Alignment of learning outcomes with assessment techniques: model ALOA

(Rita Falcao PhD Thesis)

Alfredo Soeiro

Track 2: Computing, Engineering & Technology

Theme 2: Organizational Change – Mitigating Limitations for Capacity Building

Title: Quality of Assessing Competences Online

IN4OBE, 12Aug22

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What should be assessed?

What do we hope students will learn?

How do we know that they have learned?

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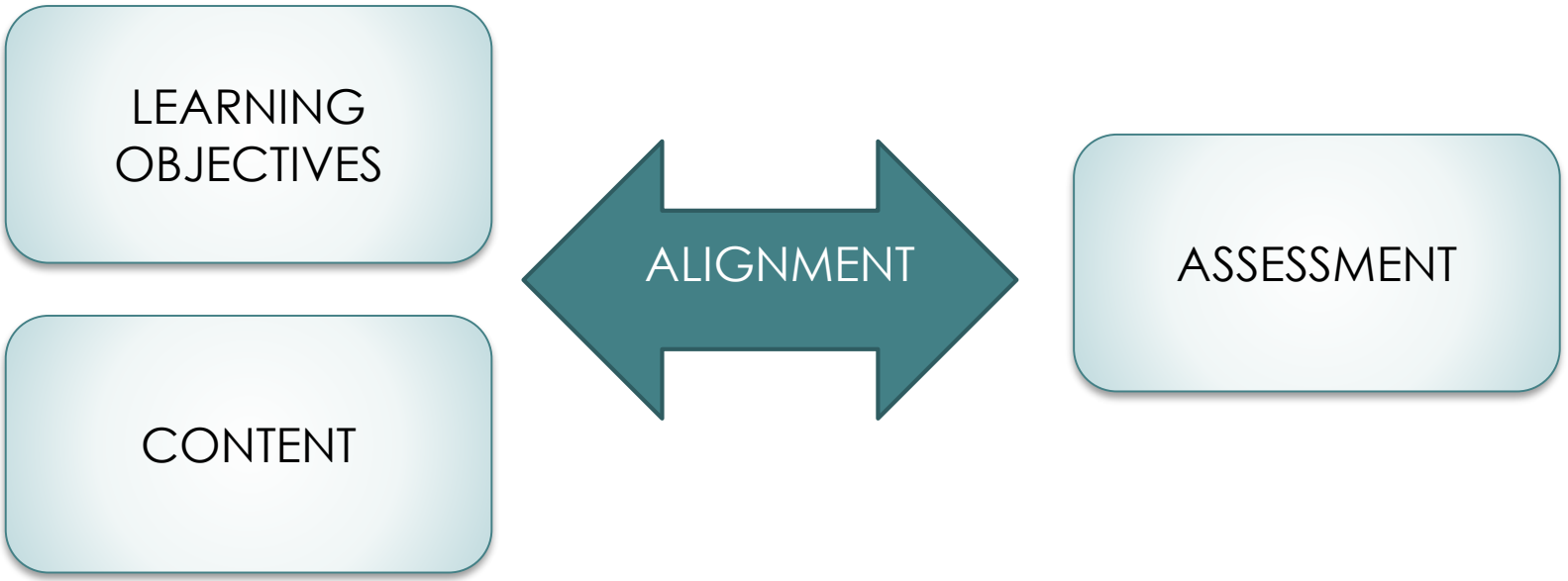
Before: What will we teach our students?



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Why change?...

- Qualification – **knowledge, skills and competences**
- Mobility and **recognition**
- **Quality** approach and accreditation

THE FOCUS IS ON THE STUDENTS!

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Learning Outcomes

Learning outcomes are statements of what a learner is expected to know, understand and/or be able to demonstrate after completion of learning.

(AHELO - Assessment of Higher Education Learning Outcomes by OECD)

A common language, building blocks, genetic code

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Assessment

Assessment: Any procedure used to estimate student learning for whatever purpose.

(Brown et al)

e-Assessment is the use of ICT and the Internet in particular for the assessment of learning, including design, delivery and/or recording of responses.
(JISC)

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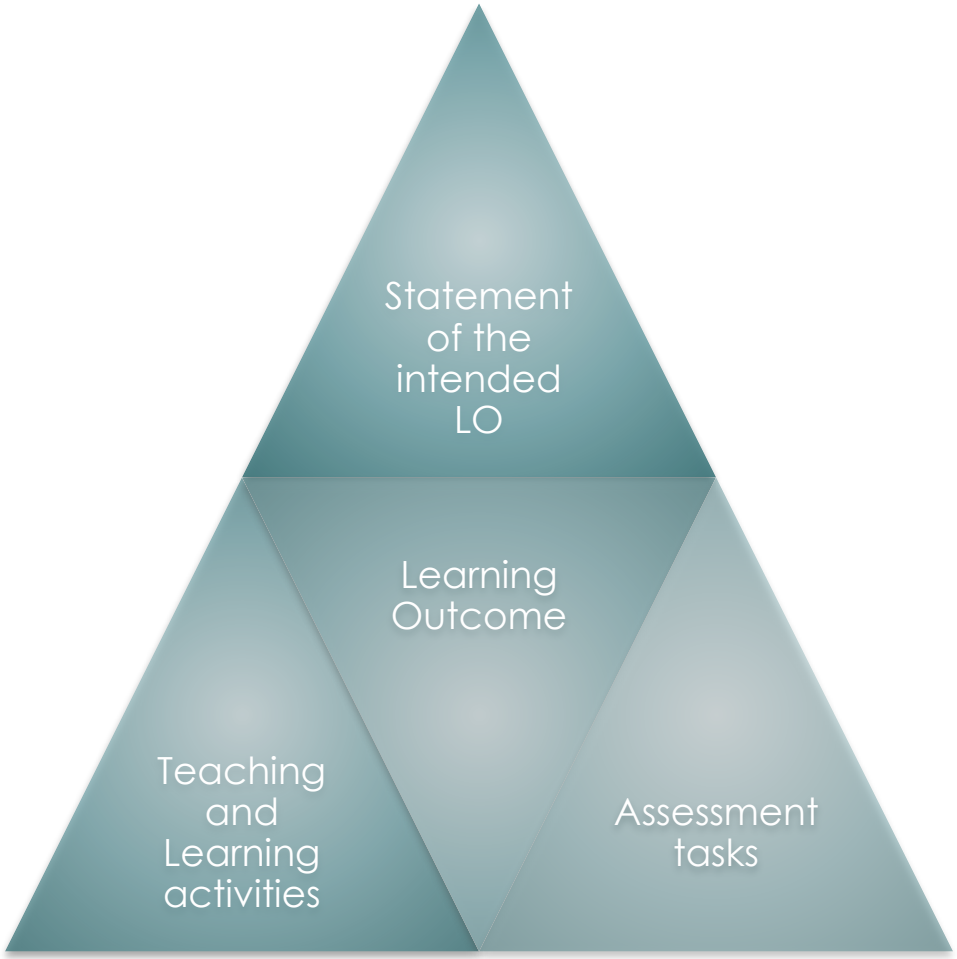
Alignment



Alignment: The level of correspondence between objectives, instruction and assessment.

(Anderson et al)

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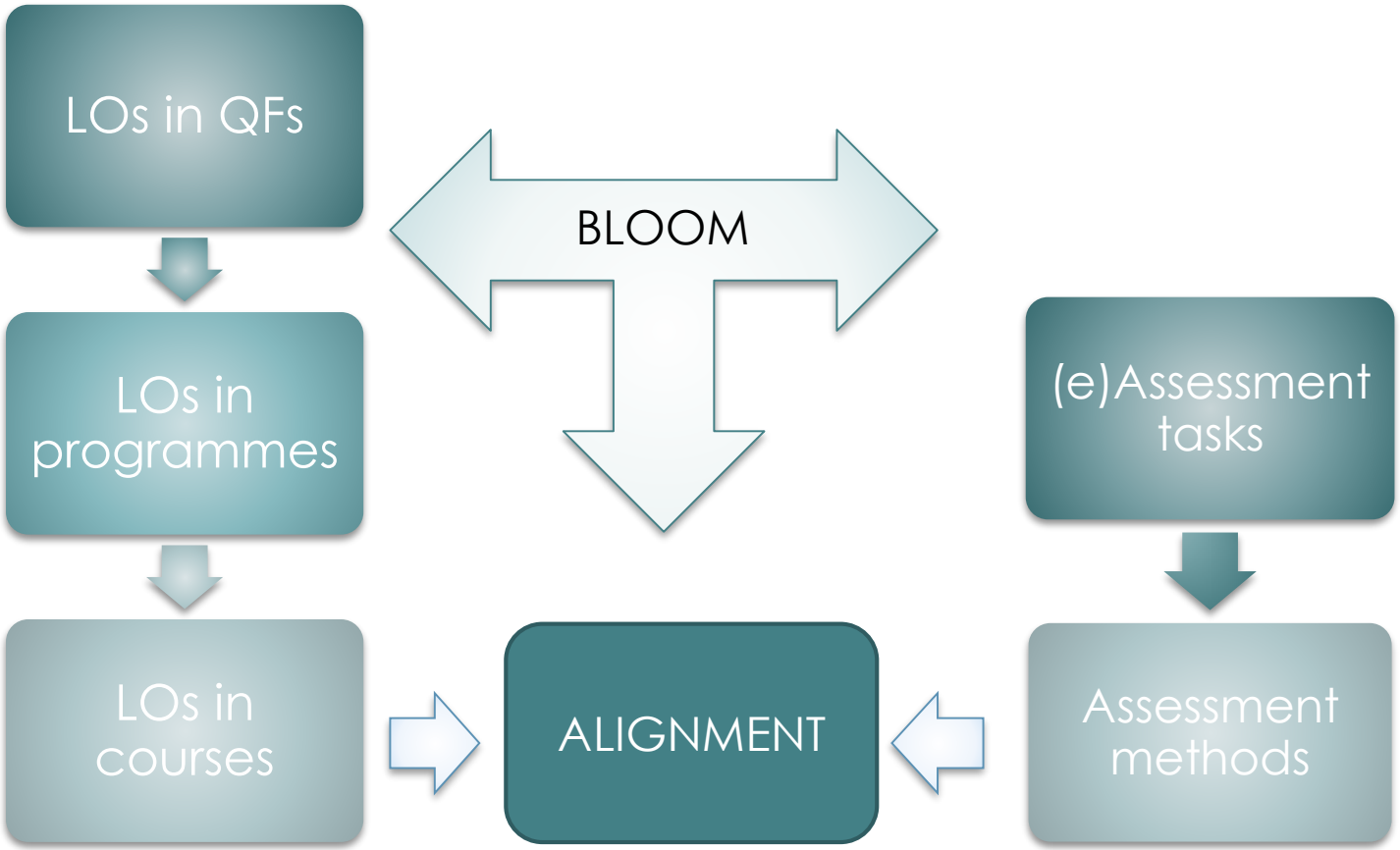
The ALOA conceptual model



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Analysis of LOs with BLOOM (revised)

The student should be able to describe the main components of a personal computer.

NOUN / KNOWLEDGE

VERB / COGNITIVE PROCESS

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Teacher with NEW course

- Write LOs statements
- Define content
- Define learning activities
- Define assessment
- Ensure alignment

ALOA

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Backwash effect (Biggs)

Perspective of the teacher

Perspective of the student

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MCQ

- Remember - Question includes who, what, why, when, where, which, choose, find, how, define, label, show, spell, list, match, name, relate, tell, recall, select
- Understand - Test item asks to compare, contrast, demonstrate, interpret, explain, extend, illustrate, infer, outline, relate, rephrase, translate, summarize, show, classify
- Apply - Test item asks to apply, build, choose, construct, develop, interview, make use of, organize, experiment with, plan, select, solve, utilize model, identify

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MCQ (cont.)

- Analyse - Test item asks to discriminate, infer, outline, separate
- Evaluate - Test item asks to award, choose, conclude, criticize, decide, defend, determine, dispute, evaluate, judge, justify, measure, compare, mark, rate, recommend, rule on, select, agree, interpret, explain, appraise, …
- Create - Test item asks to build, choose, combine, compose, construct, create, design, develop, estimate, formulate, imagine, invent, make up, originate, plan, predict, propose, solve, suppose, discuss, modify

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Essays

- Speculative
- Quote to discuss
- Assertion
- Write on
- Describe/explain
- Discuss
- Compare
- Evaluate
- Problem

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Problem solving

- Simple closed ended
- Complex closed ended
- Open ended

- Routines
- Diagnosis
- Strategy
- Interpretation
- Generation

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Practical work

- Demonstration - used to demonstrate theoretical principles, usually performed by the teacher or assistant. The student is given the aim of the practical, materials, method and answer and is only expected to recall previous knowledge and understand what is being shown.
- Exercise - These are very structured practical experiments in which the student is given the aim, materials, method and is expected to get to the results that are also well known to the teacher. Student should follow instructions and learn techniques, manipulation, observation and reporting skills.

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Practical work (cont.)

- Structured enquiry - This type of practical is less structured and more open. The student is given the aim of the activity and might be given part of the materials and methods to use. Students are expected to select materials and methods to get to results.
- Open enquiry - Given a problem and constraints student will have to formulate it, choose and design the experimental procedures, interpret the results and implications. The student will be most likely, making judgments as he proceeds.
- Project - With freedom of definition of the aims student can choose materials and methods. This is usually the longest and more open type of practical that enables students to develop research skills.

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SAQs (Short Answer Questions)

- Select crucial evidence
- Explain methods, procedures and relationships
- Present arguments
- Describe limitations of data
- Formulate valid conclusions
- Identify assumptions
- Formulate hypothesis
- Formulate action plans

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Reflective practice (Kolb learning cycle)

- Concrete experience - Is the 'doing' component of the cycle of reflection
- Reflective observation - Student will describe and critically reviews his/hers learning experience
- Abstract Conceptualisation - Learner will draw conclusions regarding what has happened during his learning experience
- Active Experimentation - The student will design a plan to incorporate the conclusions from his reflection into new learning experiences to improve them, starting a new learning cycle

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Thank you!

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