Higher Education
Academy

TRANSFORMING TEACHING
INSPIRING LEARNING

OUR (CLTHE) JOURNEY

- Self Assessment
- Action Planning
- Target Setting
- Implementation
- Reflection
- Review
- Evaluation

Curriculum Design

FIVE CONSIDERATIONS

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Better Curriculum design involves:

1. Considering the graduate **–Attributes**
2. Agreeing **Aims Objectives and Outcomes**
3. Achieving **Constructive Alignment**
4. **Decoding your discipline**
5. Re-enforcing (gateway) **Threshold Concepts**

Graduate Attributes

Defining the Walailak University Graduate

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Graduate Attributes

- Graduate attributes detail the qualities and skills which **all** graduates should posses once they complete their course of study and engagement in student life.
- University study should broaden the student's horizon and positively influence their attitudes
- Graduate Attributes can be grouped under:
  - Academic Dimension
  - Personal Dimension
  - Transferable

Graduate Attributes

WHAT THEY ARE:

- Description of what it means to be a graduate from an HEI
  - Skills, knowledge, abilities
  - Attitude and approach to work, study and the world
- Transferable across disciplines and contexts
- Developed through teaching, experience and the process of reflection and learning
- Unique to every student – common theme with student specific focus

WHAT THEY ARE NOT:

- Not the skills you need to enter or study at University
- Unconnected to the academic discipline
- A list of things which are taught
- Intended to make every graduate the same

What kind of attributes are there?

- Subject knowledge
- Critical thinker
- Resourceful
- Confident
- Globally aware
- Problem solver
- Effective communicator
- Adaptable
- Collaborative
- And so on.....

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Why focus on Graduate Attributes

> Employability

- Employers are looking for workers with the skills, behaviours and experience for work – as well as for knowledge

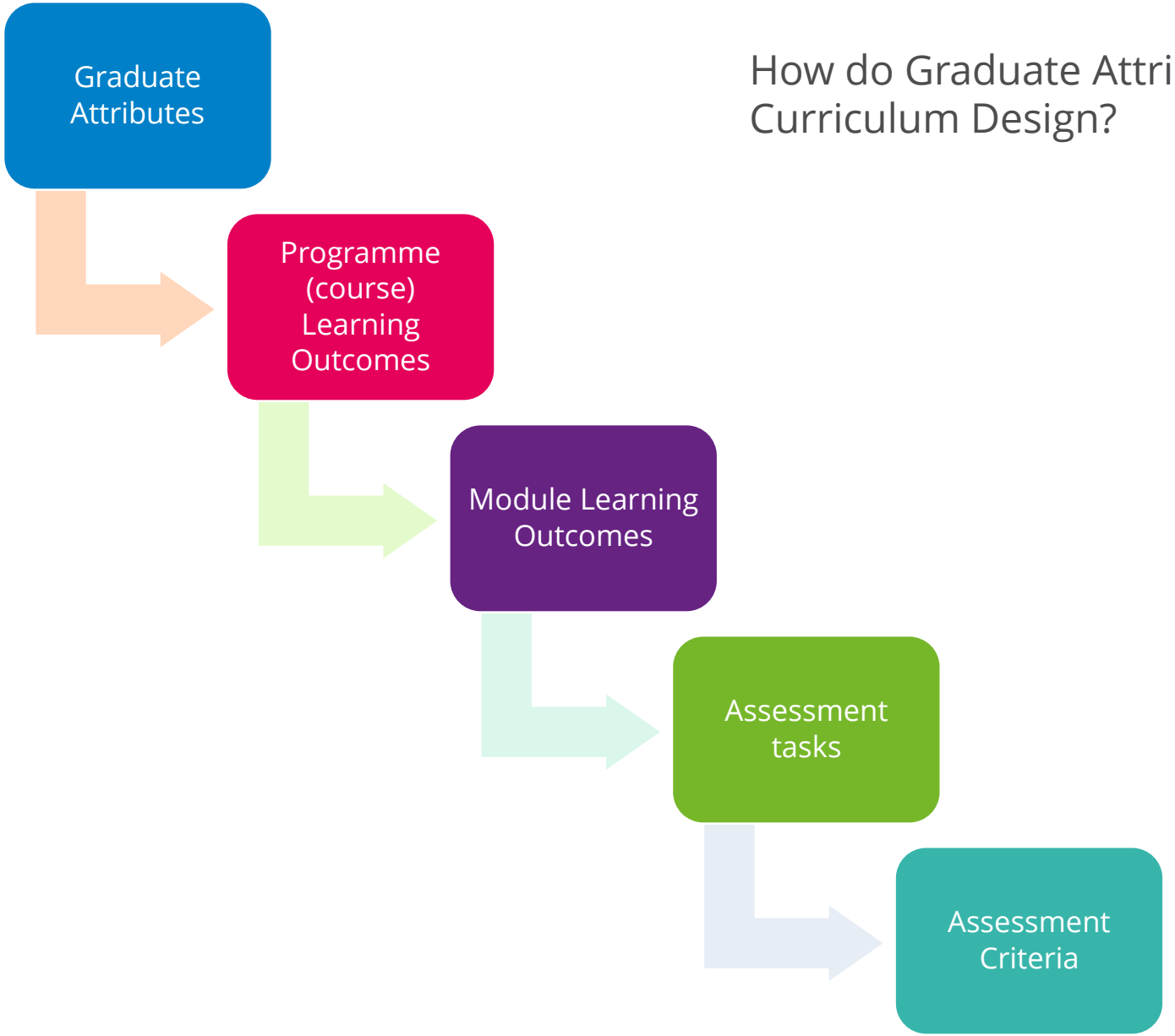
> Professionalism

- Employers and professional bodies want responsible, ethical and well grounded graduates entering their professions

> Differentiation

- In a competitive job market what differentiates a X University graduate from a Y graduate?

How do Graduate Attributes fit into Curriculum Design?



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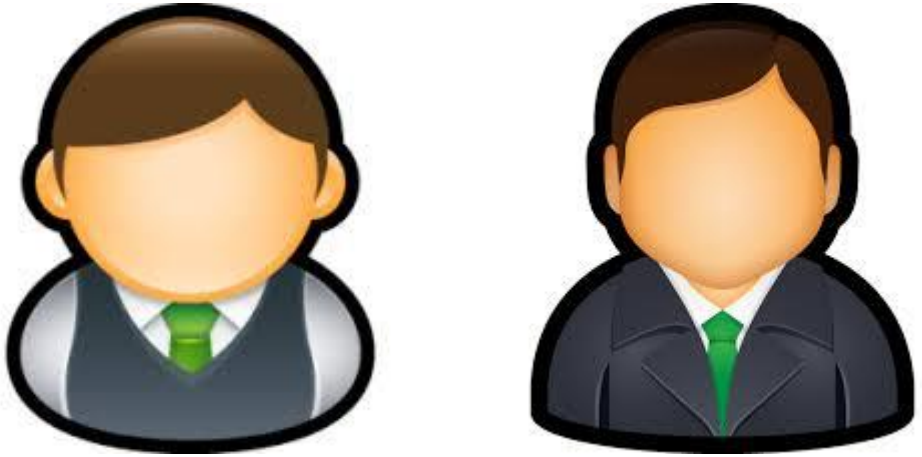
Activity

Walailak Graduate Attributes

- Lets think about what attributes YOUR Graduates have
- Irrespective of discipline what does everyone who studies at WALAILAK leave with?
  - Think of skills
  - Think of attitudes
  - Think of abilities
  - Think of behaviours
- Using the silhouettes and the cards (there are blank ones for new ideas) identify some attributes everyone has irrespective of their course
- Once you’re done we will produce a composite

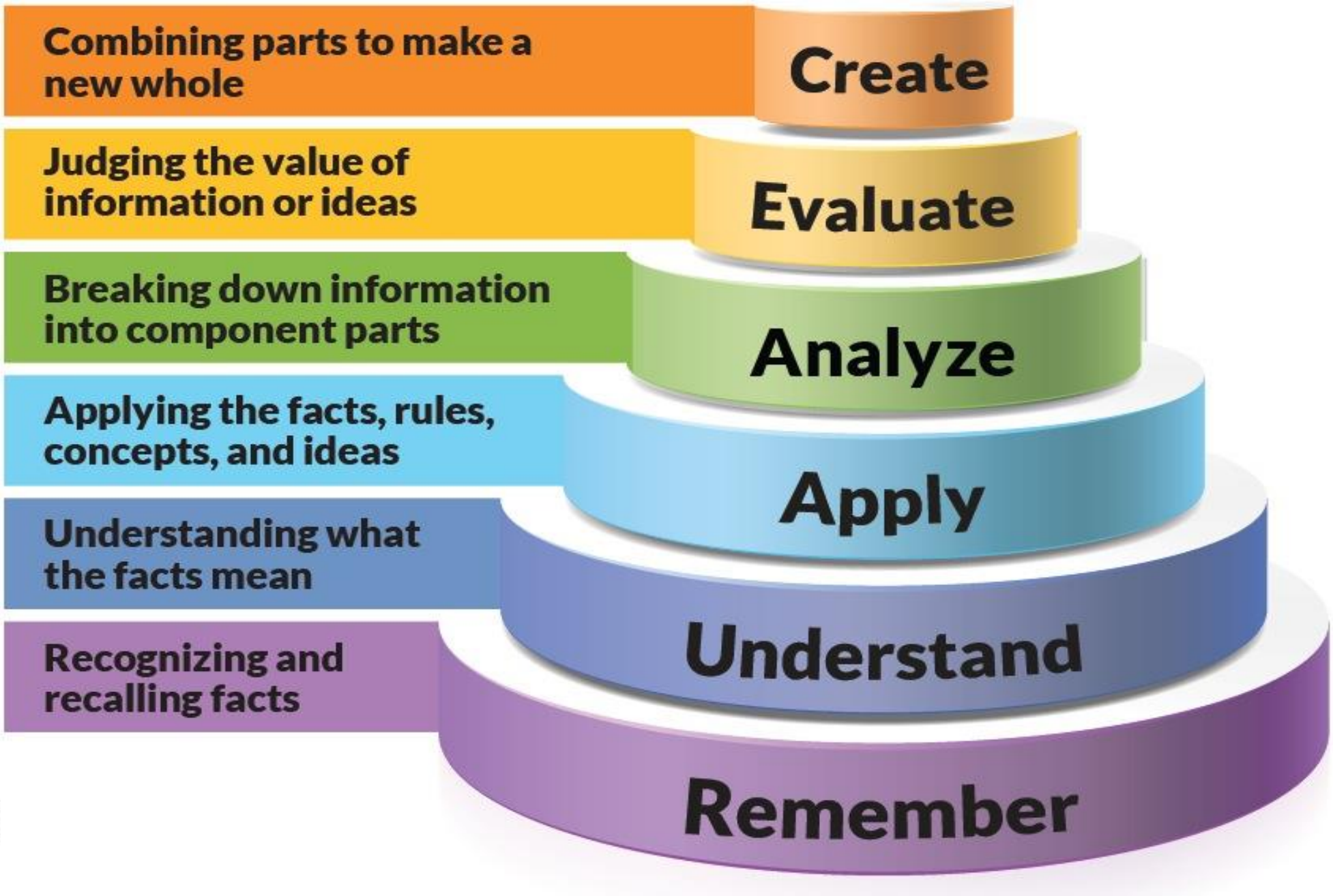
The Walailak Graduate



Focus on Outcomes

Bloom's Taxonomy

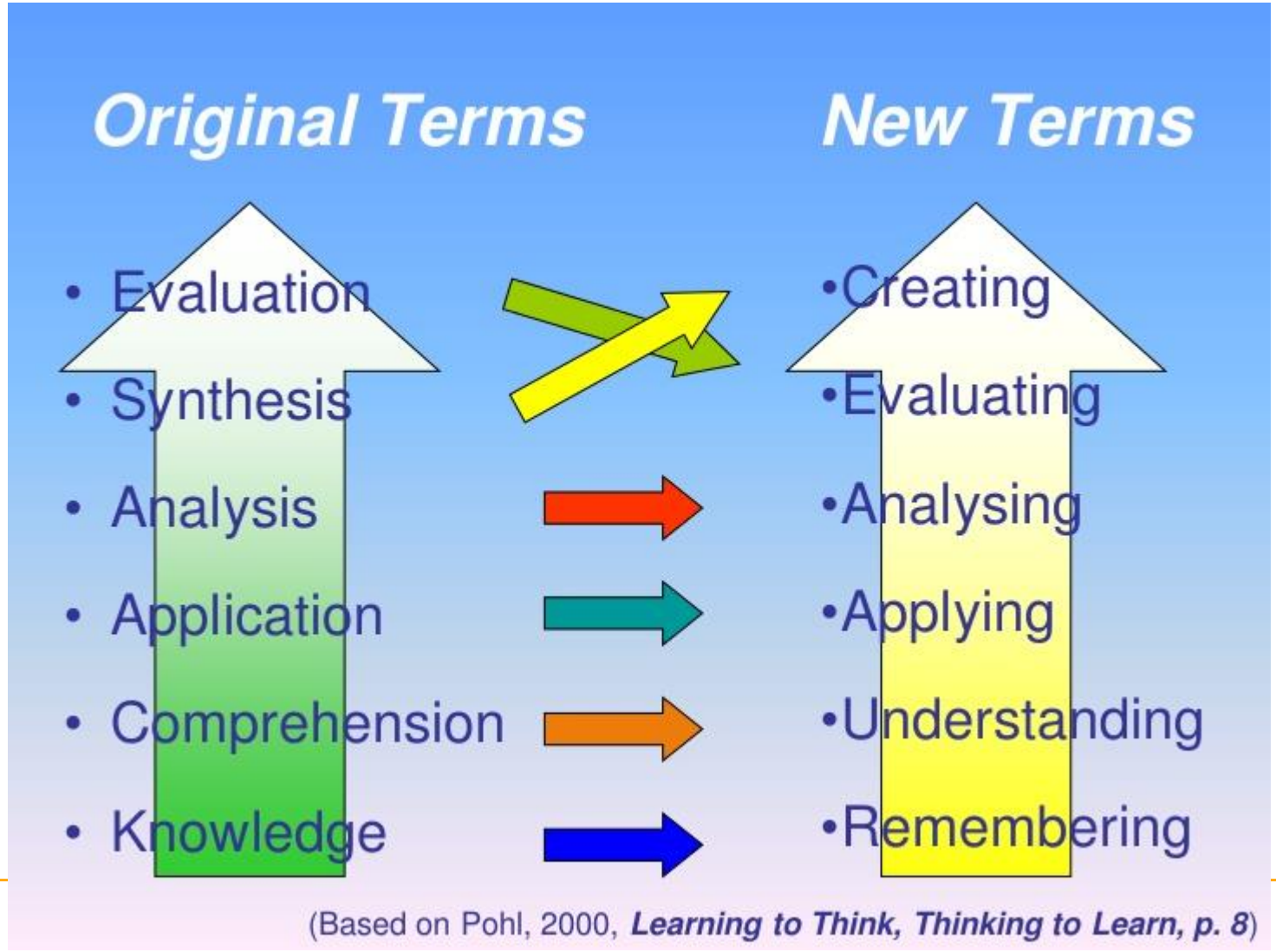
- Classifies the different objectives and skills which educators set for their students (Learning Outcomes)
- Developed in 1956 by Benjamin Bloom, an Educational Psychologist, University of Chicago
- Revised and updated in 2001 by Anderson et al
- Hierarchical with each layer intending to build on the next
- Widely used globally in education and as a model it has stood the test of time
- **Criticisms:**
  - Learners aren't empty vessels therefore we don't always start from the bottom of the model in every subject / lesson
  - Oversimplification of thought and learning – can you really separate knowing, understanding from doing and experiencing?



Bloom's Taxonomy can explain the nature of learning

- Learning is sequential and iterative:
  - Before you can ***understand*** a concept, you must ***remember*** it.
  - To ***apply*** a concept you must first ***understand*** it.
  - In order to ***evaluate*** a process, you must have ***analyzed*** it.
  - To ***create*** an accurate conclusion, you must have completed a thorough ***evaluation***.

Revision of Bloom's Taxonomy



Anderson et al (2001) revisions

- Revised Bloom's taxonomy to produce a two dimensional taxonomy
- Major revision was that the knowledge domain was sub-divided into four types of knowledge
  - Factual
  - Conceptual
  - Procedural
  - Meta-cognitive
- Second major revision was the division of cognitive processes into 6 types of thinking

Table 2. The knowledge dimension — major types and subtypes

concrete knowledge → abstract knowledge

factual	conceptual	procedural	metacognitive
knowledge of terminology knowledge of specific details and elements	knowledge of classifications and categories knowledge of principles and generalizations knowledge of theories, models, and structures	knowledge of subject-specific skills and algorithms knowledge of subject-specific techniques and methods knowledge of criteria for determining when to use appropriate procedures	strategic knowledge knowledge about cognitive tasks, including appropriate contextual and conditional knowledge self-knowledge

The knowledge dimensions	Remember	Understand	Apply	Analyse	Evaluate	Create
Factual knowledge	**List** the gases involved in respiration	**Summarise** the features of a new product	**Respond** to frequently asked questions	**Select** the most complete list of type A personality traits	**Check** for consistency amongst sources	**Generate** a log of daily activities
Conceptual knowledge	**Recognise** the symptoms of respiratory distress	**Classify** products by their Unique selling point (USP)	**Provide** advice to novices in the field	**Differentiate** between personality types	**Determine** the relevance of the results	**Assemble** a team of experts
Procedural knowledge	**Recall** how to perform CPR	**Clarify** product usage instructions	**Perform** out tests on water quality	**Integrate** knowledge of personality type and behaviour	**Judge** the efficiency of the sampling approach	**Design** a project work plan and timeline
Meta-cognitive knowledge	**Identify** strategies for retaining and recalling vital information	**Predict** sales based on prior experience and market intelligence	**Utilise** techniques to present information which match your strengths	**Deconstruct** one's own biases	**Reflect** on one's progress and development	**Create** a portfolio of your learning

Outcomes based approaches

- Defining learning outcomes can provide a useful focus for curriculum design
- Three terms are used in curriculum design:
  - Aims
  - Objectives
  - Outcomes
- **Aims**
  - Serve as a broad statement(s) or goals relating to the module or course
  - They are not specific statements about what is covered but rather they provide the overarching intentions of the course
    - **Ideally they should answer two questions**
    1. What is the purpose of this module or course?
    2. What is the course / programme or module trying to achieve?

Aim

- The CLTHE programme is designed to enable participants to:
  - reflect critically on their own experience as a learner and a teacher practitioner and enhance their practice to enable high quality student learning;
  - explore how current theory of pedagogic practice in higher education can inform and enhance their practice;
  - evaluate the potential impact of adopting innovative approaches to practice on the student learning experience

Outcomes based approaches

> Objectives

- These are the steps we take towards achieving the aims or goals
- They relate to what the teacher plans to achieve
- Objectives are probably more appropriate to programmes than modules as in a module the objectives are likely to be broadly similar to the learning outcomes

Objectives

- The specific objectives of the CLTHE programme are:
  - To introduce academic staff to the process of critical reflection
  - To explore contemporary pedagogical approaches and the underpinning educational theories behind these
  - Develop academic staff at Nankai University as leaders of pedagogical innovation in teaching and learning

Outcomes based approaches

> Learning Outcomes

- Learning outcomes are the skills, knowledge and occasionally behaviours which the student should be able to demonstrate at the end of the course, module or period of learning
- There is much debate about whether these should be aspirational or a minimum standards required to pass the course

> Issues with an outcomes based approach

- It only communicates the intended rather than the unintended outcomes
- Every student is different and therefore unintended outcomes are common
- Seen as 'spoon feeding' and prescriptive
- Written from a staff perspective rather than a student perspective e.g. what we know is different from what they think

- *At the end of the course the student will be able to describe the structure and function of the human ear*
- **STUDENT =** 'Hole in the head where sound goes in and is recognised by the brain'

Learning Outcomes

> By the end of the programme, participants will be able to:

- Engage in critical reflection of their own practice and that of their peers in the context of contemporary pedagogic practice.
- Draw on theories and concepts of learning to inform practice.
- Identify and apply a range of methods to enhance their own teaching, learning and assessment practice and their support and guidance for students.
- Design and develop effective programmes, modules and teaching sessions as well as effective learning environments (both face to face and online).
- Develop a range of assessment instruments to evidence student learning and enhance feedback to students.
- Evaluate the impact of changes to practice.

Producing outcomes

> At the **end** of the **course** students will be able to:

1. **Describe** at least one theory of learning which applies to adults
2. **Demonstrate** the application of a learning theory to the delivery of teaching in a classroom
3. **Analyse** how students learn in the work place environment
4. **Critically reflect** on their own approach as a teacher and how this facilitates or prevents learning amongst certain student groups

Producing outcomes

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All outcomes written in the future tense

Could apply to course, programme, module or lesson

Producing outcomes

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TIP
Avoid jargon and abbreviations

TIP
Aim for between 4 and 6 outcomes

Producing outcomes

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TIP
Make the outcome achievable and measurable

TIP
Include process and product – see example

For example
Process: search for a review the literature
Product: produce a report detailing the relevant literature

Producing outcomes

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Level
Select appropriate level
See below

Types of outcome
- Knowledge based
- Application based
- Skill based

Describe = recall of facts, possible demonstration of understanding – lower level skill (first year under-grad)
Critically reflect / Analyse = cognitive and meta cognitive processes – higher level skills (final year or post-grad)

How to....

- At the **end** of the **course** students will be able to:

1. **Describe** at least one theory of learning which applies to adults
2. **Demonstrate** the application of a learning theory to the delivery of teaching in a classroom
3. **Analyse** how students learn in the work place environment
4. **Critically reflect** on their own approach as a teacher and how this facilitates or prevents learning amongst certain student groups

- At least one measurable verb in each outcome
- Not entire syllabus – 4-6 outcomes for a module
- Clear and concise statement
- Achievable
- Measurable
- Appropriate level
- Mix of knowledge, application and skill
- Mix process and product

Activity

Now it's your turn…

- **Produce 4 learning outcomes for a session of your choice**

- At the end of the session students will be able to:

1. Xxx
2. Xxx
3. Xxx
4. Xxx

Feedback

Constructive Alignment

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Constructive Alignment

- Constructive alignment (Biggs, 2003) is a theoretical model for an outcome based curriculum defined as

> *"coherence between assessment, teaching strategies and the intended learning outcomes in an educational programme"*
>
> McMahon and Thakore (2006)

Why is constructive alignment important?

- **Assessment drives learning**

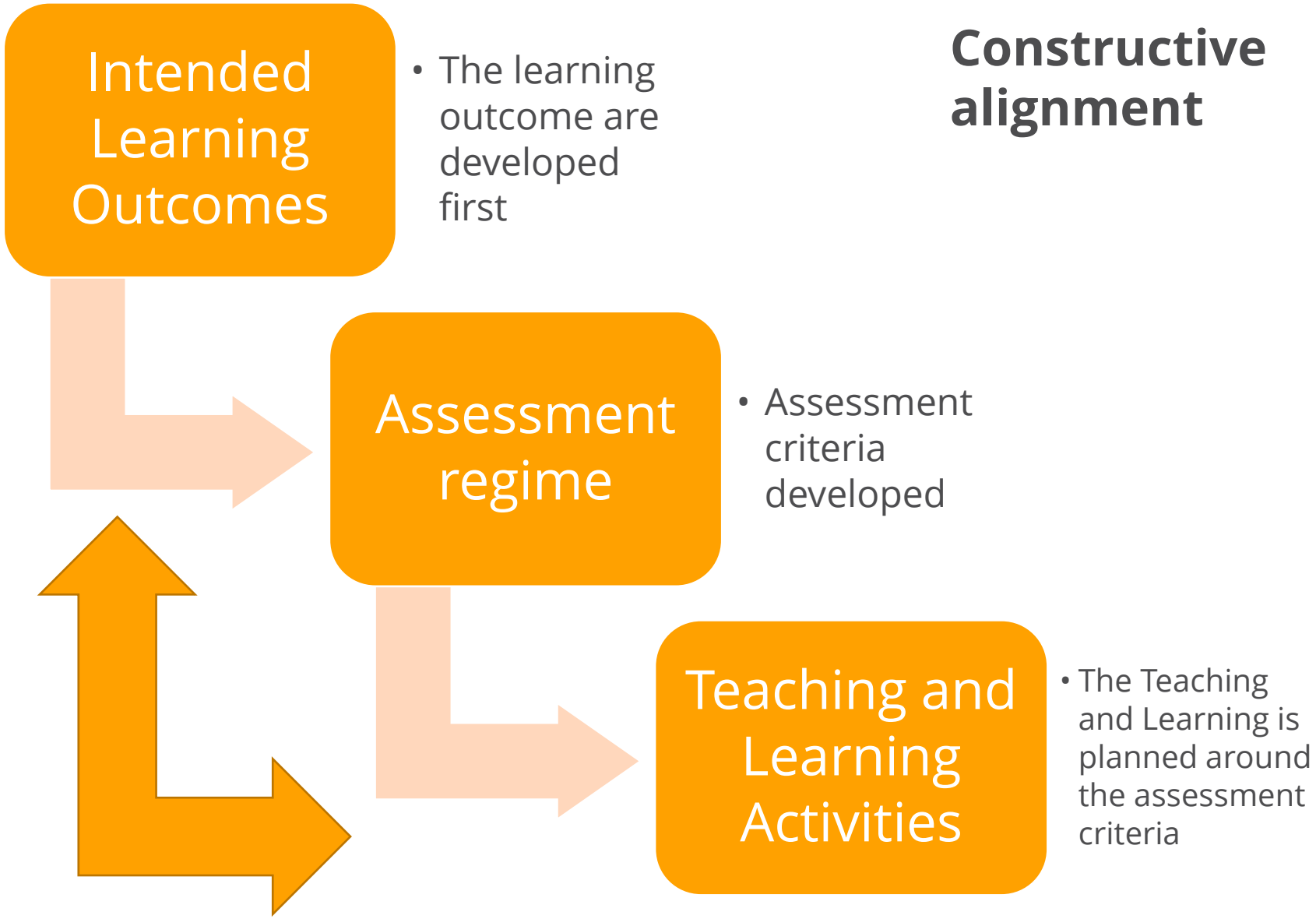
- Students learn what they will be tested on
- This 'backwash' means that **assessment** determines what and how students learn more than the curriculum does
- In a poorly aligned system the assessment would not reflect the learning outcomes resulting in learning which was not directly related to the planned curriculum

• Biggs (2003; 140)

- **If you can't beat it harness it**

- If you can not beat 'backwash' then harness it
- Design assessments which are constructively aligned to the programme or module learning outcomes

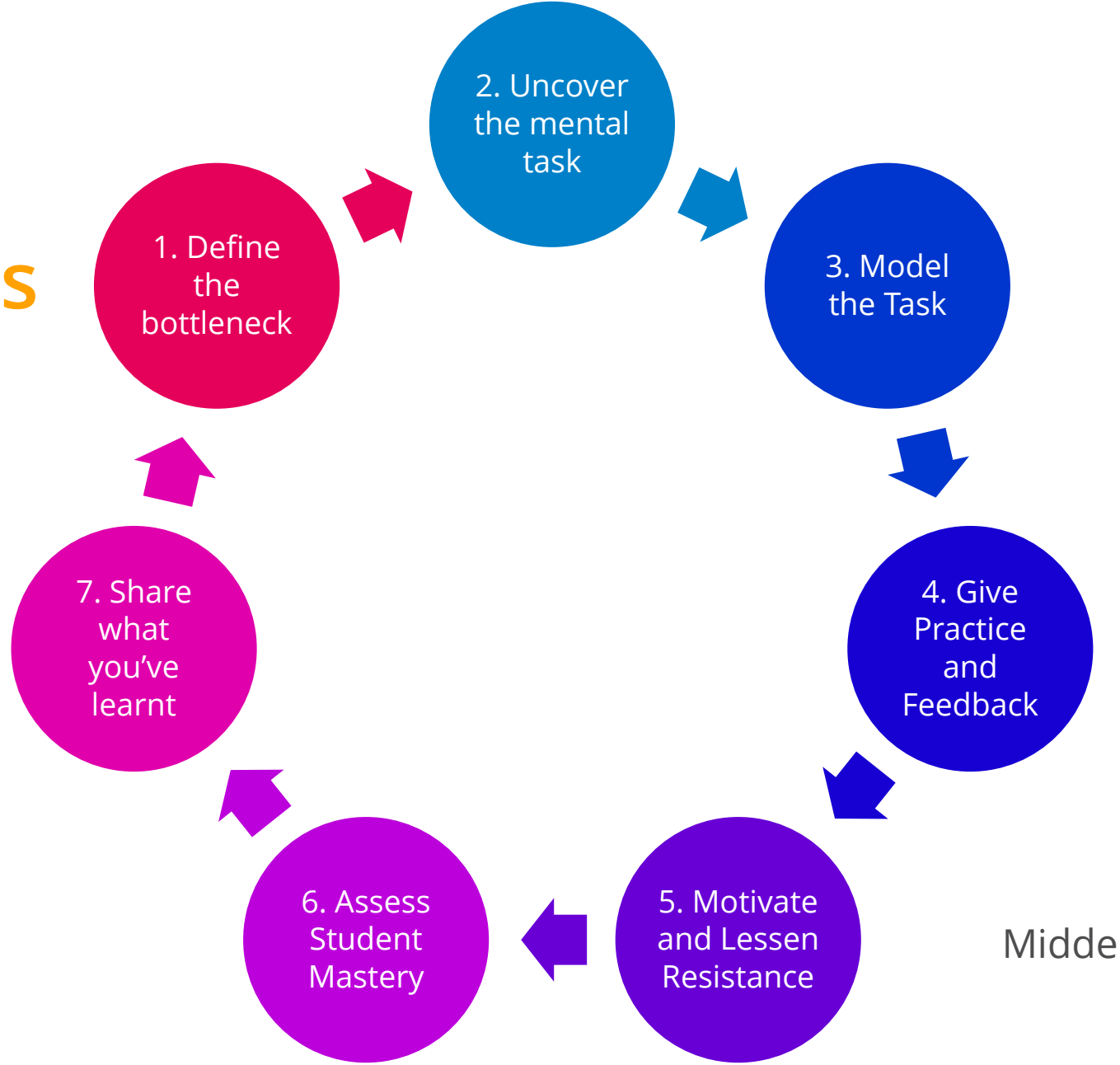
Constructive alignment



Title of Module: Evaluating and Reflecting on your Teaching.		
Outcomes On completion of this module you should be able to:	Assessment Critically reflective written report containing the following:	Teaching / Learning Activities
Monitor, evaluate and reflect on your teaching and the learning of your students	Evidence of having completed the prescribed mentoring – observation cycle. A reflective statement of personal and professional gains made from the peer observation process.	Introductory Group Tutorial – Revision of critical reflection theory (from previous modules). Seminar: Introduction to Peer Observation and the use of a Learning Contract. Peer mentor sessions.

Decoding Disciplines

Decoding the Disciplines



Middendorf and Pace (2004)

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Decoding the Disciplines

Define the Bottleneck

- A bottleneck is the place in the course where a significant number of students fail to grasp an essential concept and this prevents them from moving forward and learning

Example

- In medicine a bottleneck for students may be identifying their method of reasoning during patient assessment
- Experienced practitioners using hypothetico-deductive reasoning e.g. forming a hypothesis and then testing this from questions, physical examination and investigations
- Inexperienced staff and students often using inductive reasoning gathering lots of information before arriving at a conclusion

Decoding the Disiciplines

Uncover the mental task

- Ask an experienced practitioner how they overcome the bottleneck or how they learnt what they need to know
- May be tacit and regarded as intuitive now
- Possible mnemonics, metaphors etc

Example

- In medicine urgent / emergency assessment utlises mnemonics
- **A B C D E**
- Learning about severity, risk, probability etc.

Decoding the Disciplines

Explicitly Model the Tasks

- The teacher should break down and model / demonstrate the task to promote learning
- Repeated modelling works best
- Explain to student to mental processes at each stage

Example

- Demonstrate use of A B C D E technique in a simulated clinical setting
- Time out at each stage to talk about mental processes –
  - How you determine a hypothesis
  - How you decide question sequence
  - How you identify probability and risk

Decoding the Disciplines

Give Practice and Feedback

- Augment modelling from the teacher with opportunities to practice
- A safe supportive environment is a must
- Allow students to make mistakes and roll with these
- Correct mistakes when providing feedback – encourage student to identify error and correct it

Example

- Students can repeatedly practice A B C D E assessment in simulation as it is common to almost every scenario
- Debrief can focus on learning and mental processes involved in reasoning
- Once mastered the students skills and abilities to perform clinical reasoning can be developed further

Decoding the Disciplines

Motivate and Lessen Resistance

- Emotional bottlenecks and students feeling they will never get there are common
- Learning to motivate students through encouragement, praise, constructive feedback etc. are important to promote positive learning

Example

- Students may be reluctant to take the lead role in a simulation scenario
- Encourage them by allowing students to work in pairs, rotate through roles etc.
- Praise and feedback will support the student and encourage them to develop their learning addressing the bottleneck

Decoding the Disciplines

Assessing Student Mastery

- Before any formal (summative) assessment of the student they should undergo assessment of their learning so that they can develop further and identify gaps and continual barriers

Example

- This is best achieved through debrief and 'live' assessment during simulation or role play in medicine

- End point OSCEs (Objective Structured Clinical Examinations) would be used to test history taking, physical examination and diagnostic reasoning skills

Decoding the Disciplines

Share what you have learnt

- This is a key stage in the scholarship of learning and teaching
- We can adapt teaching methods without using the decoding cycle for future groups if we share learning with others and plan appropriate L&T activities

Example

- Simulation and debrief are commonplace in medical education but role modelling and describing how and why we make certain decisions is not
- Building in this dialogue would enhance the student's learning experience and allow them to grasp key concepts faster

Activity

Decoding the Disciplines

- Think about your own discipline / subject area
  - What bottlenecks exist for your students?
  - What subjects do they struggle to master?
  - How do you currently teach these?
  - Can you think of how you learnt them?
  - Make notes on your tables about subjects, topics that you might wish to examine using decoding principles

Feedback

Threshold Concepts

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Threshold ?

Gateway ? Stuck ?
or
passing through ?

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What are they and why focus on them?

- Threshold concepts are fundamental to the subject and essential for students to understand
- They have been described by Land et al (2005) as the ‘jewels in the curriculum’ because they are concepts that subject specialists hold to be central to the mastery of their subject.
- They are described as ‘threshold’ because they have particular characteristics

The theory of threshold concepts

- Arose from an ESRC/TLA research project which was looking at effective learning environments for undergraduates which looked at this question in 5 subject strands www.tla.ed.ac.uk/etl

- Meyer and Land were working in the economics strand and developed their theory out of their realisation that certain concepts were held by economists to be central to the mastery of their subject. If a student is unable to grasp these threshold concepts, she or he may be able to pass their exams and graduate, but they will never be able to think like an economist.

Introducing threshold concepts

- Growing body of research (derived from work of Meyer and Land, 2003,2005,2006) to suggest that within every discipline or subject, there are some ideas which hold the key to students getting it: **threshold concepts**

- They are **different for each discipline**

- They are not the whole answer, but they are necessary for authentic, genuine learning,

- If threshold concepts have not been understood, students will never ‘get it’.

Characteristics of threshold concepts

1. **Transformative** - marks an important step into the culture of the subject

2. **Irreversible** - (can't forget it, but it can be transformed or modified to refine understanding)

3. **Integrative** - allows us to see the relatedness of ideas- enables us to make connections that were previously hidden

4. **Bounded** - there will be borders with other threshold concepts

5. **Troublesome** - can be seen as counter-intuitive, unsettling

Example of a threshold concept in Teaching

- What is an ‘expert’ teacher?
  - Knowledgeable about the subject?
  - Researches the area in which she or he teaches?
  - Scholarly approach to the discipline?
  - Set of advanced teaching skills that present knowledge in such a way as to be readily understood b the students?

- All the above are characteristics of an information transmission / teacher- focussed approach to teaching (see Trigwell & Prosser, 2004)

Example of a threshold concept in teaching

- A conceptual change / student focused approach to teaching (Trigwell & Prosser, 2004) implies that:
  - what the student learns is more important than what the teacher teaches
  - Is related to learning outcomes
  - Is aimed at helping students change their views and/or conceptions of the phenomena they are studying
  - Is aimed at helping students reconstruct their knowledge
- If you really take this on board, it will change the way you understand the whole process of teaching and learning, it will change your views of students and it will change how you think of yourself as a teacher and what you do
- **It is, therefore, a threshold concept**

Why is that a threshold concept?

- Difficult to grasp- books and journal papers have been written about it!
- This is a concept that relates to ways of thinking about the discipline of the scholarship of teaching and learning and to our professional practice
- Changes our whole understanding of 'teaching' and why and how our own struggles as professional practitioners must be worked through (**transformative, irreversible and troublesome**)
- Understanding that difficulties and past conflicts do not have to all be resolved but acknowledged and used (**integrative and bounded**)
- Can be extremely uncomfortable for us as teachers who have our own experiences, are influenced by our colleagues and mentors and may want to reject this understanding (**troublesome**)

What disciplines are using threshold concepts?

- **Mathematics**- complex numbers and limits in mathematics
- **Statistics** - confidence intervals
- **Economics-** opportunity pricing (most researched)
- **Biology** - evolution
- **Computer science** - object-oriented programming
- **Health related -** caring, clinical fluency in nurses

Mostly science-based

So what happens if threshold concepts are not understood?

Likely that:

- Students will mimic understanding – they are very good at it! (and may be able to go through their whole degree programme 'faking it')
- Learning becomes a ritualised performance
- Assessment becomes artificial and mechanistic

Activity

Threshold concepts

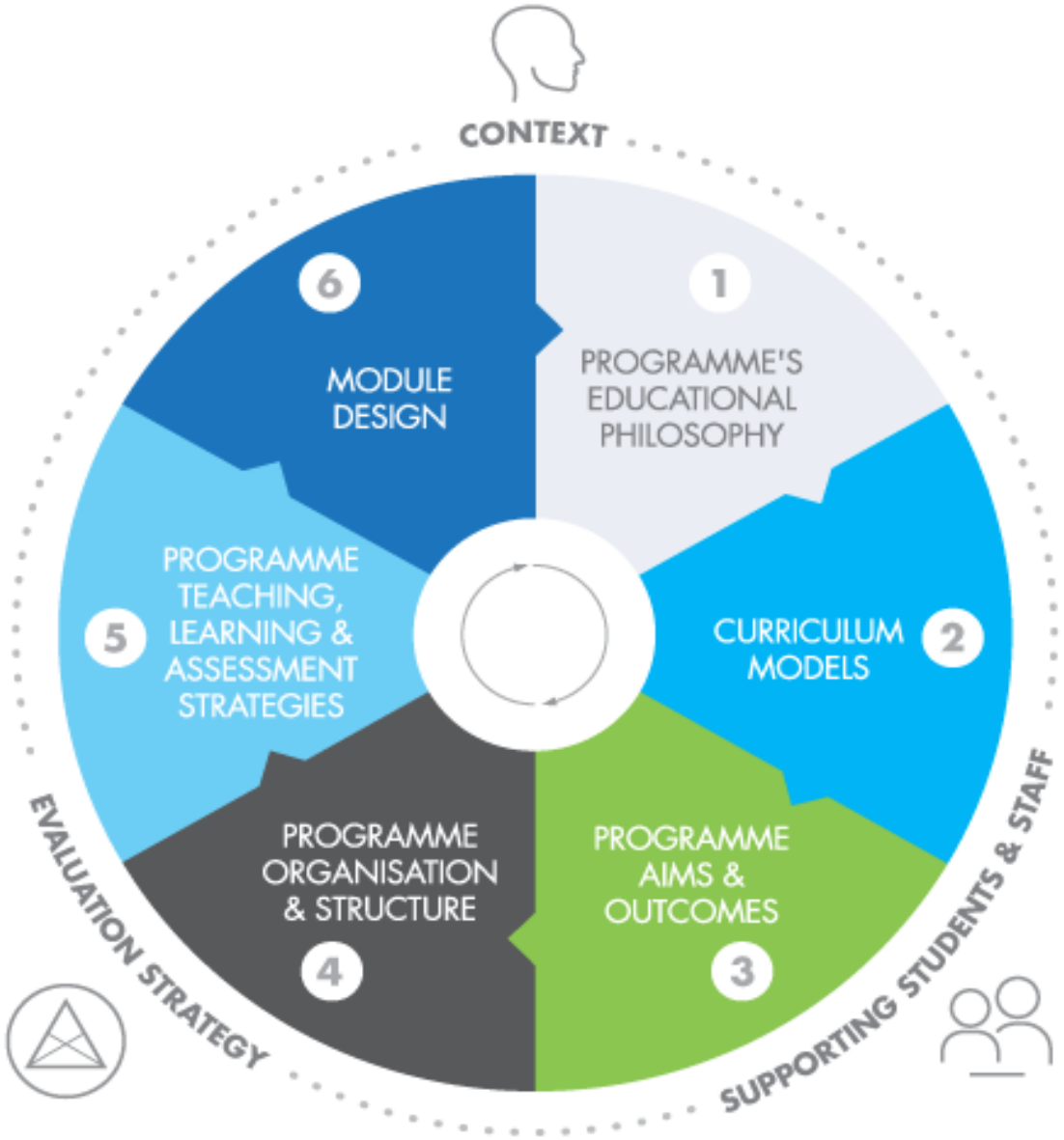
- Can you identify one threshold concept in your own subject area?
- Can you distinguish when students have really grasped this concept or when they are simulating understanding or faking it?

Feedback

READY TO DESIGN ?

- Graduate Attributes Defined *
- Aims and Outcomes Agreed *
- Constructive Alignment in Place*
- Discipline ‘De-coded’ *
- Threshold Concepts Explored *

Curriculum Design Process



O'Neill, G. (2015). *Curriculum Design in Higher Education: Theory to Practice,* Dublin: UCD Teaching & Learning.

Students and Context

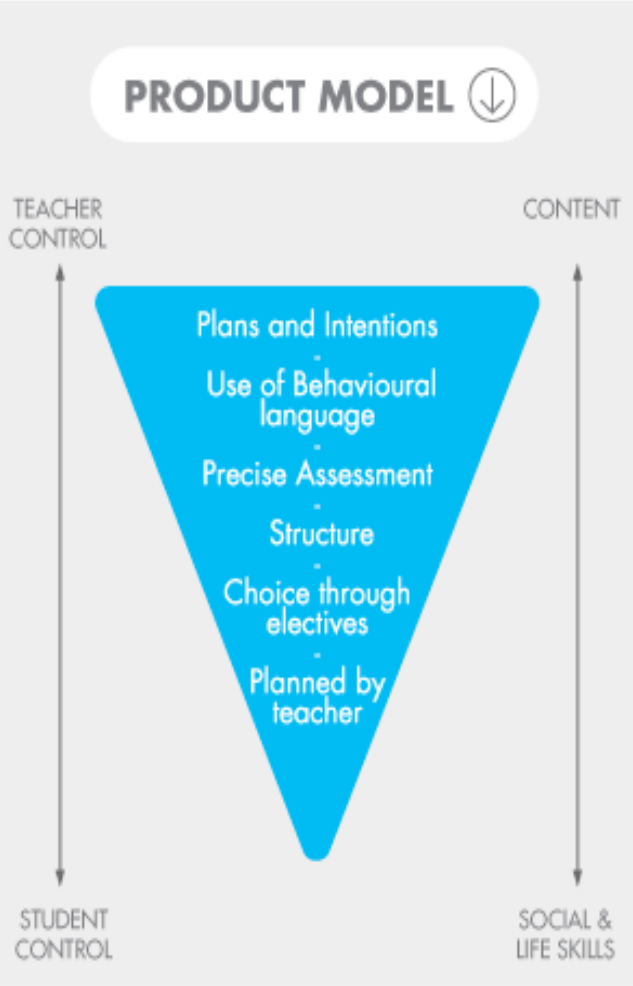
- Student profile
  - Age
  - Previous study
  - Widening participation
  - Literacy and numeracy skills
  - Digital skills
- Entry requirements
- Transition into Higher Education

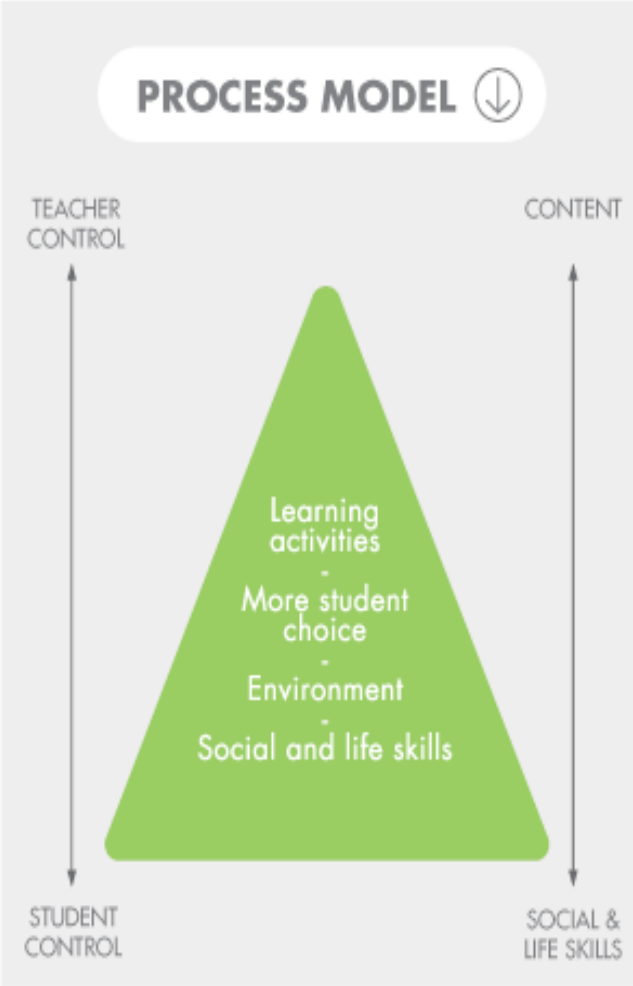
- Context
  - Institution - mission, drivers, priorities
  - Societal expectations
  - Professional expectations
  - Globalisation

Educational Philosophy

	Rationalism (reality is constructed)	Pragmatism (truth for now)	Empiricism (single reality / objective truth)
Influence on education	Knowledge in socially and individually constructed by the learner and by groups	Experts and professional bodies identify what students need to know	Clear about what theory needs to be learnt and assessed
Theories	Information processing Socio-cultural influences Cognitive theories	Pragmatism Socio-cultural influences	Behaviourism
Influence on the curriculum design	Learner centred, negotiated, information utilisation and problem solving	Outcome driven education with clear pragmatic end points	Fixed content, assessment, measurement

Two models for curriculum design





> Product Model:

- Teacher controlled
- Clear course content and assessment of significant aspects
- Clear course structure, topic sequence
- Planned by the teacher

> Process Model:

- Student choice
- Based around learning skills e.g. life long learning, reflection etc.
- Learning spaces and activities to achieve programme aims

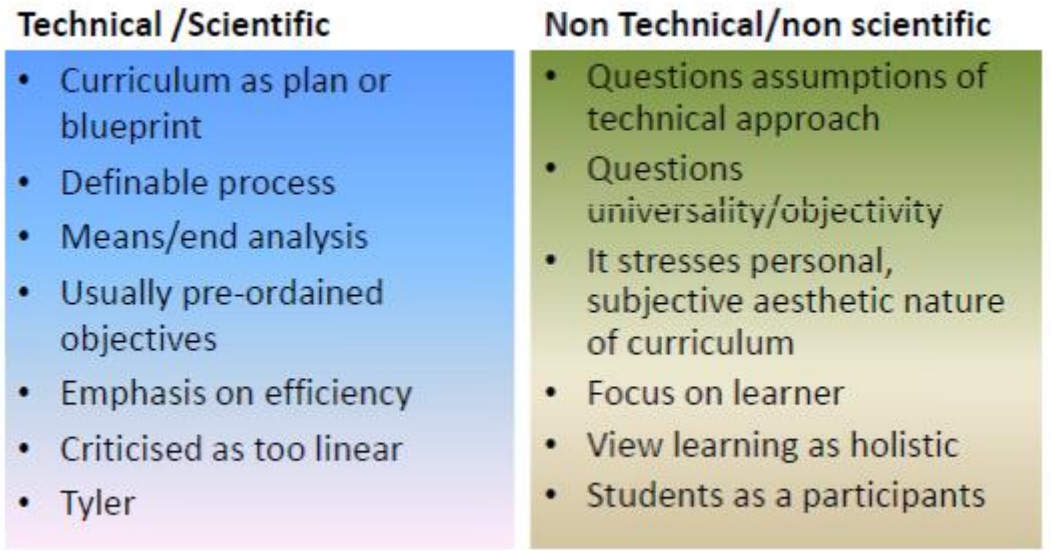
Approaches to the curriculum

> Technical / Scientific:

- Blueprint of the student you are planning to deliver at the end of the course
- Work back from the blueprint to produce learning outcomes
- Build assessment and learning and teaching approaches to deliver the outcomes

> Non Technical / Non Scientific:

- Focus on the learner you are trying to create
- Students involved in co-creation through activities designed to develop skills and abilities to analyse, reflect and learn



Two design models

> Based on Principles

- Define the purpose of the course
- Define the experiences to meet the purposes
- Define how you organise the experiences
- Define the evaluation

> Backward Design

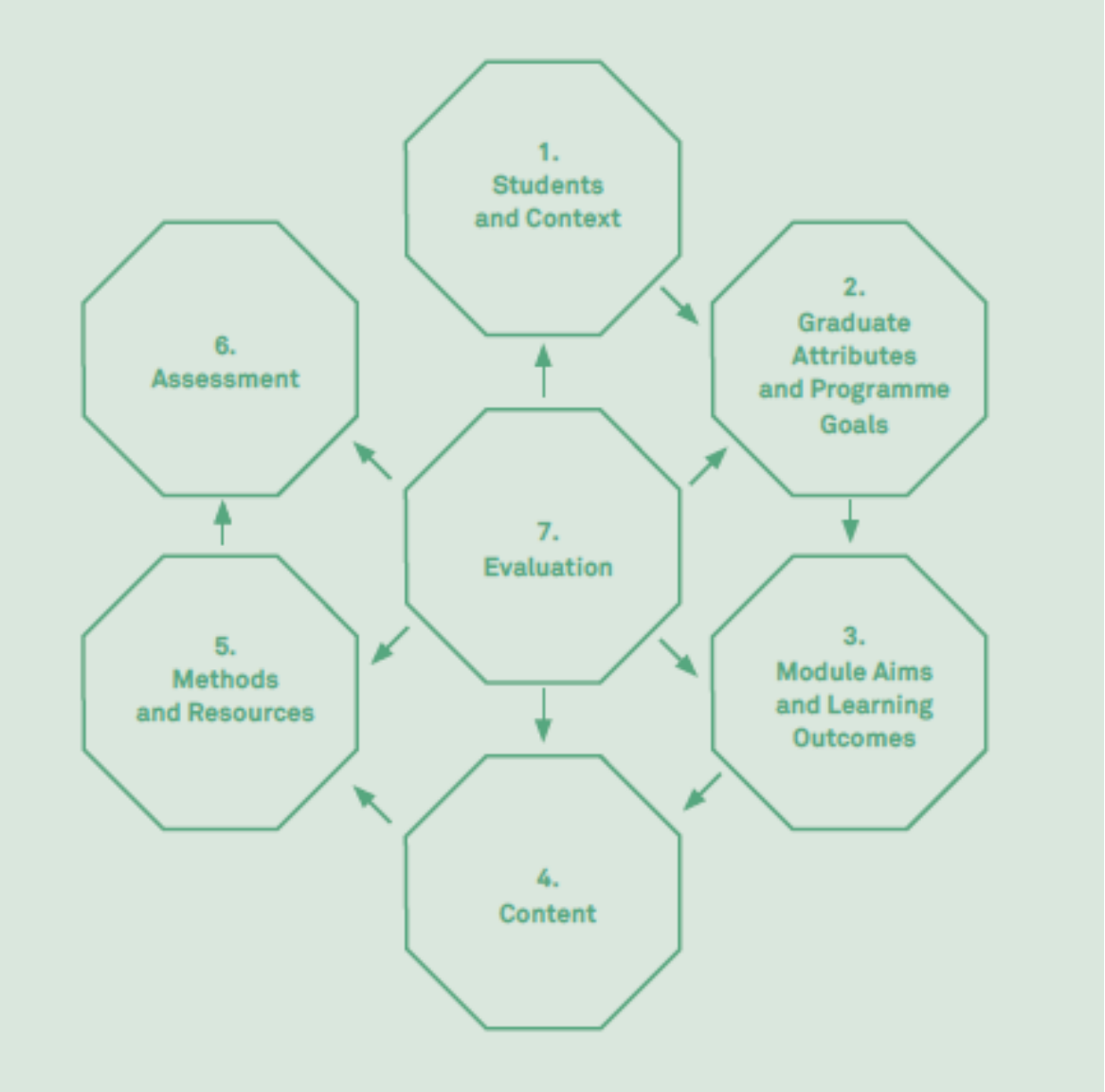
- Decide on end point – the outcome of the course
- What do students need to know to get to the end point
- What will you test and evaluate?

Example: Tylers (1949) Four Basic Principles

- Define the purposes of the Curriculum
- Define the educational experiences related to the purposes
- Define the organisation of these experiences
- Define the evaluation of the purposes

Backward Design Model (Wiggins & McTighe)

- Draws from Architecture, engineering and educational design
- Commences with a statement of end-points
- What do you want students to know, do...(discipline and non-discipline)
- What evidence will be collected to assess the success of the curriculum ?



Steps in course design:

1. Consider students and context
2. Develop graduate attributes and programme aims
3. Develop programme / module learning outcomes
4. Identify the content and the sequencing
5. How will you deliver it – approach to learning and teaching
6. How will you assess learning?
7. How do you evaluate the programme as a whole?

Huntley-Moore and Panter (2015)

Assessment Literacy

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What is Assessment Literacy?

- **Assessment Literacy** refers to the students understanding of the process of making an academic judgement about performance in an assessment task
  - Embedded Assessment Literacy support in not commonplace in the Higher Education sector instead we talk about study skills, graduate attributes and digital literacy
  - "Assessment literacy is an iterative process, and therefore course design and implementation should provide unhurried opportunities and time within and across programmes to develop complex knowledge and skills, and to create a clear paths for progression."
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Explicit and Implicit Elements of Assessment

- University students are adept at following explicit guidance e.g. include a bibliography but there is often confusion around implicit dimensions of assessment
  - Implicit criteria are embedded in disciplines
  - Implicit criteria are the way we do things in XX subject / the way we write in XX subject
- **Analogy –** if we want to learn a language, you need to do more than read a book about grammar and vocabulary you need to understand the context in which the language is used
  - **Learning about assessment is much like learning a language**
    - Explicit rules – vocabulary / grammar
    - Implicit rules – culture and context

Iteratively building assessment literacy

- Ongoing dialogue with students to identify:
  - What do they understand?
  - How do they interpret it?
  - What is explicit?
  - What are the implicit criteria?

Activity

Identifying implicit criteria

- Think for a moment about what kind of criteria you might apply to an essay assessment when marking it
  - Which of these criteria are explicit? e.g. known to the student
  - Which of these criteria are implicit? e.g. known to the academic
  - Which of these criteria are specific to you as an academic? e.g. known and used only by you

Feedback

Developing Assessment Literacy

Higher Education Academy

Specifying & Setting Stages

> Specifying stage:

- At the specifying stage you will normally determine the type of assignment
- Give an idea of the scale e.g. a 4,000 word essay
- Indicate its value as a percentage of the overall marks for that module

> Setting stage:

- Setting assignment details needs to happen each time a group of students takes a particular module. This is often known as an instance of delivery.
- The purpose of setting is to achieve clarity for both students and staff: what is required, in what format, by when and how it will be assessed.
- It need to be clear about how the work will be marked. This means being clear about marking criteria and grading schemes and also any penalties for non-compliance with the stated requirements e.g. over the word limit.
- Be clear about the allocation of percentages between sections in a multi-part assessment is in use
- Be clear about what is expected (explicit criteria) e.g. compare and contrast a minimum of 4 research papers

Supporting

- This focuses on supporting the students from when the assessment is set through to submission
  - Working with students as individuals on explicit and implicit criteria
  - Providing feedback on drafts

Things to try.....

1. Feedback First

2. Student marking workshop

3. Uncovering implicit criteria workshop

4. Developing the student's understanding of the explicit and implicit criteria

5. Writing structure for the discipline workshop

Academic Integrity

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Academic Integrity is important because…

- Virtually everything we know in the world is known because someone has taken the time to think about it, research it and then share what they know (disseminate it)
- All academic research is built, in part, on the findings of other research
- We need to acknowledge this prior work to show the foundations of knowledge, acknowledge others and to uncover any potential biases

Academic Culture

- Studying at University means becoming part of academic culture

- Academic culture involves investigating areas of interest, locating existing knowledge, sharing knowledge and creating new knowledge

- Academic culture requires ethical conduct
  - Ensuring the production of accurate results – right tests, right sample etc
  - Reporting results accurately
  - Citing the work and contribution of others

Academic Dishonesty matters in the real world

- Dishonesty is not tolerated within professions and within wider society
- Dishonesty is a character trait – not easily remedied once present
- Dishonesty may lead to harm

Types of academic dishonesty

- Plagiarism
  - Incorrect paraphrasing
  - Copying
  - Failing to acknowledge the source
- Falsification
- Ghosting
- Duplicate submission
- Cheating
- Collusion
- Misrepresentation
- Bribery

Designing out Dishonesty

- The handout contains some useful tips of designing assessments to reduce academic dishonesty

References

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