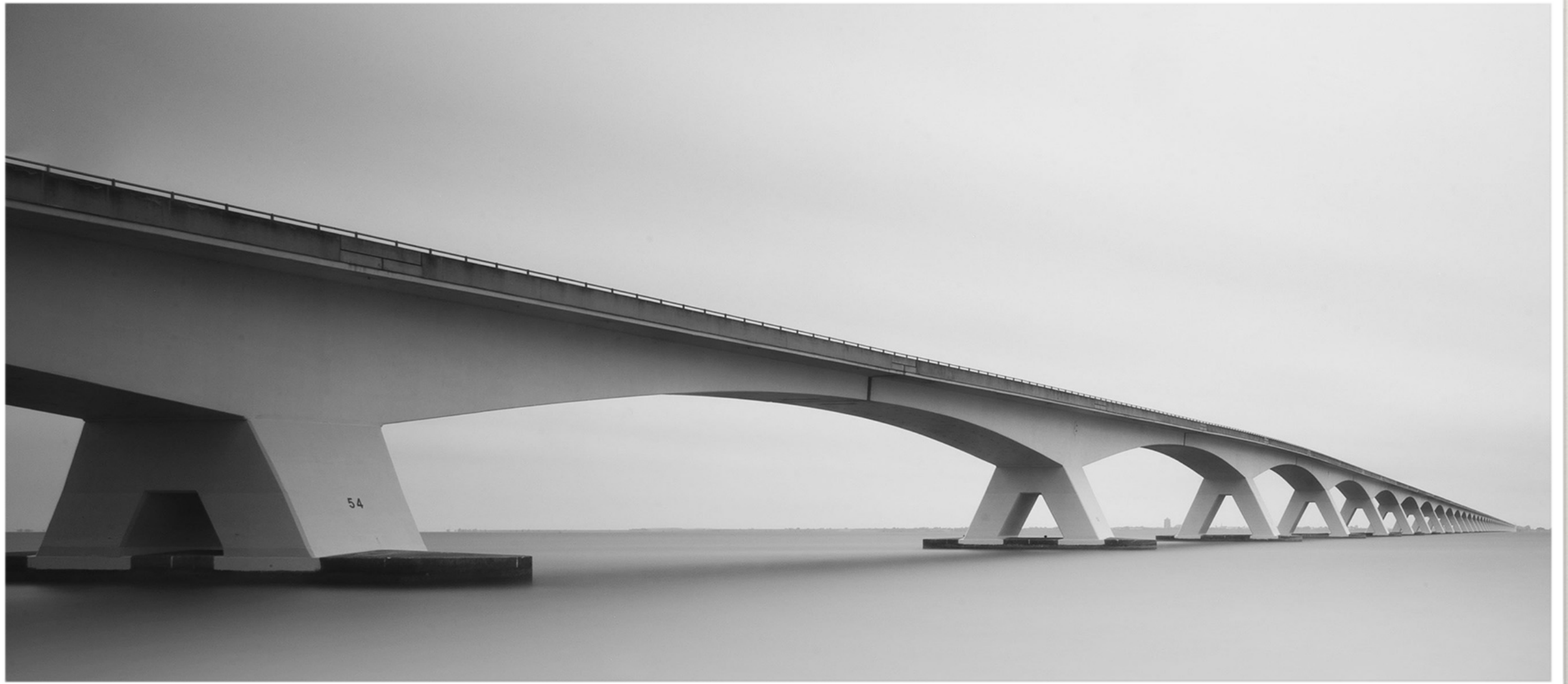


---

# Measurement, Assessment, and Evaluation in Higher Education

---





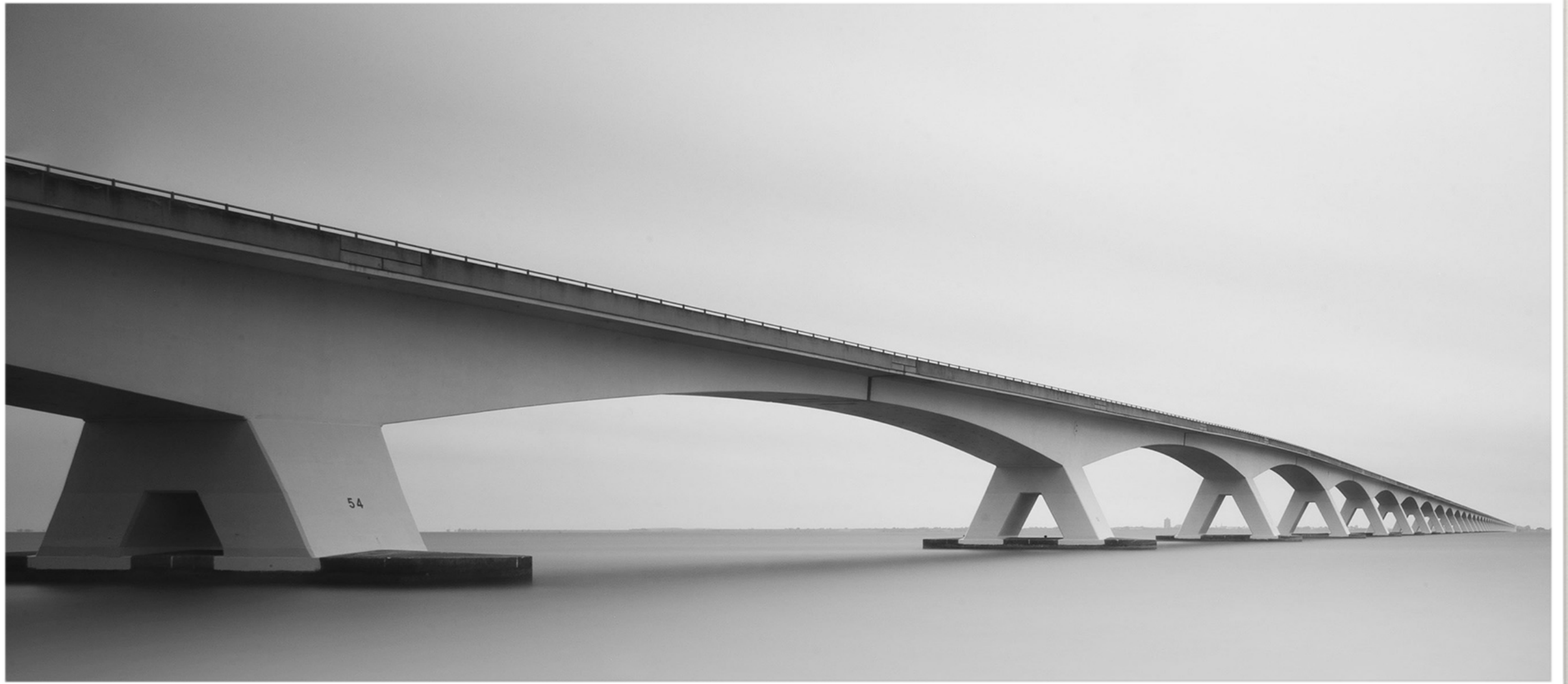
*Gede Pramudya, P.Tech.,Ed.D.*

---

# Measurement, Assessment, and Evaluation in Higher Education

---





*Gede Pramudya, P.Tech.,Ed.D.*

---

# Measurement, Assessment, and Evaluation in Higher Education

a set of guidelines







---

# Teaching $\neq$ Learning

---



# Teaching $\neq$ Learning









---

# Measurement

---



---

# Measurement

---

- ❖ “Measurement is the product of **measuring** and **quantifying attributes** and/or **learning outcomes**. The measuring tool used are those described in the assessment instruments section”



---

# Measurement

---

- ❖ “Measurement is the product of **measuring** and **quantifying attributes** and/or **learning outcomes**. The measuring tool used are those described in the assessment instruments section”



---

# Measurement

---

- ❖ “Measurement is the product of **measuring** and **quantifying attributes** and/or **learning outcomes**. The measuring tool used are those described in the assessment instruments section”
- ❖ Assessment Instruments (tools): “...**measuring device(s)** used for learners to **qualitatively** and **quantitatively** provide **direct** and **indirect evidences** of learning and for teachers, curriculum designers and administrators to collect direct and indirect evidences of students learning gains and overall students **learning experiences**. The device(s) must be **constructively aligned** to the learning outcomes (**valid**). By using appropriate assessment criteria, the device can provide highly accurate (**reliable**) data related to the learning outcomes **attainment** and **achievement**. **Different** measuring devices (belonging to any of the **assessment methods**) will be required to collect data dealing with different and varied learning outcomes”.







---

well defined ‘thing’

---



# well defined 'thing'









---

accuracy is reliability

---



# accuracy is reliability



One accurate  
measurement is worth  
a thousand  
expert opinions  
Grace Hopper







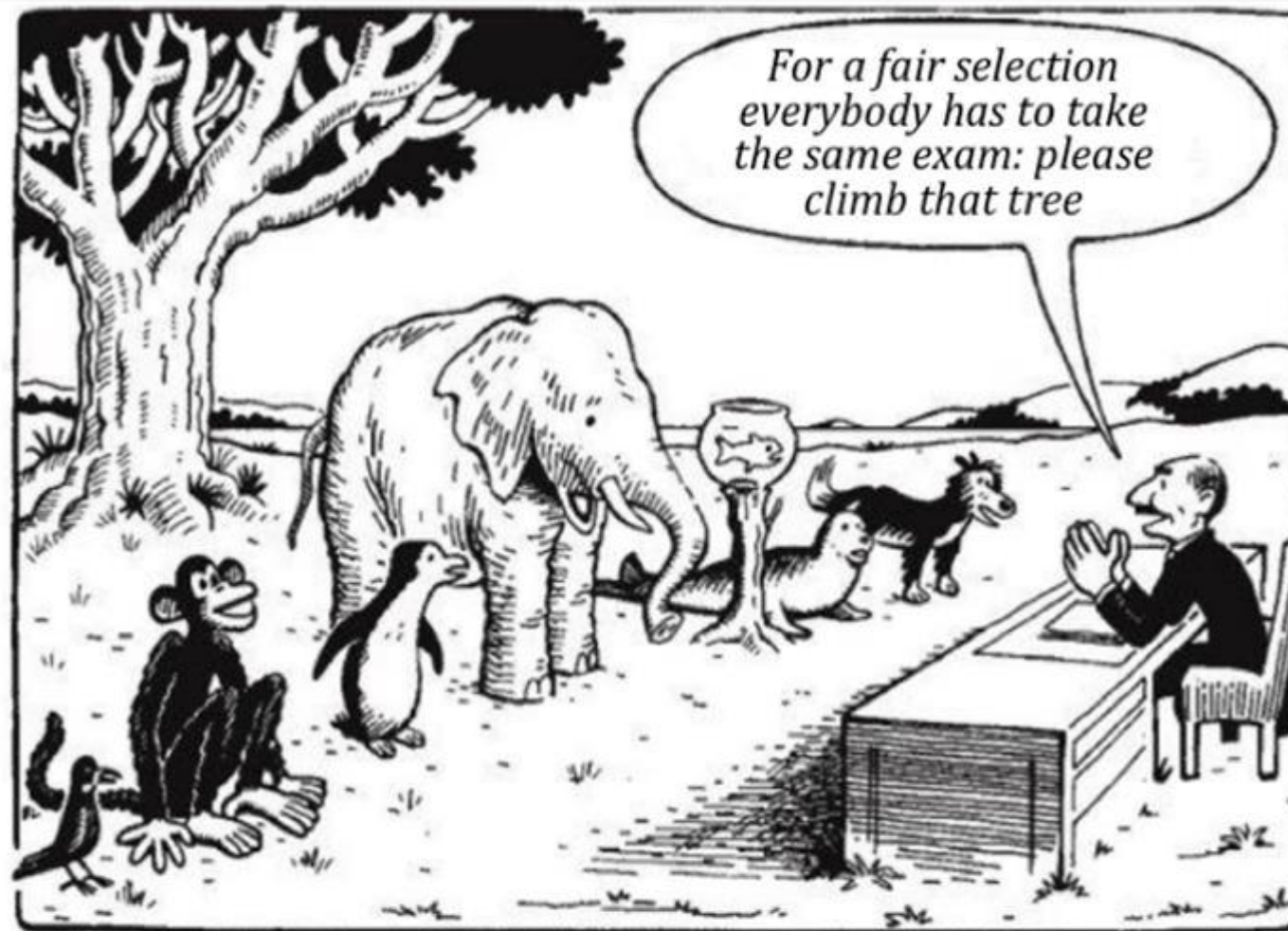
---

# Fairness

---



# Fairness



## Our Education System

*"Everybody is a genius. But if you judge a fish by its ability to climb a tree, it will live its whole life believing that it is stupid."*

*- Albert Einstein*







---

# Difficulty

---



# Difficulty



Download from  
**Dreamstime.com**

This watermarked comp image is for previewing purposes only.

ID 25848693

© Igor Zakowski | Dreamstime.com







---

# Assessment

---



---

# Assessment

---

- ❖ A **systematic** and **cyclical** way to **improve** quality of students' performance and development by continuously **collecting**, **analyzing** and **discussing** direct and indirect data and evidences of students learning from **multiple** and **diverse** sources.



---

# Assessment

---

- ❖ A **systematic** and **cyclical** way to **improve** quality of students' performance and development by continuously **collecting**, **analyzing** and **discussing** direct and indirect data and evidences of students learning from **multiple** and **diverse** sources.
- ❖ Its **purpose** is to have **deep understanding** of what the students really **know** and **can do**, provide **feedback** to improve **students learning**, teachers' **teaching** (feed forward), **curriculum planning** and overall **programme's effectiveness**.



---

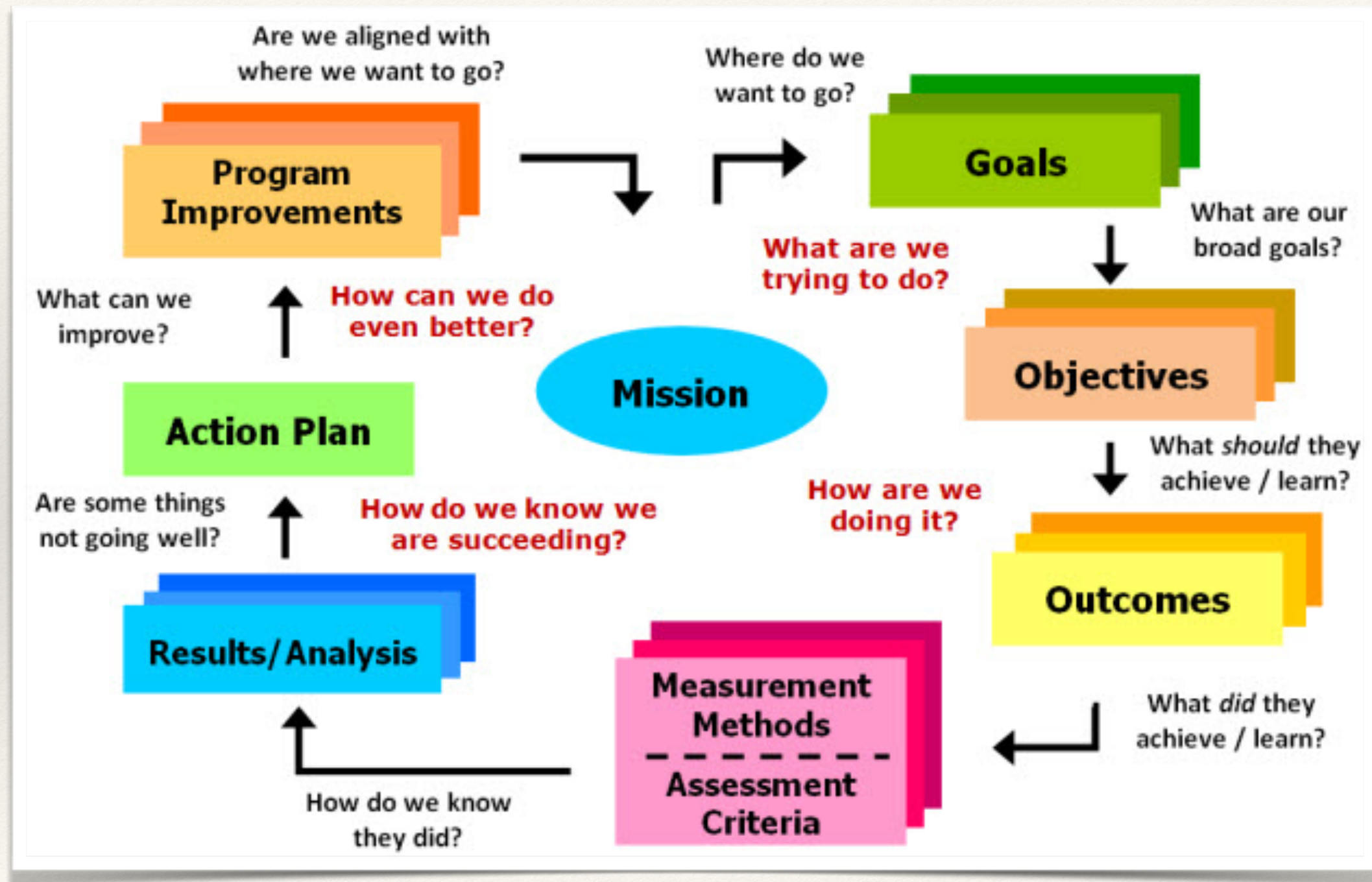
# Assessment

---

- ❖ A **systematic** and **cyclical** way to **improve** quality of students' performance and development by continuously **collecting**, **analyzing** and **discussing** direct and indirect data and evidences of students learning from **multiple** and **diverse** sources.
- ❖ Its **purpose** is to have **deep understanding** of what the students really **know** and **can do**, provide **feedback** to improve **students learning**, teachers' **teaching** (feed forward), **curriculum planning** and overall **programme's effectiveness**.
- ❖ The **data** collected in assessment is used by students, teachers, curriculum planners, and administrators to **promote** students learning and is **not meant to make judgment**.



# Assessment Cycle





# AIM

## The Purpose of...

assessment  
is to  
**INCREASE**  
quality.



evaluation  
is to **JUDGE**  
quality.





---

# Formative Assessment (AfL)

---



---

# Formative Assessment (AfL)

---

- ❖ Formative Assessment is a form of **low-stakes assessment FOR learning** and is part of the instructional process.



---

# Formative Assessment (AfL)

---

- ❖ Formative Assessment is a form of **low-stakes assessment FOR learning** and is part of the instructional process.
- ❖ It is about **continuously collecting data** as learning is in progress.



---

# Formative Assessment (AfL)

---

- ❖ Formative Assessment is a form of **low-stakes assessment FOR learning** and is part of the instructional process.
- ❖ It is about **continuously collecting data** as learning is in progress.
- ❖ When incorporated into classroom practice, it provides the information needed to **adjust teaching and learning** while they are happening. In this sense, formative assessment informs both **teachers** and **students** about student understanding at a point when **timely adjustments** can be made. These adjustments help to ensure students achieve the targeted **learning outcomes** within a set time frame.



---

# cook is testing the food

---





---

# Summative Assessment (AoL)

---



---

# Summative Assessment (AoL)

---

- ❖ The goal of summative assessment or **high-stakes examination** is to measure the level of success, performance quality, proficiency or how well students/course/module/programme have achieved the learning outcomes at the end of an instructional unit or a course/module/programme by comparing it against some standard or benchmark.



---

# Summative Assessment (AoL)

---

- ❖ The goal of summative assessment or **high-stakes examination** is to measure the level of success, performance quality, proficiency or how well students/course/module/programme have achieved the learning outcomes at the end of an instructional unit or a course/module/programme by comparing it against some standard or benchmark.
- ❖ The purpose is to make **judgment** by assigning a **grade** to the students and to **make decision** on the future of the students/course/module/programme.



# customer testing the food





---

# Assessment Methods

---



---

# Assessment Methods

---

The assessment methods are simply the ways and strategies we collect data. It can be classified into four categories:



---

# Assessment Methods

---

The assessment methods are simply the ways and strategies we collect data. It can be classified into four categories:

- ❖ Selected Response & Short Answer;



---

# Assessment Methods

---

The assessment methods are simply the ways and strategies we collect data. It can be classified into four categories:

- ❖ Selected Response & Short Answer;
- ❖ Constructed or Extended Written Response;



---

# Assessment Methods

---

The assessment methods are simply the ways and strategies we collect data. It can be classified into four categories:

- ❖ Selected Response & Short Answer;
- ❖ Constructed or Extended Written Response;
- ❖ Performance Assessment;



---

# Assessment Methods

---

The assessment methods are simply the ways and strategies we collect data. It can be classified into four categories:

- ❖ Selected Response & Short Answer;
- ❖ Constructed or Extended Written Response;
- ❖ Performance Assessment;
- ❖ Personal Communication.



---

# Assessment Tasks

---



---

# Assessment Tasks

---

- ❖ An assessment task is a **specific piece of work** (performance or product) given by teachers to students in allowing them to show **evidence of how much and how well** they have **mastered** the learning outcomes.



---

# Assessment Tasks

---

- ❖ An assessment task is a **specific piece of work** (performance or product) given by teachers to students in allowing them to show **evidence of how much and how well** they have **mastered** the learning outcomes.
- ❖ The task is given using an **appropriate** and **aligned** assessment instrument and must be **integral** to the learning outcomes attainment, provide **explicit** instruction and information about what students are required to do, **inform** the learner about the amount of time appropriate to complete the task, and provide **clear** and **explicit scoring/assessment criteria** and benchmark **standards**.



---

# Assessment Tasks

---

- ❖ An assessment task is a **specific piece of work** (performance or product) given by teachers to students in allowing them to show **evidence of how much and how well** they have **mastered** the learning outcomes.
- ❖ The task is given using an **appropriate** and **aligned** assessment instrument and must be **integral** to the learning outcomes attainment, provide **explicit** instruction and information about what students are required to do, **inform** the learner about the amount of time appropriate to complete the task, and provide **clear** and **explicit scoring/assessment criteria** and benchmark **standards**.
- ❖ Results from this task can be used to **improve** students' learning, **measure** their performance, make **judgments** about achievement, and **assess** programmes' effectiveness.



---

# Examples of Assessment Tasks

---



---

# Examples of Assessment Tasks

---

- ❖ Creative Projects / products (art and design, architecture, engineering)
- ❖ Performances (music, theatre)
- ❖ Group Projects (e.g. organizing an event, conducting a mini research)
- ❖ Presentations
- ❖ Debates
- ❖ Tests / Exams
- ❖ Lab Experimentation
- ❖ Projects Presentations
- ❖ Presentations
- ❖ Posters
- ❖ Reflection Papers
- ❖ Portfolios
- ❖ Proposal of Business Plans
- ❖ Conducting Business Projects



---

# Evaluation

---



---

# Evaluation

---

- ❖ Evaluation is a process of **using the evidences** collected through **assessment** to make **value judgment** on **students' performance** and **programme's performance** relative to the **benchmark standards** specified by the **learning outcomes' performance criteria** and (programme's) **performance target**.



---

# Evaluation

---

- ❖ Evaluation is a process of **using** the **evidences** collected through **assessment** to make **value judgment** on **students' performance** and **programme's performance** relative to the **benchmark standards** specified by the **learning outcomes' performance criteria** and (programme's) **performance target**.
- ❖ For **example**, **assigning a score/grade** to an assessment task for a course and **deciding** on the **students' next course of action** or the **programme's course of action** is considered as **evaluating** the student or the programme.



---

# Quality broccoli

---



# Quality broccoli





---

# Constructive Alignment

---



---

# Constructive Alignment

---

- ❖ Constructive Alignment is an approach to **curriculum design** in which the **teaching and learning activities** are designed to maximize learning by requiring students to **engage and activate** the **verbs** specified in the **learning outcomes** and for them to activate the same **verb** in the **assessment tasks**.



---

# Constructive Alignment

---

- ❖ Constructive Alignment is an approach to **curriculum design** in which the **teaching and learning activities** are designed to maximize learning by requiring students to **engage and activate** the **verbs** specified in the **learning outcomes** and for them to activate the same **verb** in the **assessment tasks**.
- ❖ The term **construct** refers to students **constructing** and **structuring** their own **understanding** and personally make **meaning** to **what** is to be **learned**.



---

# Constructive Alignment

---

- ❖ Constructive Alignment is an approach to **curriculum design** in which the **teaching and learning activities** are designed to maximize learning by requiring students to **engage and activate** the **verbs** specified in the **learning outcomes** and for them to activate the same **verb** in the **assessment tasks**.
- ❖ The term **construct** refers to students **constructing** and **structuring** their own **understanding** and personally make **meaning** to **what** is to be **learned**.
- ❖ **Alignment** refers to a learning environment setup by the teacher that **allow** students to **meaningfully engage** with the **action verb** of the **learning outcomes** and engaging the same action verb again in the **assessment task** in order to **solicit** how well the outcomes are learned.







What can students  
do at the end of the  
course?

What learning activities  
will help students  
achieve these learning  
outcomes?

INTENDED LEARNING  
OUTCOMES

LEARNING  
ACTIVITIES

ASSESSMENT  
AND FEEDBACK

How do you know if a  
student has achieved  
these outcomes?







### **The Intended Learning Outcomes of the Curriculum**

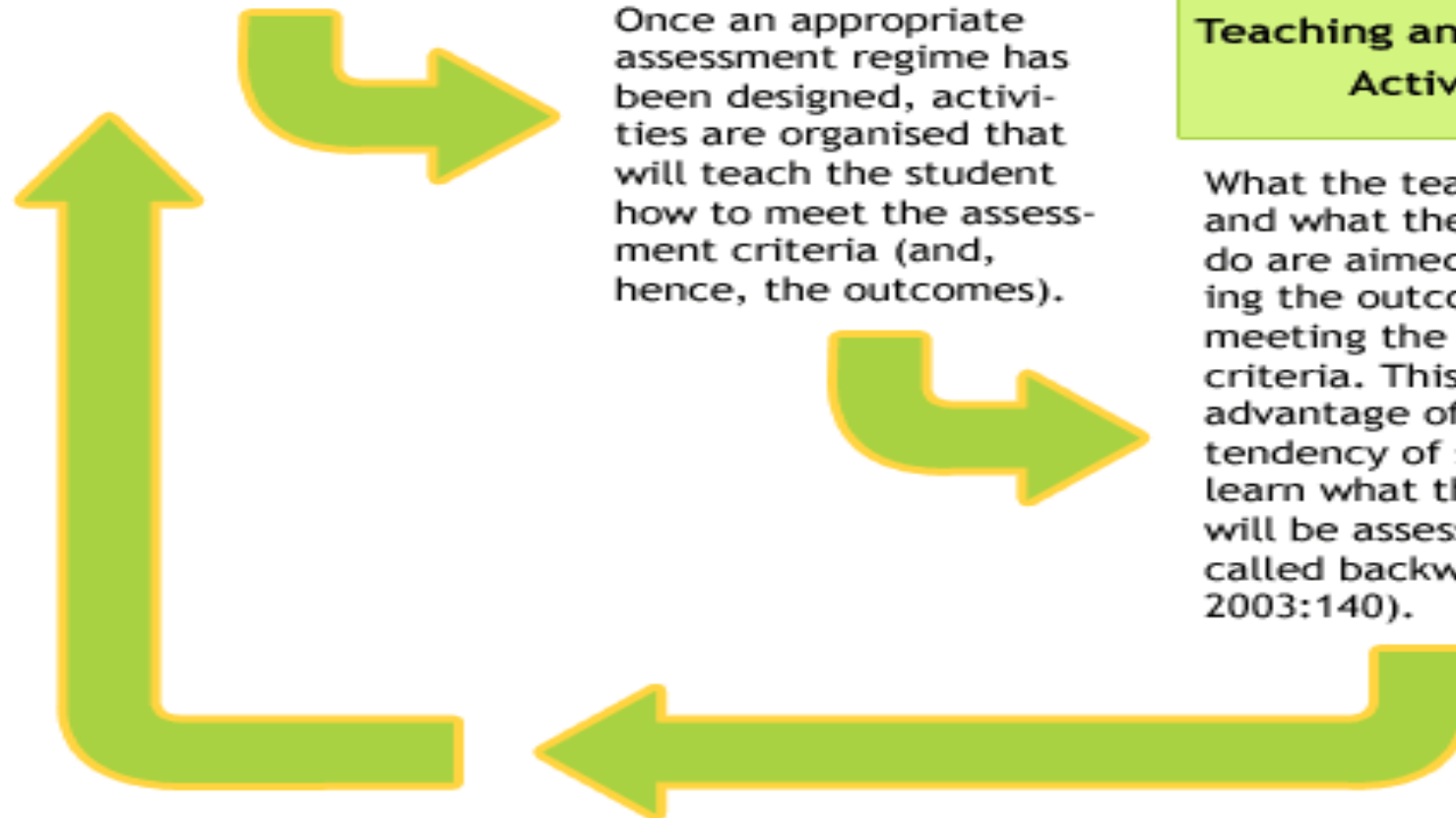
The outcomes are formulated first. From these the assessment criteria are developed.

### **The Assessment Regime**

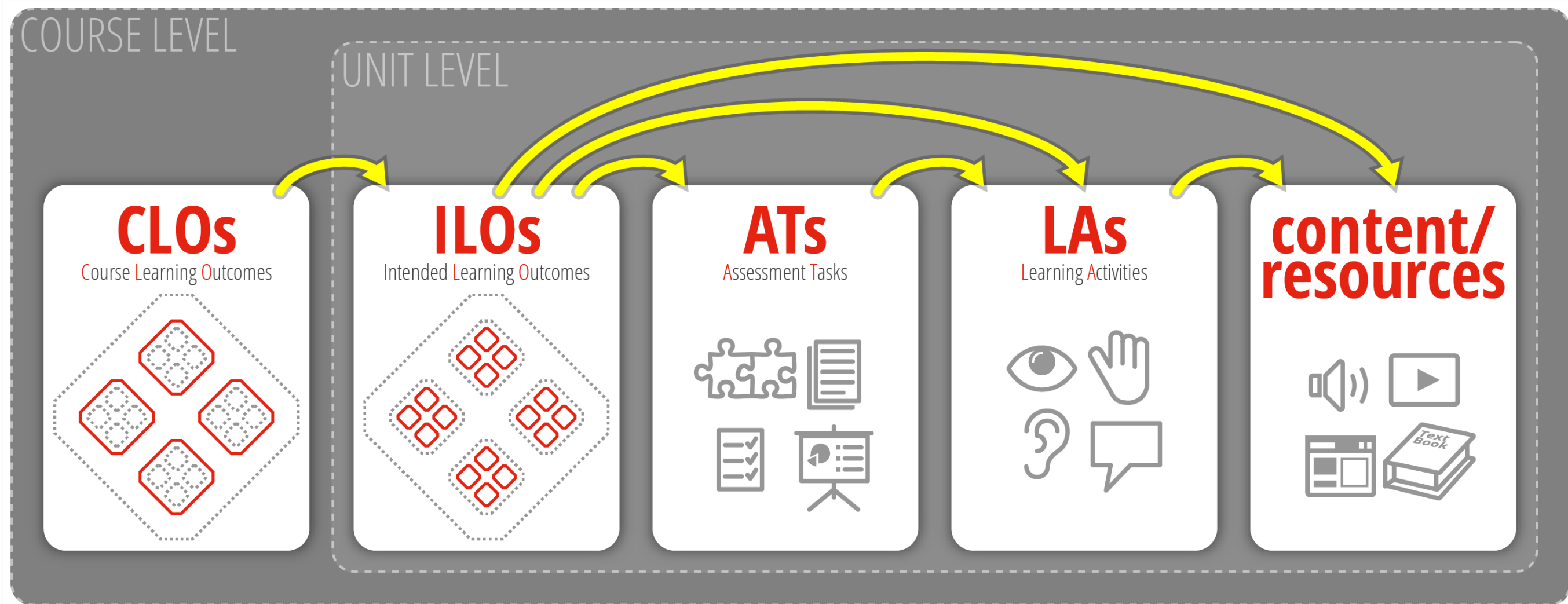
Once an appropriate assessment regime has been designed, activities are organised that will teach the student how to meet the assessment criteria (and, hence, the outcomes).

### **Teaching and Learning Activities**

What the teacher does and what the students do are aimed at achieving the outcomes by meeting the assessment criteria. This takes advantage of the known tendency of students to learn what they think will be assessed - and is called backwash (Biggs 2003:140).

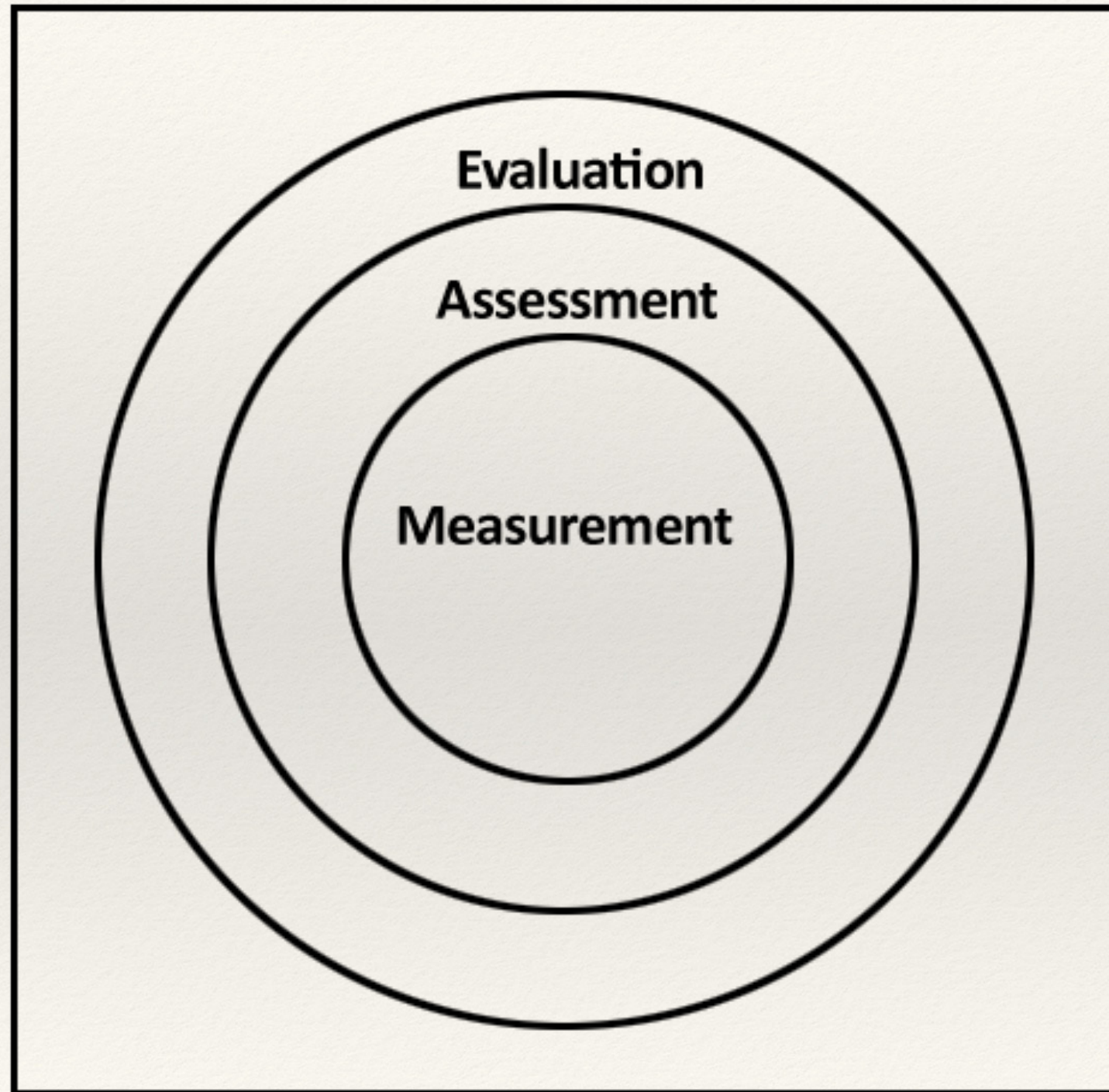






"Constructive alignment diagram" is licensed under the Creative Commons Attribution-Share Alike 4.0 International license.  
Creators: Beale Gurney (Beale.Gurney@utas.edu.au) & Nell Rundle (Nell.Rundle@utas.edu.au), University of Tasmania  
Source: <http://bit.ly/2sWmTrO>







---

# Simplicity

---

