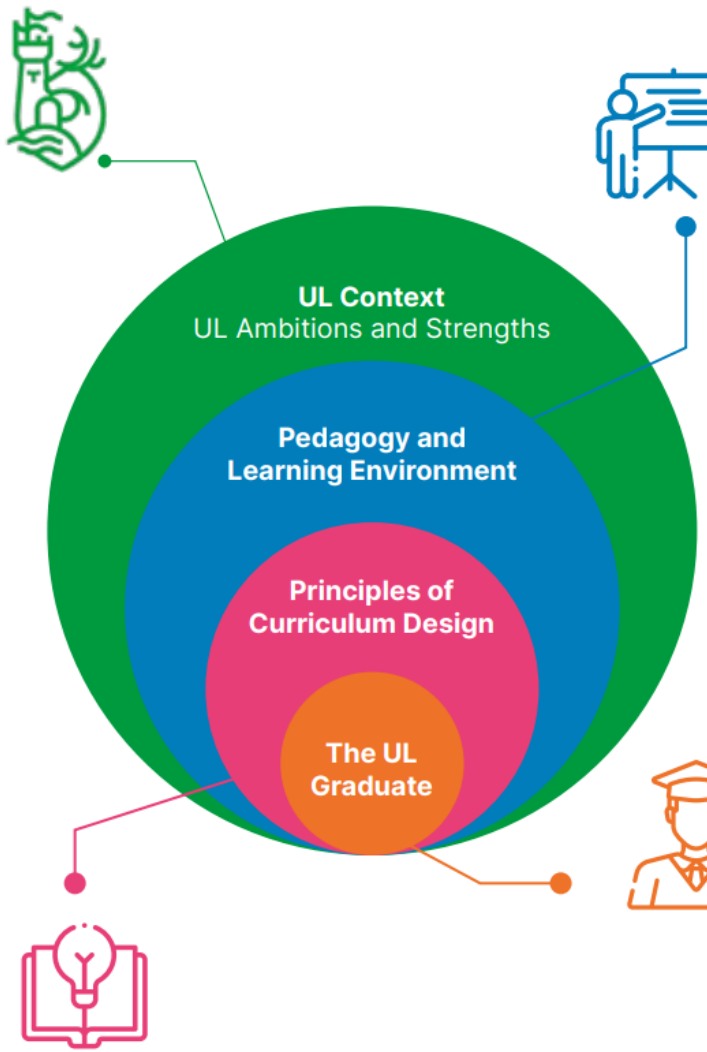
UL Context
UL Ambitions and Strengths

- **Ambitions**
  - Growing our academic reputation
  - Educating outstanding graduates and active citizens
  - Actively engaging with our city and our region
  - Embracing and promoting an open and welcoming campus for all
  - Continually challenging our ambitions
- **Build on existing strengths**
  - Research and educational excellence
  - Enriching/supportive student experience
  - Innovative pedagogy and experiential learning
  - Internationalisation
  - Work-integrated Learning
  - Building graduate capital
  - Community of scholars
  - Unique commitment to learning and teaching

Principles of Curriculum Design

The Principles of Curriculum design are founded on academic excellence and integrity:

- Programme-focused
- Co-constructed
- Connected and coherent
- Dynamic and innovative (Future thinking)
- Inclusive
- Responsive
- Responsible
- Scholarly
- Discipline-based
- Professionally contextualised



Pedagogy and Learning Environment

The Pedagogy and Learning Environment foster a transformative learning experience.

- Student-centred
- Flexible
- Inclusive
- Active
- Transformative
- Enacted / Applied
- Multidisciplinary
- International
- Technology-enhanced
- Research-informed

The UL Graduate

The UL Graduate is an active and globally engaged citizen:

- Agile
- Articulate
- Courageous
- Curious
- Responsible

UL's ICDF: Process

Timeline	Curriculum Development Activities	Alignment
12-18 months prior 9-18 months prior	Scoping and appraisal Programme Design » Educational Philosophy » Curriculum Model » Programme Aims » Programme Structure » Programme L, T & A Strategy » Constructive Alignment » Module Design » Learning Environment	**Programme Creation: Design Phase I** (pre-approval)
9-18 months prior	Programme Approval	**Programme Approval**
6 months prior	Curriculum Development » Programme teams work together to develop the learning activities (including learning pathways, assessment materials, etc.) for each module.	**Programme Implementation: Design Phase II** (post-approval)
Programme commencement	Rollout	**Programme Delivery**
Ongoing	Evaluation (programme review, re-design and re-validation)	**Programme Review**

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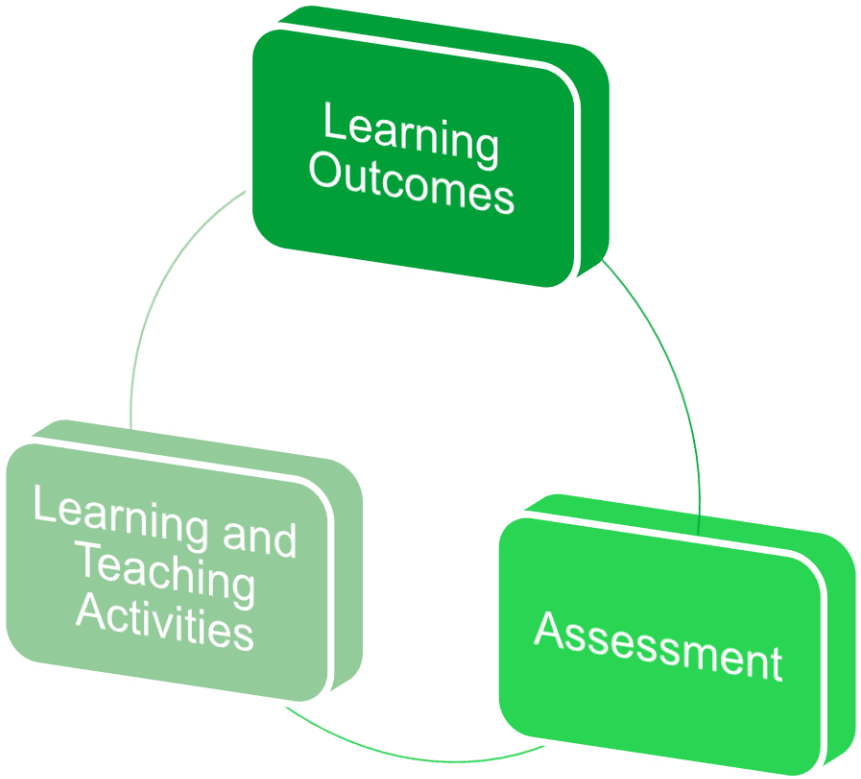
Constructive Alignment



The fundamental principle of constructive alignment is that a good teaching system aligns teaching method and assessment to the learning activities stated in the objectives so that all aspects of this system are in accord in supporting appropriate student learning.

(Biggs, 1999, p. 25)

Biggs, J. (1999) *Teaching for Quality Learning at University*. Buckingham: SRHE/OU Press.

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What are learning outcomes?

What are programme learning outcomes?

- A programme learning outcome is a statement of what a learner is expected to know, to understand or to be able to do upon successful completion of a programme.

What are module learning outcomes?

- A module learning outcome is a statement of what a learner is expected to be able to do upon successful completion of a module.

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Programme learning outcomes

- When writing programme learning outcomes, the expectation of a successful graduate should be evident and in line with the National Framework of Qualifications (NFQ) defined standards.
- The NFQ's major award-type descriptors are default standards for HE awards.
- Active NFQ Standards for Higher Education can be found here: QQI Awards standards | Quality and Qualifications Ireland
- Specified standards of **knowledge, skills** and **competence** at each of the ten NFQ award levels are outlined in the programme learning outcomes at each award level.
- Professional body expectations are also reflected in the programme learning outcomes as well as UL expectations in line with the ICDF.

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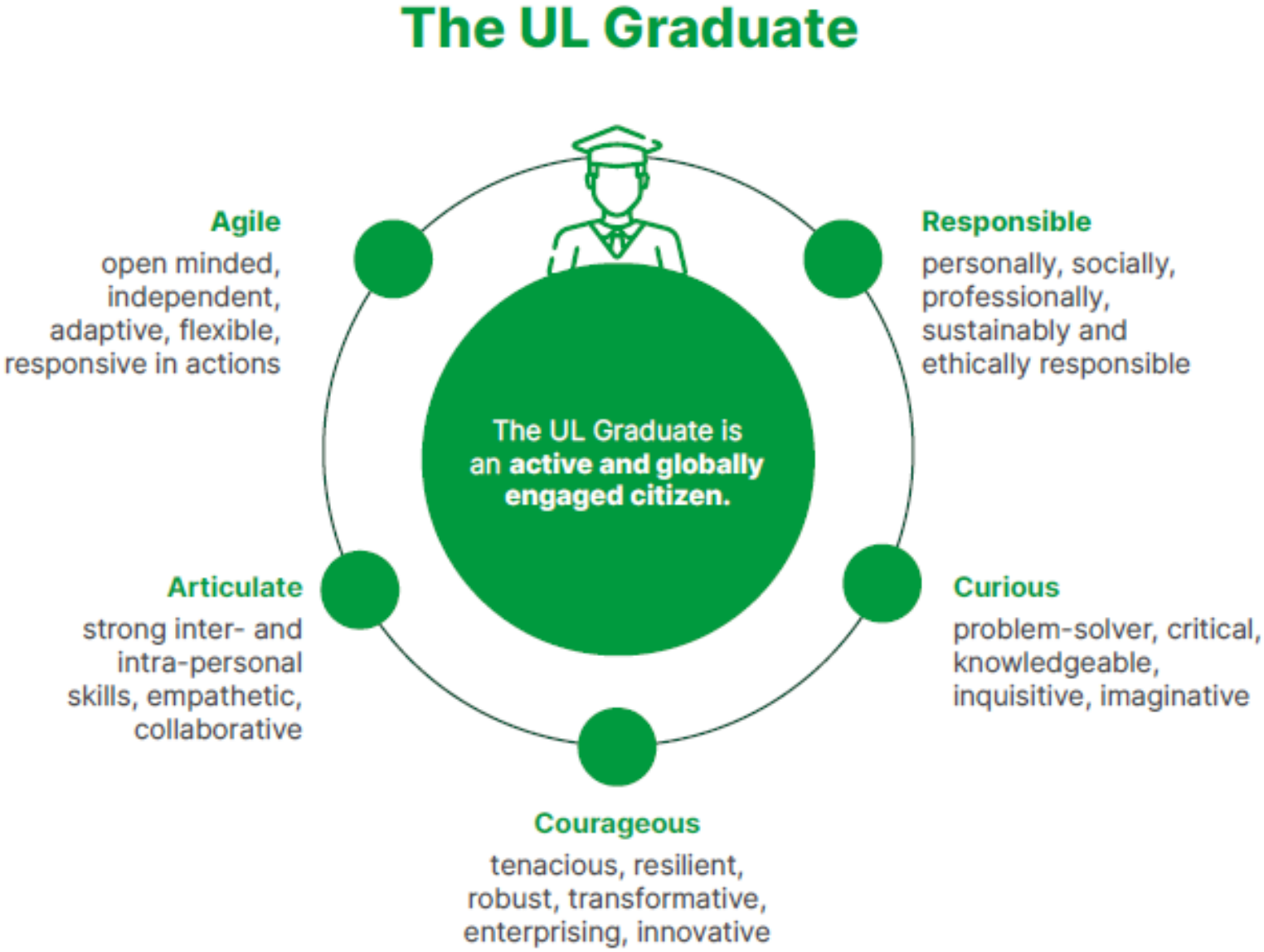
ICDF Principles:

The UL Graduate



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Programme learning outcomes

- A list of programme learning outcomes should commence with the following phrase:
  - On successful completion of this programme, the graduate will…
- This statement will be followed by a list of statements which indicate what the graduate will know or be able to do upon successful completion of the programme.
- The statements are organised into three strands, in accordance with NFQ active standards for HE:
  1. Knowledge - Breadth and Kind
  2. Know-how and Skill - Range and Selectivity
  3. Competence - Context and Role; Learning to Learn; and Insight

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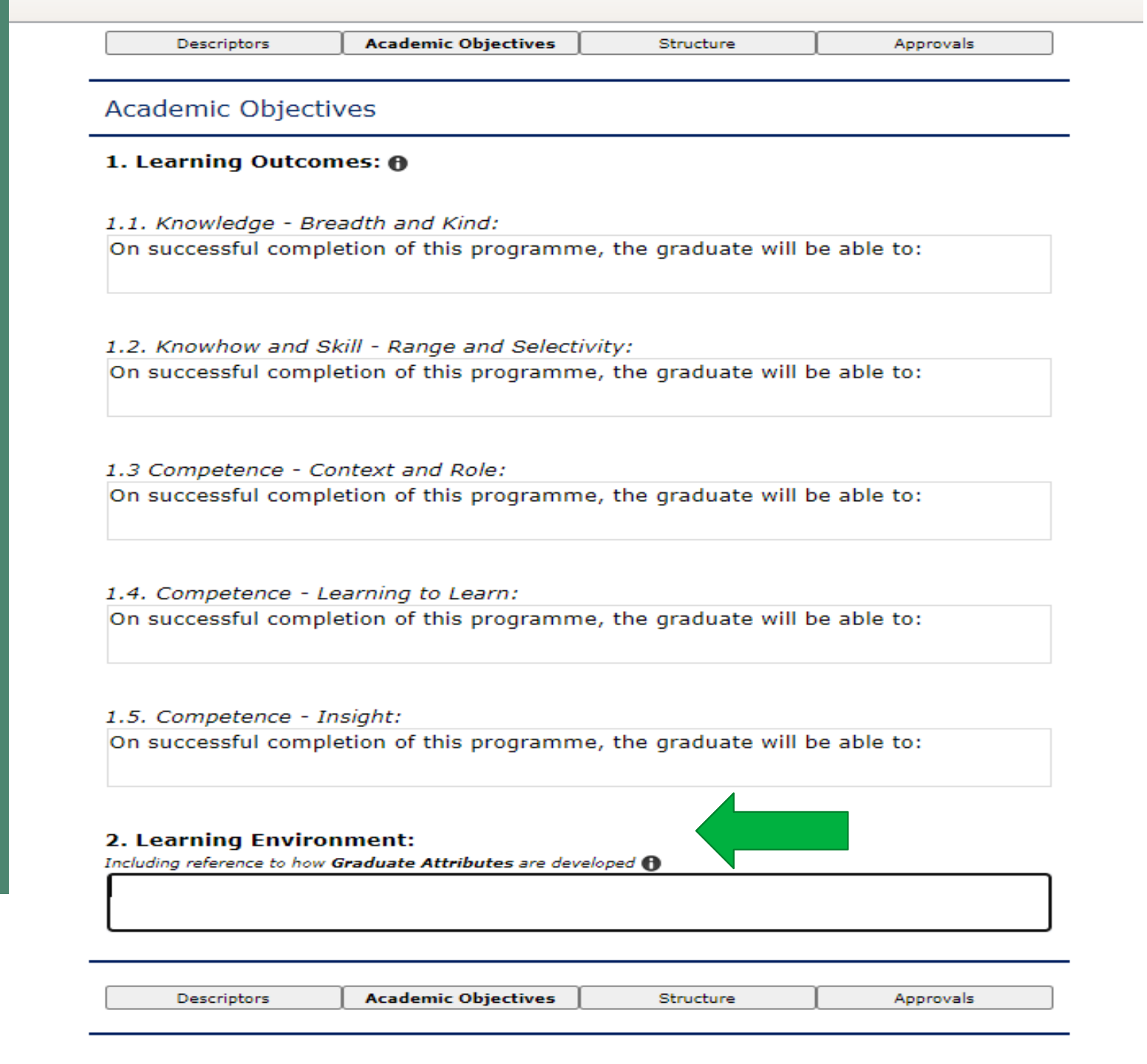
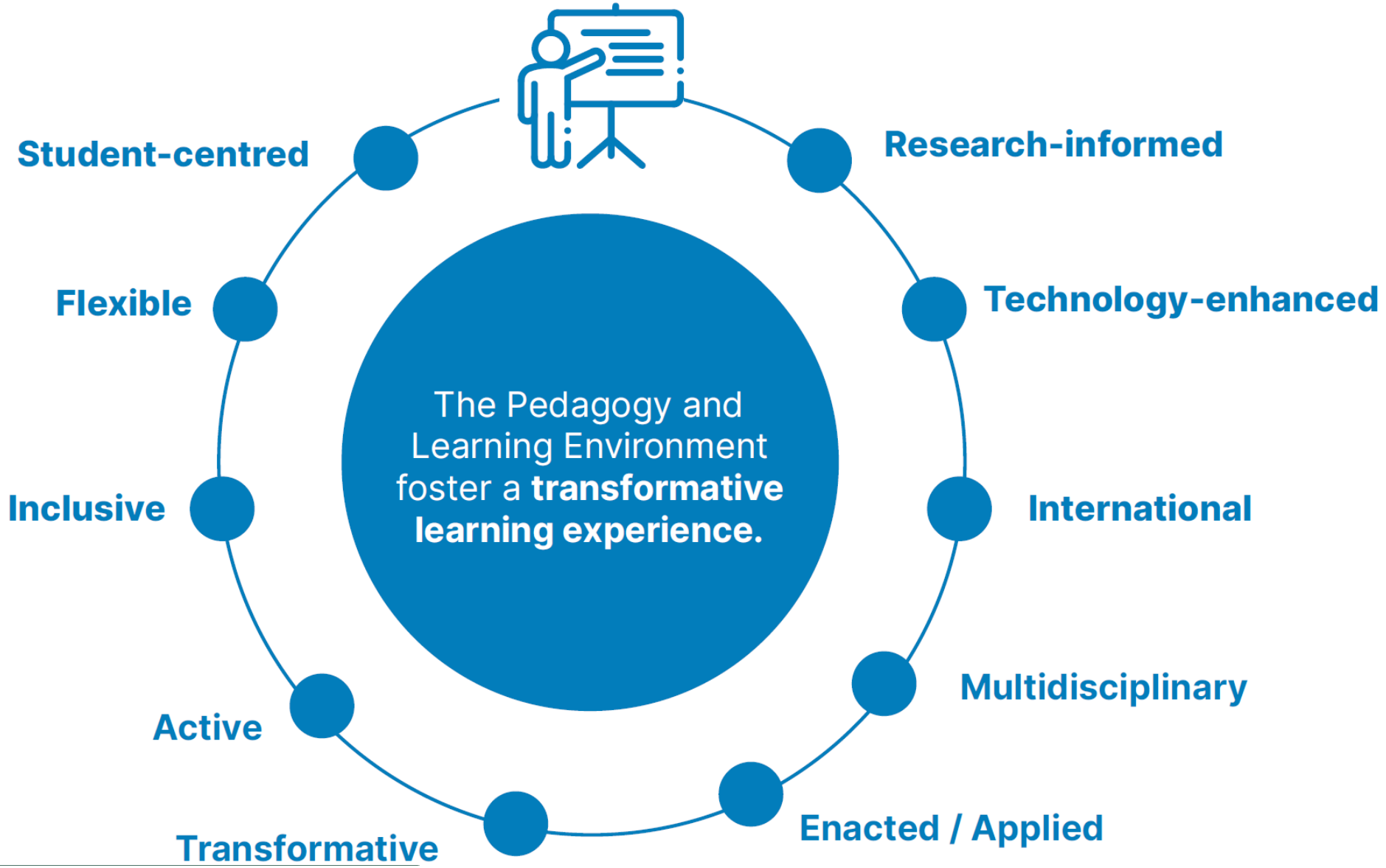
APRC
Accreditation Site



ICDF Principles:

Pedagogy/ Learning Environment



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Module learning outcomes

- A module learning outcome is a statement of what a learner is expected to be able to do upon successful completion of a module.
- While programme learning outcomes incorporate statements of what a student is expected to know, to understand or to be able to do upon successful completion of a programme, module learning outcomes are written in such a way that they clearly indicate how the students will demonstrate their knowledge, understanding, skill or competence.
- Learning outcomes can specify behaviour in one of three domains: **cognitive, affective or psychomotor.**
- A list of module learning outcomes should commence with the following phrase:
  - On successful completion of this module, students will be able to…
- This phrase is followed by a list of statements, which commence with an action verb that allows students to demonstrate that they have achieved the learning outcomes.

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APRC Accreditation Site

Academic Objectives

1. Syllabus

2. Learning Outcomes:

2.1. Cognitive:

On successful completion of this module, students will be able to:

Note: *Rationale Includes Knowledge, Understanding, Application, Analysis, Evaluation and Synthesis*

2.2. Affective:

On successful completion of this module, students will be able to:

Note: *Affective Includes Attitude and Values*

2.3. Psychomotor:

On successful completion of this module, students will be able to:

Note: *Psychomotor Includes Physical Skills*

3. Outline How the Module is Taught and How Recent Development or Research Findings in the Subject are Included:

*Including reference to how **Graduate Attributes** are developed*

Note: *Outline how the Module is taught and the learning experiences of the students will be including recent Research findings*

Descriptors	**Academic Objectives**	Study Resources	Approvals

Learning outcomes: structure

Cognitive learning outcomes

On successful completion of this module, students will be able to

- explain the use of the structure, properties and biosynthesis of nucleic acids in professional reports and publications;
- …;
- ....

- Example take from Griffith University, Australia Writing effective course learning outcomes that are SMART (specific, measurable, attainable, relevant, and time-framed):
- *For more examples see:* ECTS User's Guide 2015 (europa.eu)

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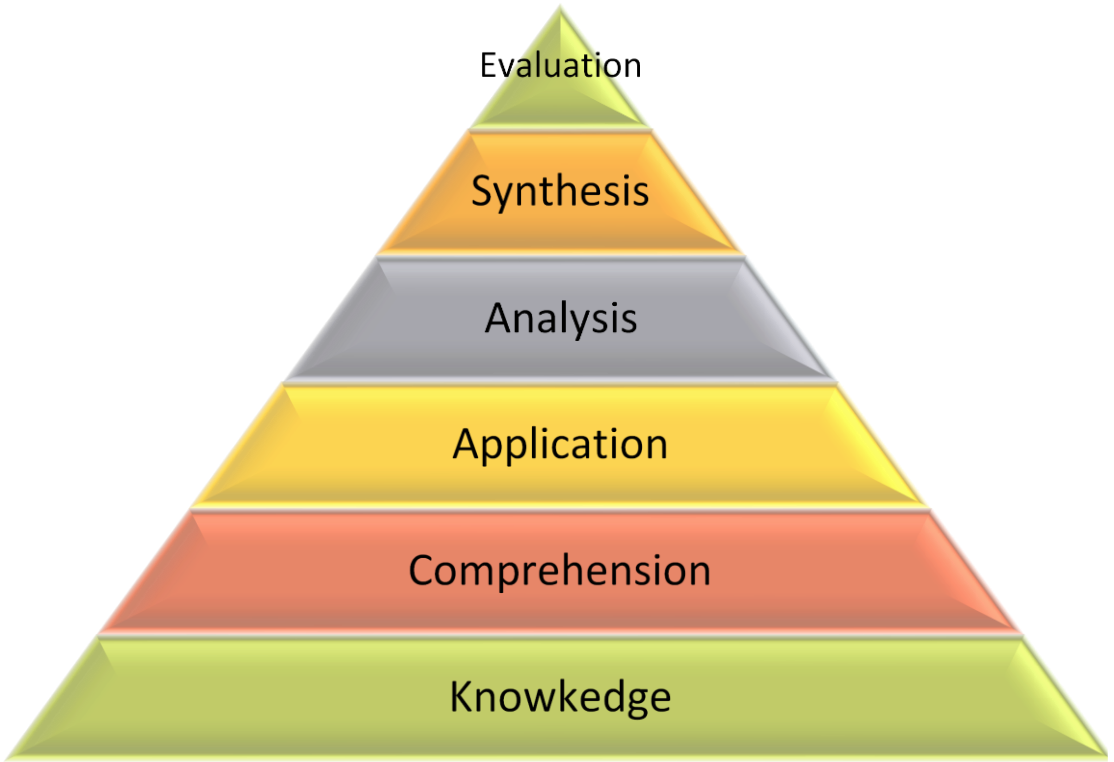
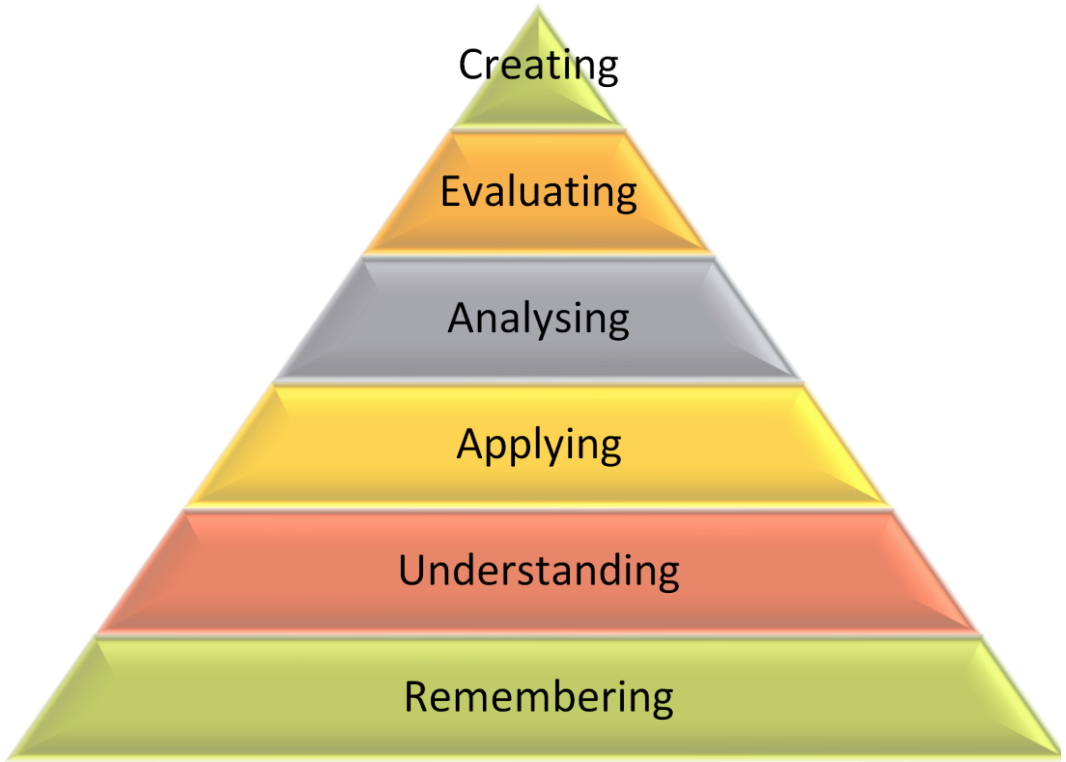
Bloom's Taxonomy: cognitive domain



Bloom's Taxonomy 1956



Anderson, Krathwohl, & Bloom's Taxonomy (2001)

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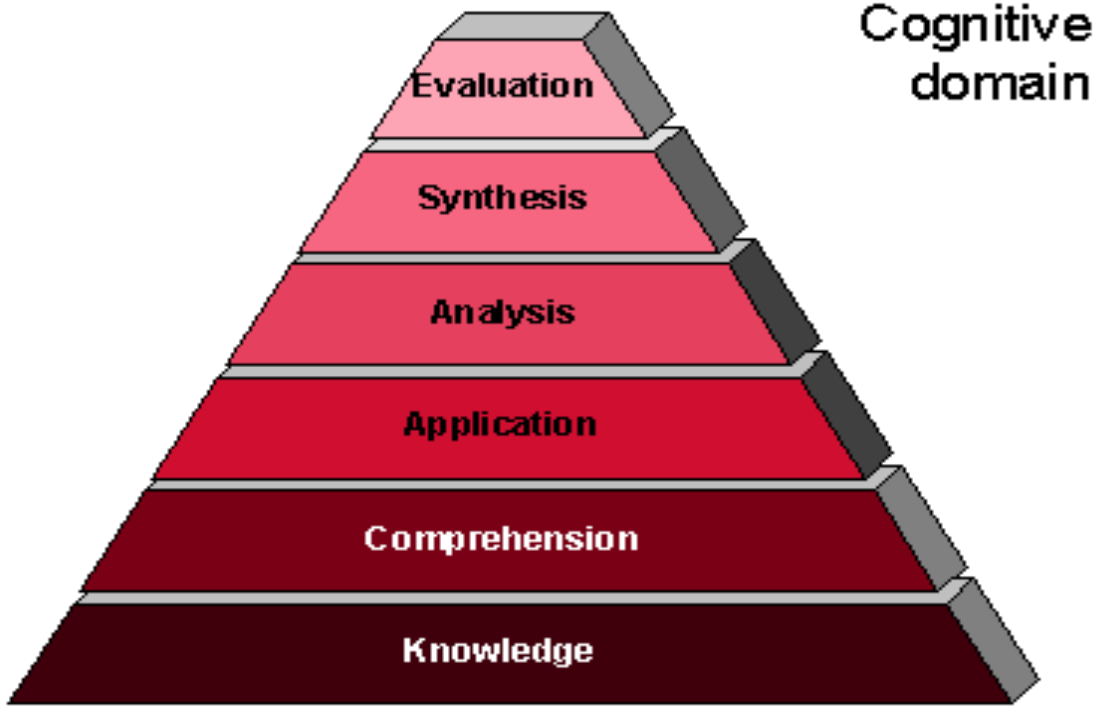
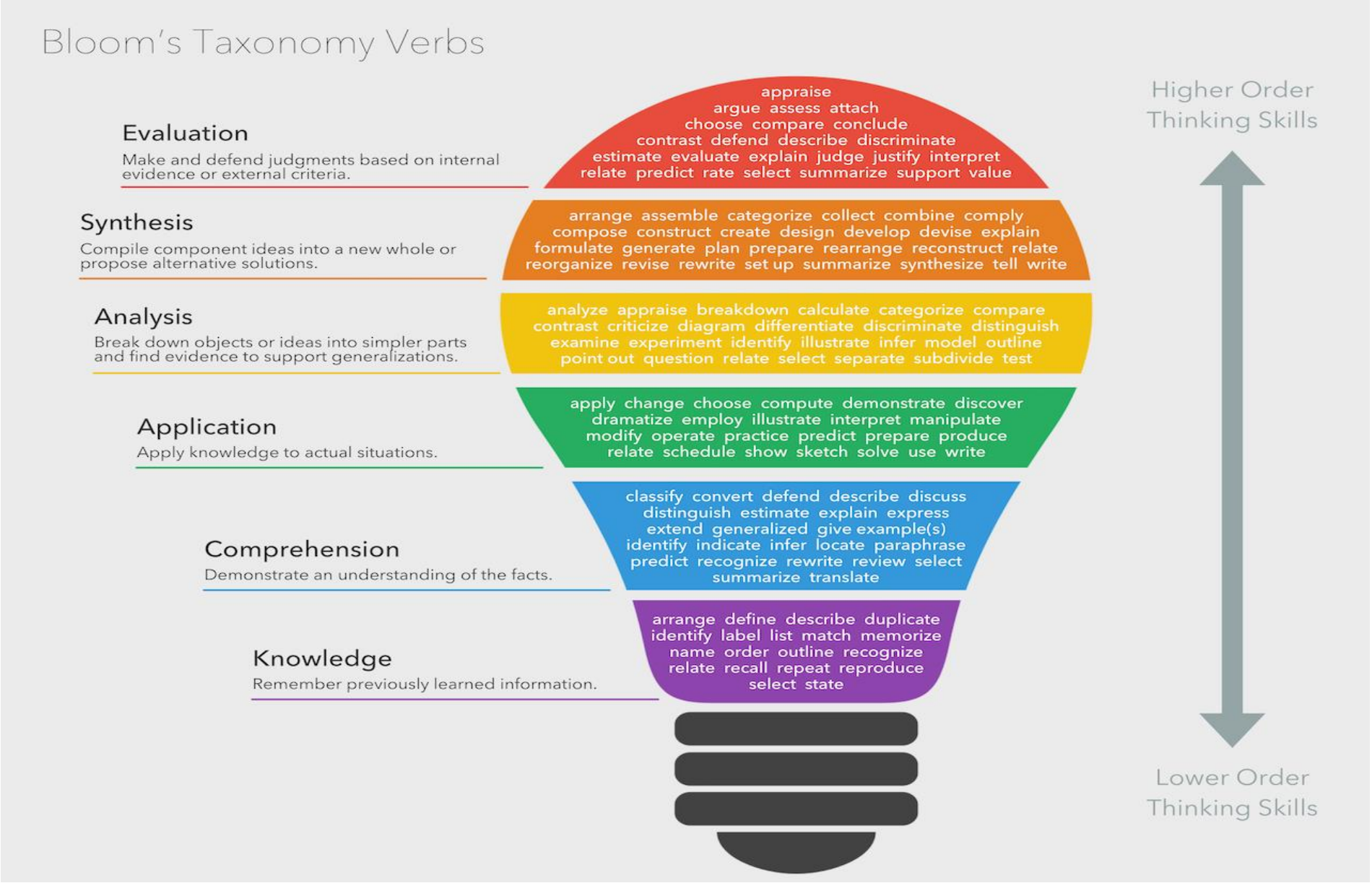
Alignment with intended learning outcomes

- Language of Bloom's taxonomy: **cognitive**, affective, psychomotor



Level	Suggested words
Evaluation	*Judge, evaluate, compare*
Synthesis	*Design, organize, formulate*
Analysis	*Analyze, test*
Application	*Demonstrate, illustrate*
Comprehension	*Describe, explain, discuss*
Knowledge	*Define, list, name,*



Key things to consider: SMARTIE LOs (Newton 2024)

- Be **specific** and use language that students will understand.
  - Start each statement with an action verb that clearly indicates the level of learning required of a student. Avoid verbs that are vague and subject to interpretation.
- Ensure that each identified learning outcome is **measurable** and that it is appropriate to the level of learning of the specific programme.
- Be realistic and cognisant of what is **achievable** at the level and credit load assigned to the module.
- Ensure that learning outcomes are **relevant** and **timebound** and that they align with the assessment, programme and discipline, for example.
- Learning outcomes should be i**nclusive** and visible (**evident**) to learners.

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Examples

- Rewrite the following
  - Understand
  - Be aware of
  - Know
  - …

- Keep in mind:
  - Prior learning
  - Expertise (novice … expert)
  - Cognitive level (knowledge … problem-solving)

Overall design of a course: Key questions
(Light *et al.*, 2009: 80)

1. What learning outcomes do you want your students to achieve (intellectual, social, practical and personal) as a result of taking your course? (Design purpose)
2. How will your course help your students achieve these learning outcomes? (Teaching and learning strategies)
3. How will you know if the students on your course have achieved these learning outcomes? (Transformation of knowledge? Assessment?)
4. How will you know if and how your teaching has contributed to your students' learning outcomes? (Feedback – from where: evaluation and feedback, evidence of learning in class, evidence in assessments etc.)

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Bloom's Digital Taxonomy

FRACTUS LEARNING

Bloom's taxonomy	Bloom's modified taxonomy	Bloom's extended digital taxonomy	Functional Levels	Activities with digital tools	
		Sharing	Publicly sharing, publishing, broadcasting	Contributing to open social networks, publishing, broadcasting, networking	Higher Order Thinking Skills
Evaluation	Creating	Creating	Designing, constructing, planning, producing, inventing, devising, making	Programming, filming, animating, blogging, video blogging, mixing, re-mixing, wiki-ing, videocasting, podcasting, directing	
Synthesis	Evaluating	Evaluating	Checking, hypothesising, critiquing, experimenting, judging, testing, detecting, monitoring	Blog commenting, reviewing, posting, moderating, collaborating, refactoring, testing	
Analysis	Analyzing	Conceptualizing	Comparing, organising, deconstructing, attributing, outlining, finding, structuring, integrating	Hacking, mashing, linking, validating, reverse engineering, cracking	
Application	Applying	Applying	Implementing, carrying out, using, executing	Running, loading, playing, operating, uploading, sharing with group, editing	
Comprehension	Understanding	Connecting	Interpreting, summarizing, inferring, paraphrasing, classifying, comparing, explaining, exemplifying	Boolean searches, advanced searches, blog journaling, tweeting, categorizing, tagging, commenting, annotating, subscribing	
Knowledge	Remembering	Doing	Recognizing, listing, describing, identifying, retrieving, naming, locating, finding	Bullet pointing, highlighting, bookmarking, group networking, shared bookmarking, searching	Lower Order Thinking Skills

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Further reading

- For more on writing effective learning outcomes, see CTL's Tips for Writing Programme and Module Learning Outcomes. These guidelines should be used in conjunction with UL's comprehensive guide to *Writing Learning Outcomes: A Guide for Academics*, which is available here: Writing Learning Outcomes at Programme and Module Levels.doc.
- Quick Tips for Teaching Online: Constructive alignment: using Bloom's Digital Taxonomy in curriculum design to align teaching, learning and assessment
- Griffith University, Australia has an excellent resource on writing effective course learning outcomes that are SMART (specific, measurable, attainable, relevant, and time-framed): https://teaching-resources.griffith.edu.au/writing-smart-los/story_html5.html?

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Consultation on curriculum design

Dr Íde O'Sullivan and Dr Geraldine Grimes are Senior Educational Developers at the Centre for Transformative Learning, where they are Curriculum Development Leads.

For further advice on curriculum design and development, please contact the Curriculum Development team at **curriculumdevelopment@ul.ie**

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