
Development of Energy Education in the Mekong Area (DEEM)

Introduction

July 2017



Introduction: Who is who?

3 questions

Start with a brief introduction: name, field of study, position

1. Something that made me really happy in the past week
2. Something that I really enjoy being a teacher
3. My expectations for this workshop



Individual Learning Journal

Outcomes

- Stimulate your reflection in a more systematic way.
- Help you to keep track of ideas for your personal action plan.

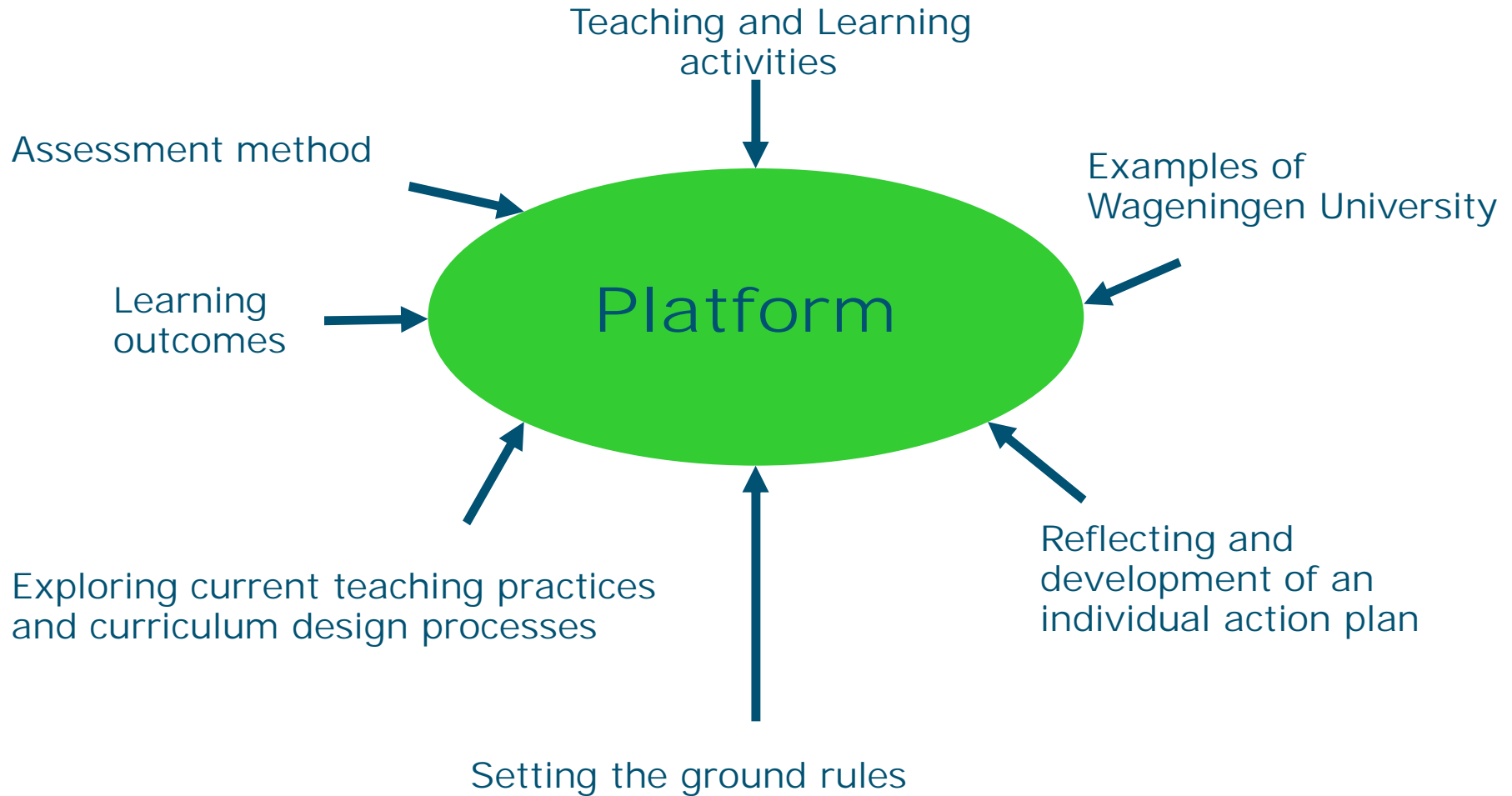
Note: the individual learning journal is for personal use.

Procedure

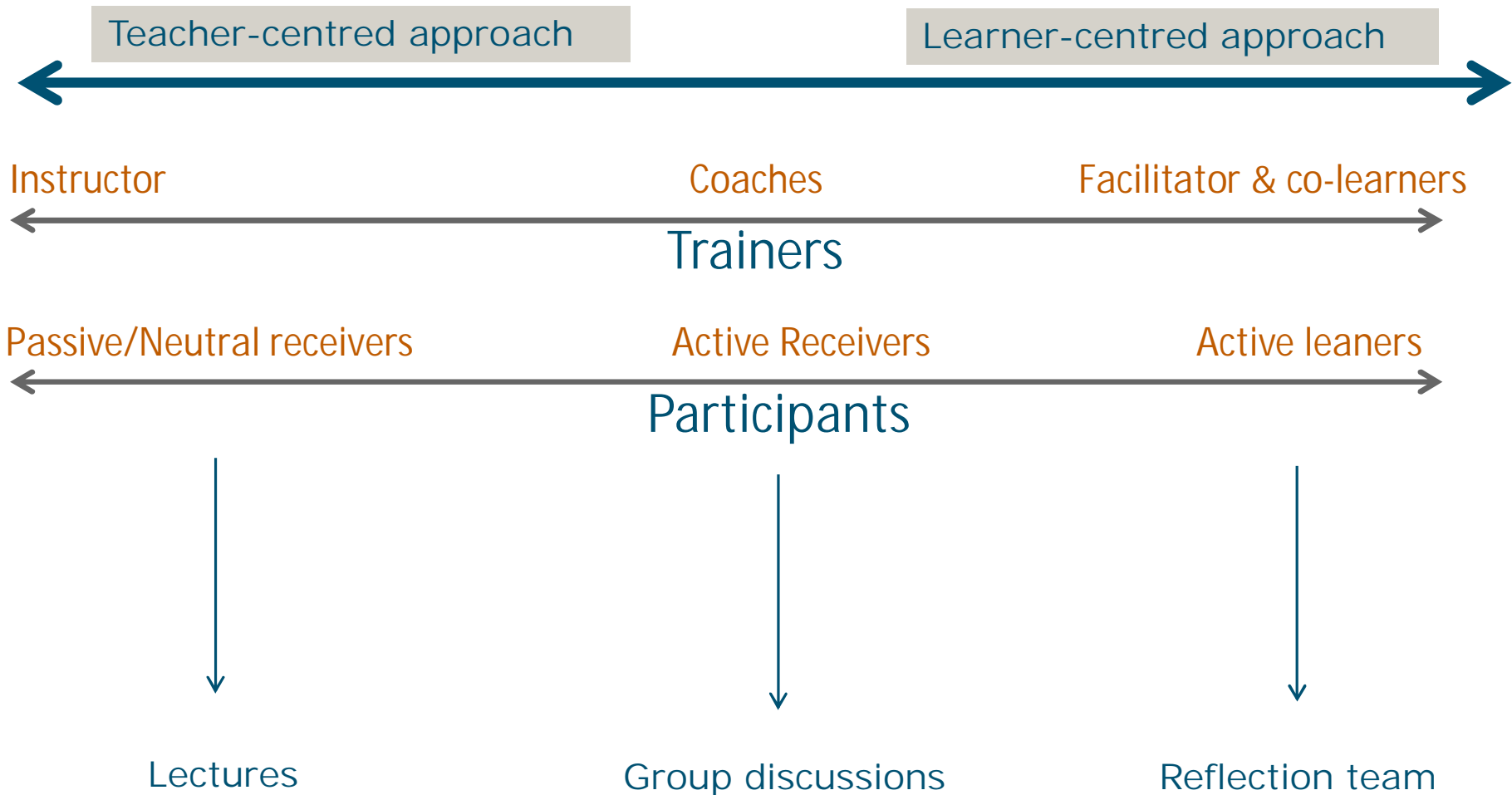
- At the end of every day: We will give you the opportunity to write down some reflections on the day
- At the beginning of each day: We will invite you to share your learning points and we will give you the opportunity to ask for clarification of concepts or ideas, which are still puzzling you.

Expectations

Training program



Training approach



Program of today

- Interactive presentation and Group exercise: Exploring current education practices at your HEIs

Lunch break

- Interactive presentation: A course offered at Wageningen University
- Interactive presentation: Formulating learning outcomes

Coffee break

- Individual exercise: Formulating and discussing learning outcomes for your own course
- Reflections: Writing in your learning journal

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Getting started: curriculum development and teaching practices

July 2017



What are we going to do....

- Creating a shared understanding of your current curriculum development and teaching and learning practices
- Critically think about future ambitions regarding curriculum development and teaching and learning practices

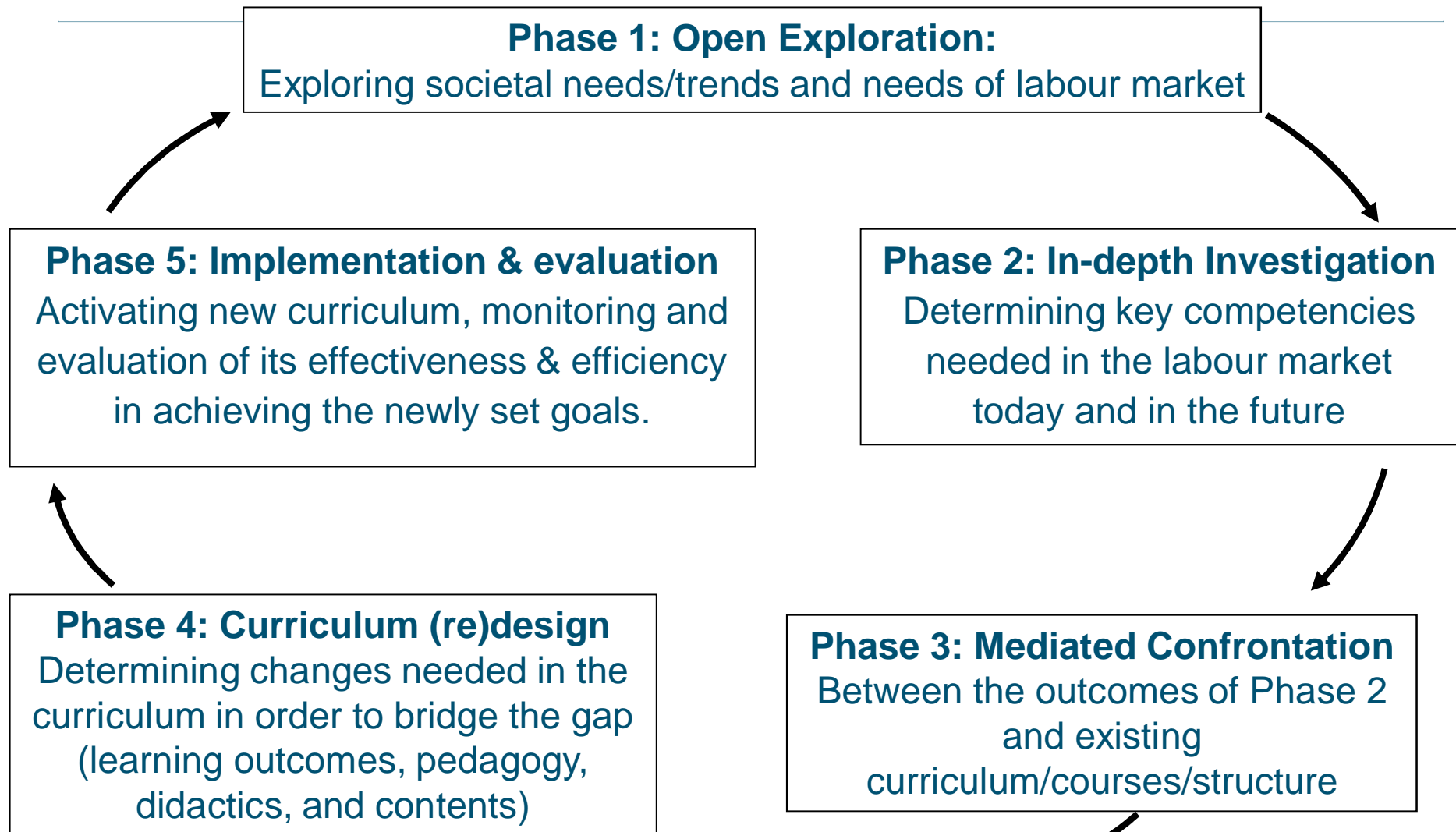


CONNECTION



SHARED LANGUAGE

Curriculum development



Teacher-centred and Learner-centred approach

Teacher-centred approach

Learner(student)-centred approach



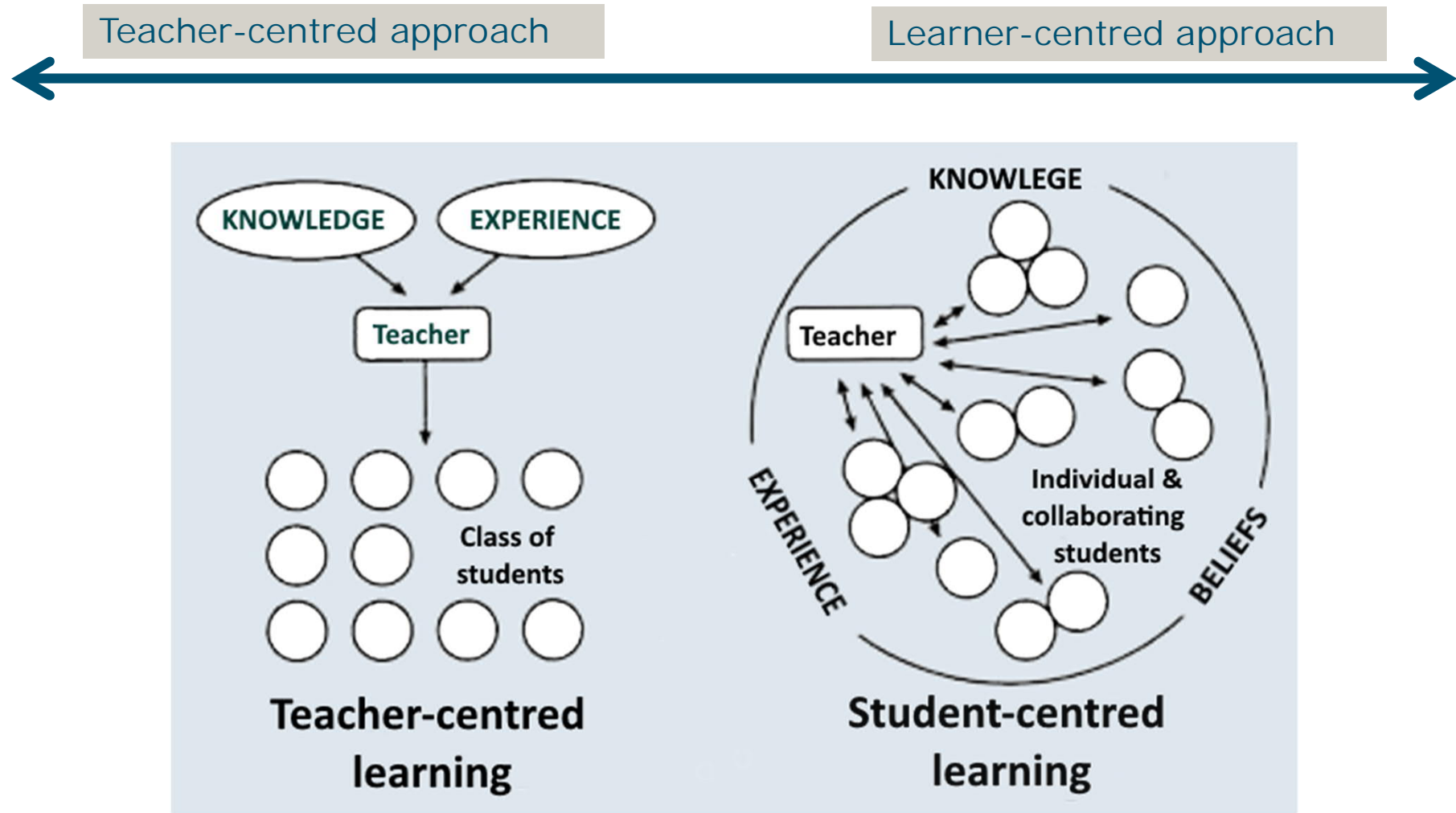
Teacher-centred

- Transfer of knowledge
- Coverage of content
- Teacher is instructor
- Students are passive

Learner-centred

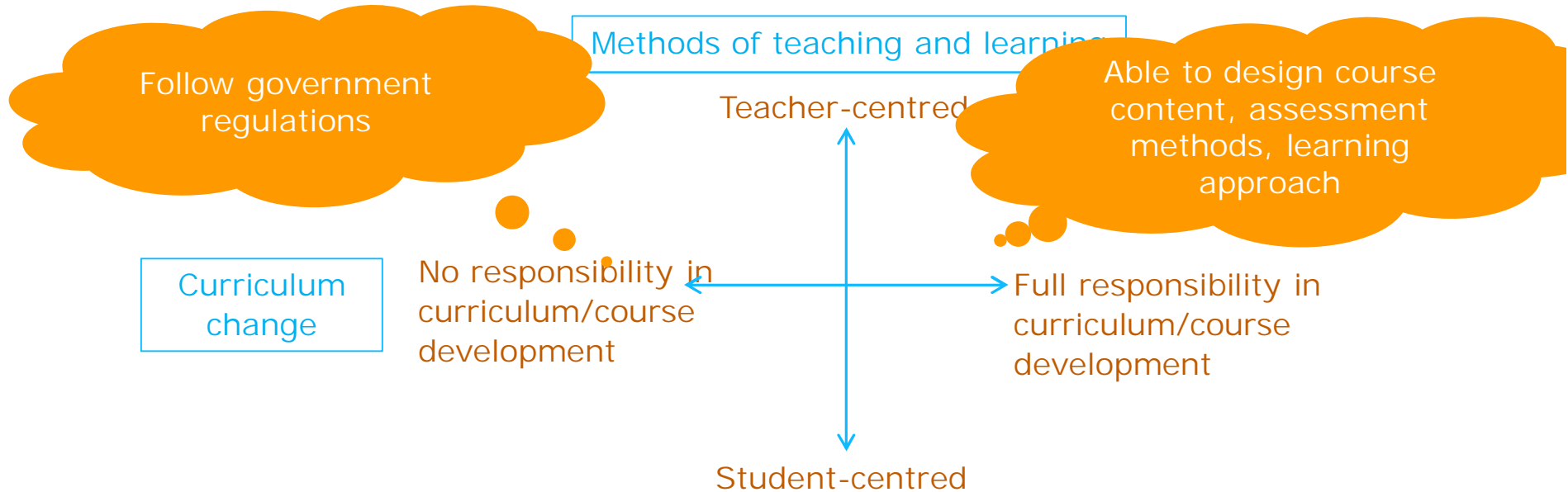
- Understanding of concepts
- Knowledge constructed by students
- Teacher is facilitator and co-learner
- Students are active (problem solvers and questioners)

Teacher-centred and Learner-centred approach



A matrix

1. Prepare a flipchart with the matrix:



2. Place a cross on the matrix which indicates your opinion about how curriculum development and teaching and learning currently takes place

3. After a short discussion about the outcome, decide on a place on the matrix that indicates how you would like the situation to be in five years' time. Place a circle that indicates the situation

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Learning outcomes

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After this session you:

- Are able to (re)formulate learning outcomes while using the Bloom taxonomy



Why do we design learning outcomes?

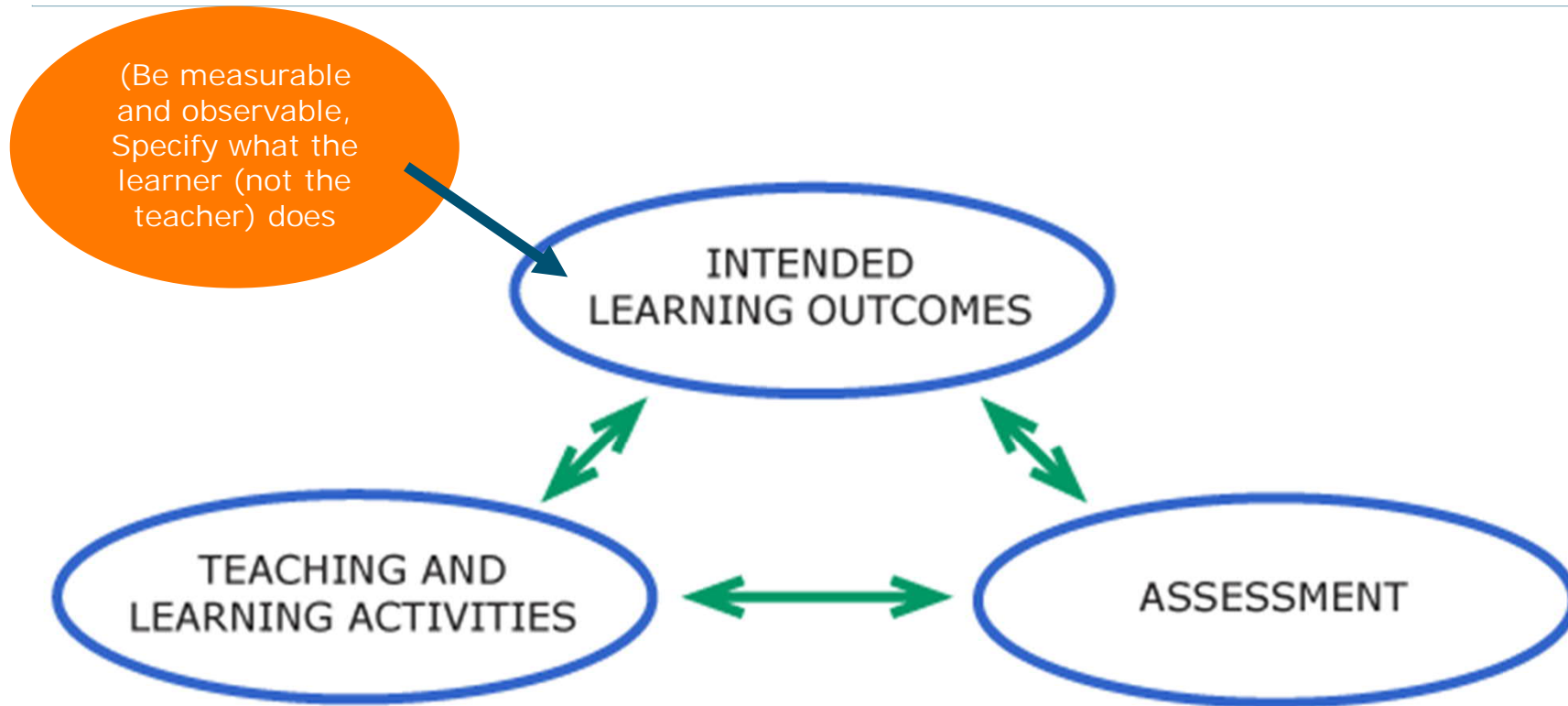


Learning outcomes

- Provide a basis for a dialogue in a team of lecturers about the purpose of the course
- Help lecturers to define the teaching/learning activities and assessment method
- Give clear indications to students about what the course entails



Constructive alignment



Constructive alignment: Presentation skills

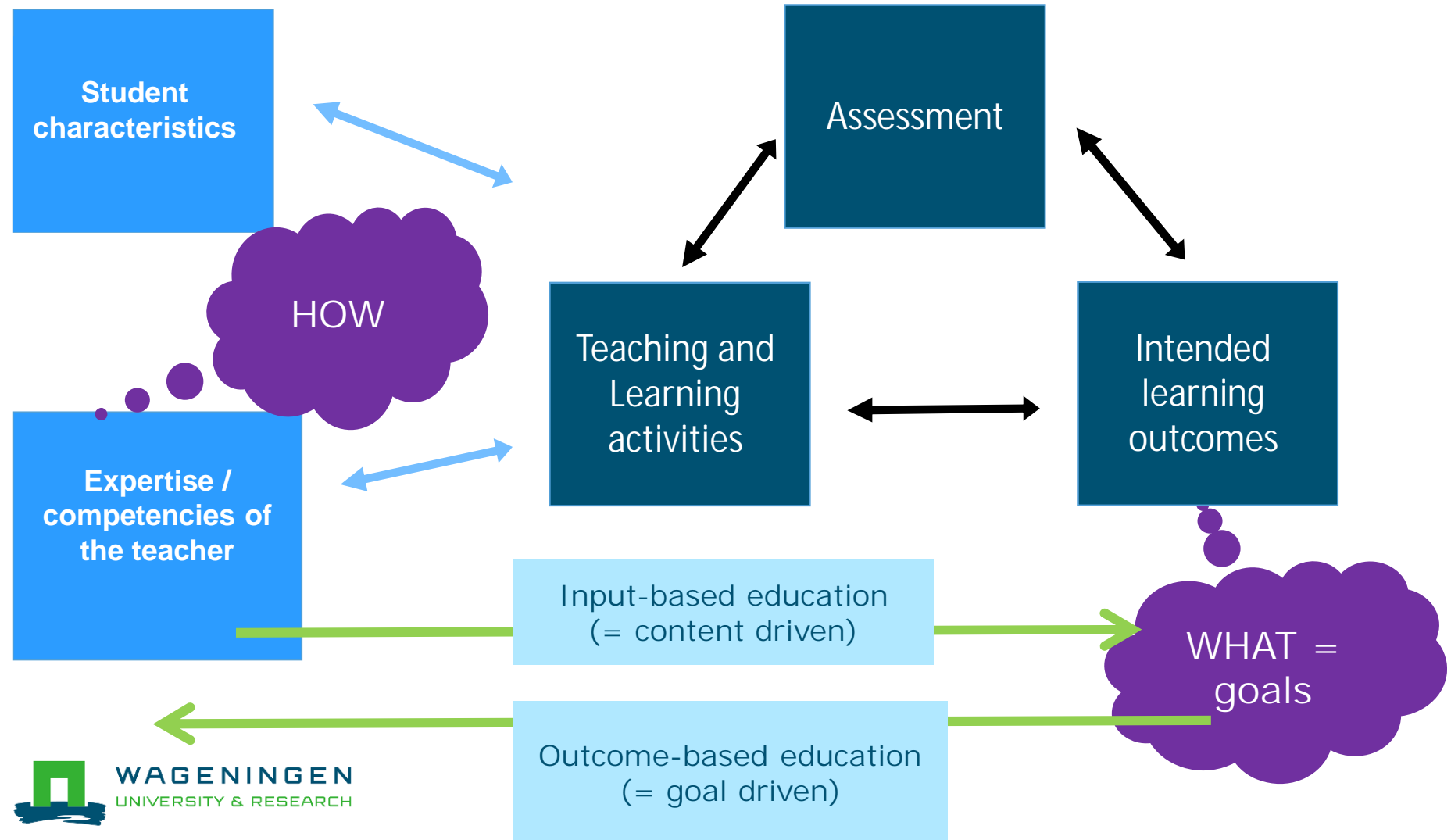
- Show different tools to make a scientific 7 minute presentation interesting for an audience
- Interact with the audience
- Give a well-structured presentation
- Use visual aids that support a presentation
- Show responsibility for his/her own learning process
- Contribute to the learning process of other students

- Interactive lecture on presentation theory
- Group work
- Presentation in groups
- Reflection on own learning process
- Giving and receiving feedback

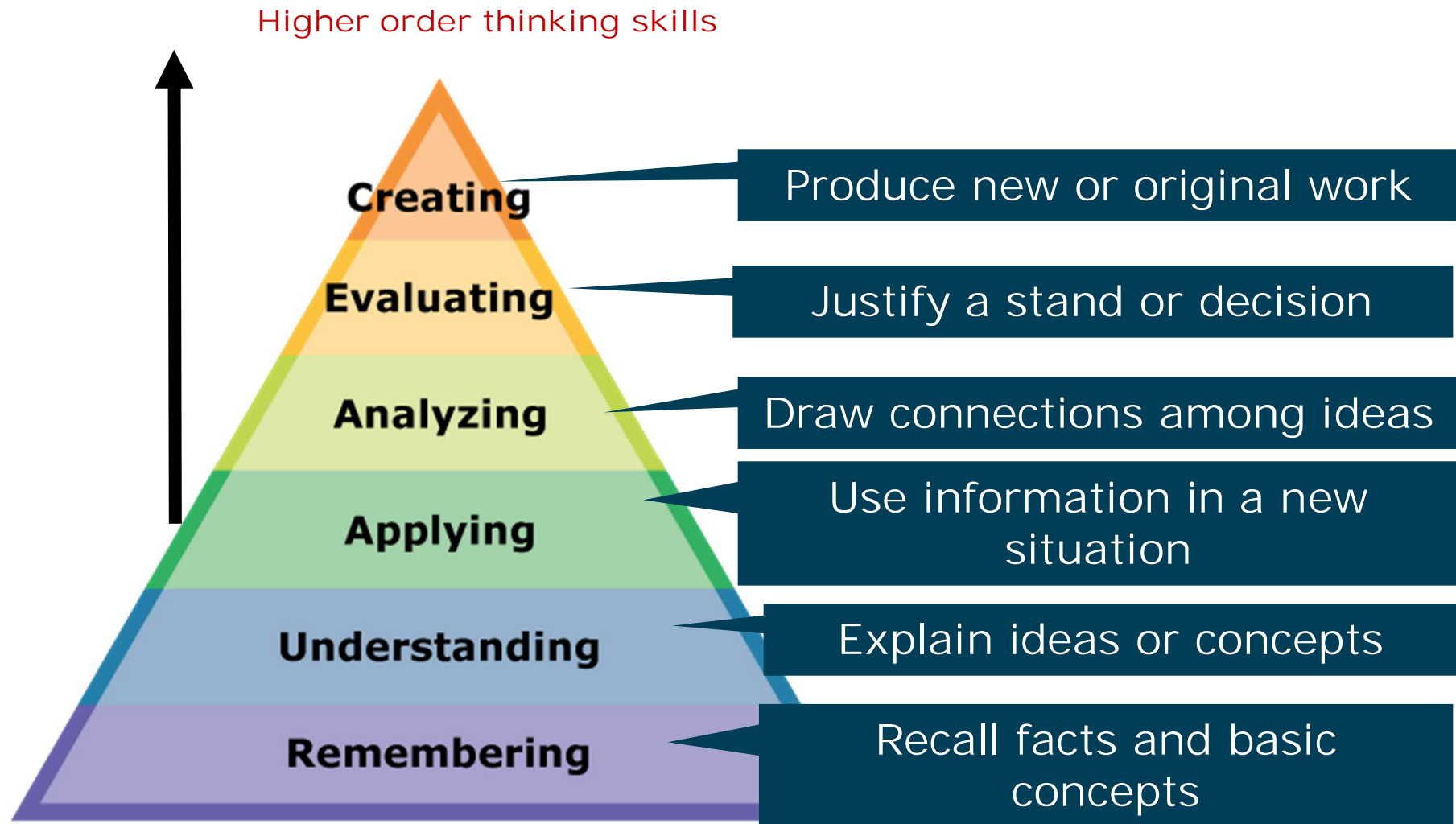
- Presentation
- Reflection paper

30 students, room with moveable furniture

Course design



Taxonomy of Bloom



List of verbs in learning outcomes

'After successful completion of this course students are expected to be able to'.

This start phrase is followed by one action verb, followed by the object of the verb and followed by a phrase that gives the context.

Verbs in learning outcomes must:

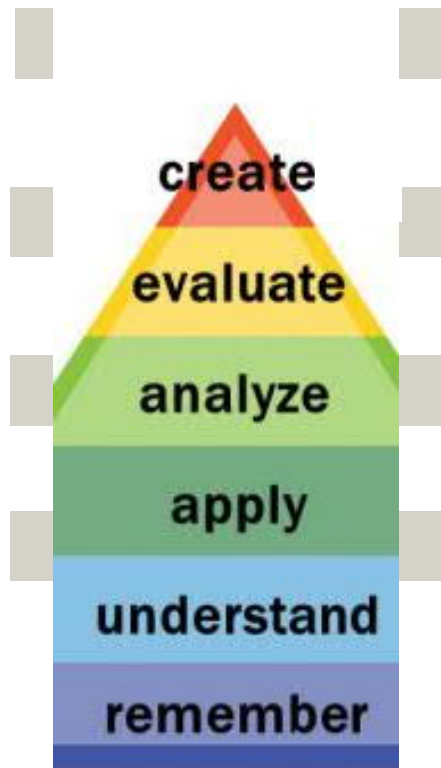
- Be measurable and observable
- Specify what the learner (not the instructor) does
- Require the learner to apply the learning

Good writing learning outcomes

- Active – it describes what students can do
- Attractive – students want to achieve it
- Comprehensible – students and other lecturers know what it means
- Appropriate – to the student's current goals and career plans
- Attainable – most students will mostly meet it, with due effort
- Assessable – we can see if it has been achieved
- Visible – in the course guide and Study Handbook

Examples

After successful completion of this course students are expected to be able to...



- List the renewable energy and technology options available in Cambodia
- Calculate the power generated by a water turbine
- Share their opinion about the challenges facing a clean energy future for Cambodia
- Explain the basic physics of the greenhouse effect

Another example

Course aim: students are able to evaluate the social and environmental impact of the Sambor hydropower dam in Cambodia.

Learning outcomes

- To recall all possible environmental impacts of a hydropower dam
- To explain all possible social impact of a hydropower dam

How many?

■ course

number: 5 - 8

■ Study programme

number

❖ Domain specific (3-4)

Integrate and apply the knowledge of engineering science in the context of sustainable energy production

❖ Scientific skills (2-3)

Execute a carefully chosen and societally relevant research design

❖ Societal awareness (1-2)

Contribute scientific knowledge and understanding in interactive multi-stakeholder change processes aimed at innovating and improving the energy sector

❖ General professional skills (2-3)

Analyse and evaluate the ethical, environmental, societal and economic consequences of research and reflect on the different roles of the scientist in energy transition processes

While designing, keep in mind...

While designing, keep in mind...

- The characteristics of the students – their backgrounds, prior knowledge and competencies, talents and learning styles
- The needs in the specific sector and the wider society
- The requirements of accrediting agencies
- Available time and resources



Assignment course learning outcomes

Individually

- Formulate at least 3 learning outcomes for a course
- Use different levels of the taxonomy of Bloom



Assignment course learning outcomes

(Re)formulate learning outcomes for your own course

1. Selecting the cognitive level of the learning outcome
2. Choose a verb from the Bloom taxonomy
3. Finish this sentence:

'After successful completion of this course students are expected to be able to'.

This start phrase is followed by one action verb, followed by the object of the verb and followed by a phrase that gives the context.

Assignment

- Individually: Write three learning outcomes and write those on a flipchart (15 min.)
- In 3 groups share and discuss your initial learning outcomes and receive feedback (20 min.)
- Plenary: The opportunity to ask for clarification of concepts or ideas, which are still puzzling you (15 min.)

Summary

- Bloom's taxonomy provides a structure for writing learning outcomes
- A learning outcome offers a description of what a student should be able to know/do and so it guides you to select appropriate teaching/learning and assessment methods
- It is important to integrate some higher-order thinking skills learning outcomes in your course (find a good balance)

Individual Learning Journal

Outcomes

- Stimulate your reflection in a more systematic way.
- Help you to keep track of ideas for your personal action plan.

Note: the individual learning journal is for personal use.

Procedure

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Expectations

-
-
- What was yesterday's session about?
 - What are the most important issues, according to you, in this topic?
 - What was the most important learning point that you gained from yesterday's session?
 - How can you link this to your own experience?