

**Outcome-based Teaching and Learning:
Enhancing learning
through constructive alignment**

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**‘Training the Trainers’ Programme:
Orientation**

We have designed the TTP to introduce you to all aspects needed to prepare you as trainers to implement Outcomes-based Teaching and Learning (OBTL) using Constructive Alignment (CA) in your institution.

Tuesday am. Introduction to the concepts of OBTL and CA. Discussion.

Your role as Trainer; Formative Assessment Portfolio (FAP).

Tuesday pm. Implementation of CA at institutional Level.

General Questions and Clarification.

‘Training the Trainers’ Programme: Orientation

Wednesday am and pm

Workshop on applying CA to designing teaching and assessment using a course each team has chosen for workshop activities.

Thursday am.

Workshop on Designing a Staff Development Programme.

‘Training the Trainers’ Programme: Summary

There are up to ten trainers from the one institution. They will form a team to develop a staff development programme with the aim of training teachers within their institution to redesign their courses. Each individual will keep a Reflective Journal to record significant activities and reflections on progress, and each team will construct Formative Assessment Portfolio that records the progress of implementation in the institution as a whole.

**Institution A: Trainer 1 (Reflective Journal)
Trainer 2 etc
Trainer 3
Trainer 4
.....
Trainer 10**

**Formative
Assessment
Portfolio**

Institution B: Trainer 1 ... etc...

Curriculum, Teaching and Assessment in Traditional Teaching

Curriculum

**A list of topics
to be covered**

Teaching

**Lecture, tutorial
practicum
as defaults**

Assessment

**Exam, MCQ
assignment
as defaults**

If students are to learn desired outcomes in a reasonably effective manner, then the teacher's fundamental task is to get students to engage in learning activities that are likely to result in their achieving those outcomes... It is helpful to remember that what the student does is actually more important in determining what is learned than what the teacher does.

(Shuell, 1986: 429)

This is in fact a design for teaching:

- 1. Define the *intended learning outcomes* that refer not only to content to be learned, but what is to be done with that content and to what standards.**
- 2. Create a learning environment that is likely to engage the student in *learning activities* that will bring about the intended outcomes.**
- 3. Use *assessment tasks* that directly address the outcome and that enable you to judge if and how well students' performances meet the criteria.**
- 4. Transform these judgments into summative grades.**

Curriculum, Teaching and Assessment in Outcomes-based teaching and learning

Curriculum* → *Intended learning outcomes

A list of topics to be covered BUT what are the students supposed to be able to do after learning those topics that they couldn't do before? What are the *intended learning outcomes* of teaching?

Teaching

What *learning activities* should the students engage in order for them to best achieve those outcomes?

Assessment

What assessment tasks (tests, assignments) would really tell us *how well* they have achieved the intended learning outcomes?

Constructive alignment was born at the University of Hong Kong

I was teaching psychology in the traditional way: I lectured on a list of topics gave the students assignments. Then it hit me: the students were there not so that they could tell me what psychology they had learned, but how they could use psychology in order to teach better. They should be telling me if and how it had, not me telling them how I thought it should. They placed their evidence and reflections in a portfolio.

The assessment task forced them to *reflect* and *apply* their knowledge.

Thus:

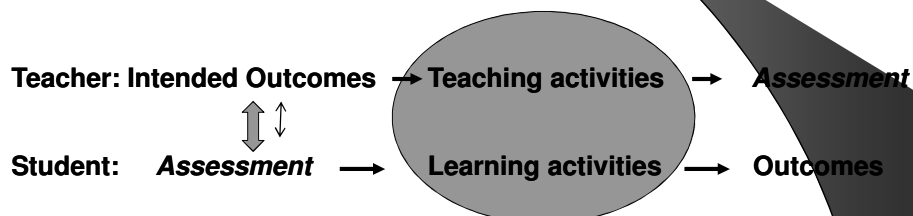
Intended learning outcome: to apply psychology to teaching

Learning activity: applying psychology to teaching

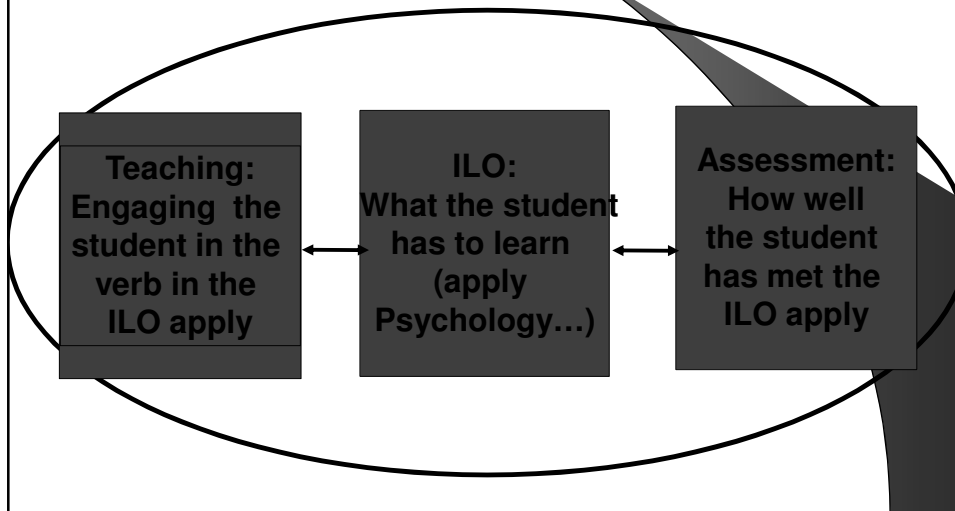
Assessment: How well they applied psychology to teaching.

Lecturing to them about applying psychology and giving them an exam on how well they understood what I had told them was not achieving the real aim of the course: to apply psychology to teach more effectively.

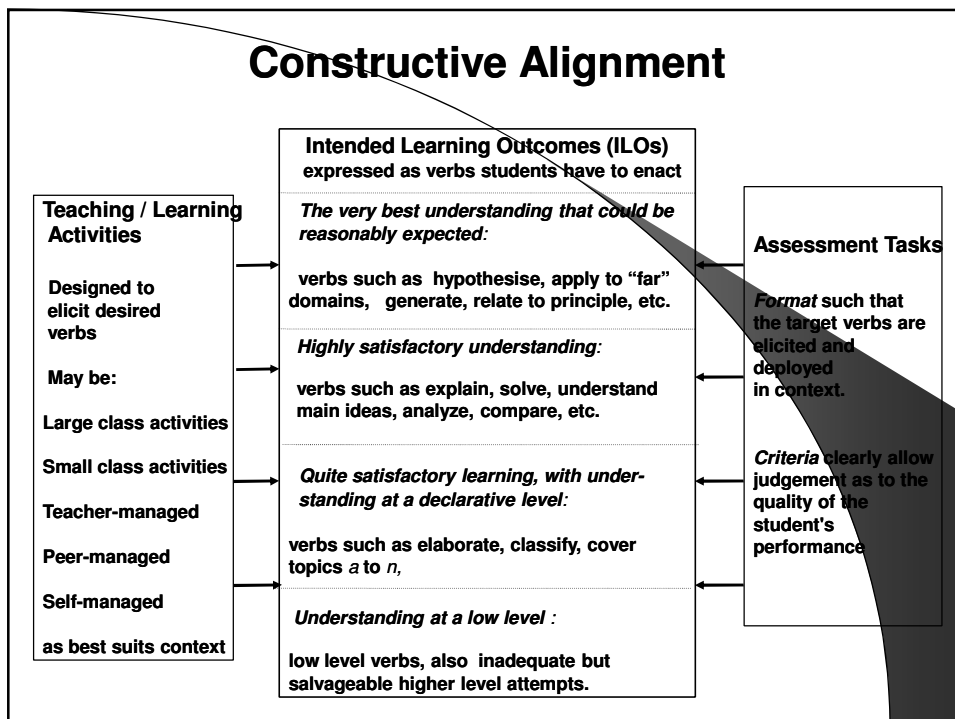
Teacher's and Student's Perspective on Assessment: Outcomes-based teaching and learning



Implementing Outcomes-based Teaching and Learning using Constructive Alignment



Constructive Alignment



Intended Learning Outcomes (ILOs)

Higher Education Institutes

What are the HEI Learning Outcomes an ideal graduate of the institution should achieve?

Programme level

What are the intended learning outcomes for students enrolled in the degree programme?

Course level

What are the intended learning outcomes for students taking a particular course at a particular level within the programme?

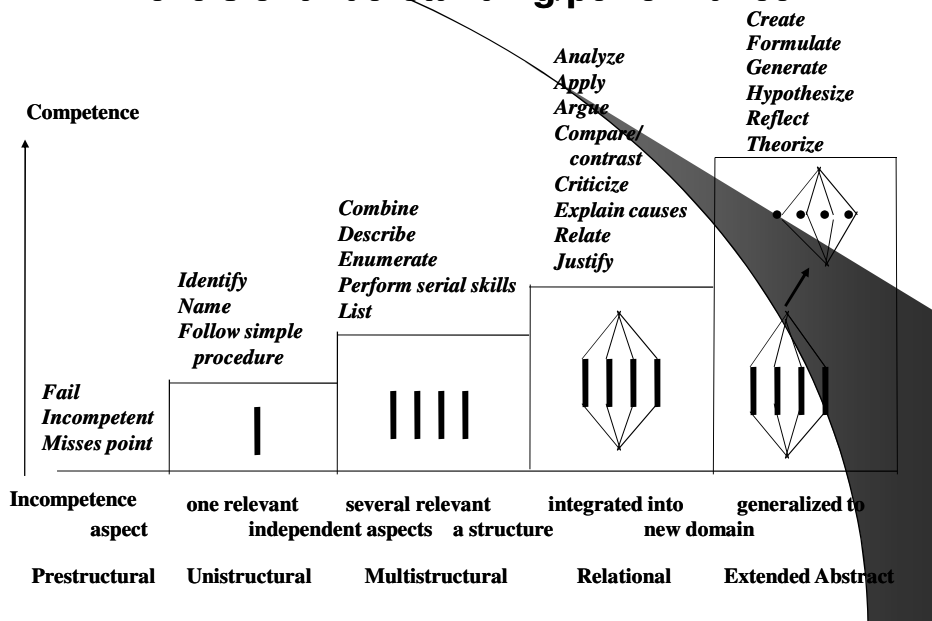
Course Intended Learning Outcomes (ILOs)

- **Statements of what students are expected to be able to do as a result of engaging in the learning process (studying a course).**
- **ILOs should reflect the level of the course.**
- **Expressed from the students' perspective (as different from *objectives*).**
- **Expressed in the form of action verbs leading to observable and assessable outcomes.**
- **Related to criteria for assessing student performance.**

The Verbs in the ILOs

- . Write ILOs by using appropriate *verbs*.
- . Teaching is aimed at *activating* those verbs.
- . Students should be unable to complete the assessment tasks unless they enact the same verbs that are in the ILOs (criterion-referenced).
- . Generic high level verbs include: *apply, conceptualise, reflect, create original insights, solve unseen problems, generate new alternatives, critically review*. Such verbs might typically be used to define an A grade in meeting the ILOs, depending on the subject. Low level verbs such as *describe, identify*, would be more frequent in defining C and D.

The SOLO Taxonomy with sample verbs indicating levels of understanding/performance



Distinguish the *kind* of knowledge you want

***Declarative* knowledge:**

- Knowing *about* things
- Knowledge we can declare to someone in writing or telling
e.g. 'Distinguish between topic-based and outcomes-based teaching'

***Functioning* knowledge:**

- Knowledge we *put to work* in solving a physics problem, analysing a case study, designing a building, making an argument
e.g. 'Write an ILO for a subject you are currently teaching'

Alignment with teaching and assessment is created by the *verbs* in the ILOs

- For example: "*Explain* the historical evolution of nursing science"
- Teaching is specifically aimed at *activating* the verb –for example the students do the explaining to each other, providing feedback from rubrics defining aspects of a good explanation (at end of this presentation). They don't just listen to the teacher doing the explaining.
- Students should be unable to complete the assessment tasks unless they enact the same verb that is in the ILO. For example, students could individually explain to the class how they see the historical evolution of nursing. The teacher, perhaps using peer assessment too, assess each explanation with the same rubrics.

Programme and Course ILOs

Alignment between the programme and course ILOs

Programme ILOs	Course ILOs		
	Course 1	Course 2	Course 3

1. *Are the ILOs aligned?*
2. *Do the course ILOs appropriately address the programme ILOs?*
3. *Are there any gaps?*

Procedures in designing Course ILOs

1. **Select the topics to be taught.**
2. **Decide what kind of knowledge is to be taught - *Declarative or functioning.***
3. **Decide the levels of understanding/performance the students are expected to achieve for the different topics.**
4. **Consider if all the ILOs are of equal importance.**
5. **Ensure a clear understanding and agreement of the ILOs within the teaching team and other relevant parties, e.g. External Reviewer.**
6. **Communicate the ILOs to students.**

Designing Teaching/Learning Activities (TLAs) to Align with Intended Learning Outcomes

Having designed Programme ILOs and the Course ILOs, we now need to design suitable Teaching/Learning Activities that will facilitate students achieving the ILOs. The best way to do this is to activate the verbs or learning activities embedded in the ILOs.

NB: there are many alternatives to lectures and tutorials, even in large classes.

Typical ILO

**Describe
Explain
Integrate
Apply
Solve problem
Design, create
Hypothesise
Reflect**

Possible TLAs

**reading/lecture followed by presentation
tutorial, written essay, peer assessment
project, assignment
project, case study, work-based learning
PBL, case study
project, creative writing
experiment, project
reflective diary**

The point is not how you are going to teach but how and what you want your students to learn.

NOTE! Many of these TLAs can be assessments tasks as well. Then you have excellent alignment.

Assessment Tasks (ATs)

- . provide students the opportunity to demonstrate whether or not they have achieved the ILOs and what level their performance is in those ILOs.**
- . should be appropriately designed or selected to address the ILOs that we want to assess.**
- . different assessment methods (tasks) address different ILOs. There should therefore be several kinds of task.**
- . provide the evidence allowing teachers to make a judgment about the level of a student's performance against the ILOs and to award a final grade.**

Designing Assessment Tasks (ATs)

Steps:

- 1. Select a practicable task that embodies the target ILO verb. (Try the TLA first).**
- 2. Develop grading criteria so that you can make a judgment on how well the ILO has been met by a student's performance on each assessment task.**
- 3. Decide how the graded performances can be combined to give a final grade.**

Common ILOs	Possible Assessment Tasks
Describe	essay question, exam, oral presentation (peer assessment)
Explain	assignment, essay question, exam, oral, letter-to-a-friend
Integrate	project, assignment
Analyse	case study, assignment
Apply	project, case study, experiment
Solve problem	case study, project, experiment
Design, create	project, experiment
Reflect	reflective diary, portfolio, self-assessment
Communicate	a range of oral, writing or listening tasks, e.g. presentation, debate, role play, reporting, assignment, precis, paraphrasing, answering questions etc.

**Assessing *quantitatively* by
 using marks
 or
qualitatively by
 using rubrics?**

Assessing by Marks

For:

- . Used to it.
- . Seems to be the logical way to assess in certain courses.
- . Logistically easy.

Against:

- . Defines quality in terms of accumulating small quantities.
- . Measurement error also accumulates, thus invalidating fine discriminations. E.g. there is no valid difference between 74 and 75, yet to the student it can make a BIG difference - an A or a B, or worse, a pass or fail.
- . Sends undesirable messages to students (backwash).

Assessing by grading with Rubrics

For:

- Student's performance is appropriately assessed against what they are intended to learn – *criterion-referenced*.
- Backwash is positive.
- The final grade tells students what they have achieved and what they need for a better grade.

Against:

- Requires a different mind set for some teachers.
- Initially more work in designing ILOs, suitable assessment tasks and rubrics, but once established is no more extra work than marking.

Qualitative assessment involves making *judgments against criteria* (rubrics), not by counting 'marks'

If ILOs are to reflect workplace or 'real world' standards it is not appropriate to state and assess them in terms of marks obtained.

Assessment tasks should likewise reflect the 'real world' ILOs.

Grading ILOs or Assessment Tasks?

Normally we grade the task (assignment, project, etc.) but logically we should grade the ILO directly.

Question becomes: how well did the student do in the ILO (explain ...; reflect ...; create ...), not on how well did the student do in the project, the exam, ...

The student's transcript might then present a profile in terms of learning outcomes, which would probably be of more use to an employer than a GPA, or profile of marks.

Some Rubrics for Direct Grading of ILOs

	Marginal Pass D 1.00 45 - 49	Satisfactory C- C C+ 1.70 2.00 2.30 50 - 64	Good B- B B+ 2.70 3.00 3.30 65 - 79	Excellent A- A 3.70 4.00 80 - 100
ILOs				
Explain	Able to identify and briefly write about limited points. Very little evidence of using these points to provide reasoning to why they are inter-related.	Able to identify a number relevant points with some details. Uses these points to provide a fair reasoning or causality. No evidence of a comprehensive overview of reasoning or causality.	Able to identify a full range of relevant points with details, supported by relevant literature. Points are organized to provide a comprehensive and cohesive reasoning or causality.	As in "Good" but provides views on possible alternative causes and/or results under changing conditions. Able to link current reasoning to situations in real-life professional contexts.
Reflect	Able to use available information to self-evaluate and identify limited aspects of own strengths and weaknesses in a general sense. No evidence of suggestions of ways to improve performance. No evidence of theory being used in self-evaluation.	Able to use available information to self-evaluate and identify more aspects of own strengths and weaknesses in a general sense. Little application of theory in self-evaluation and limited suggestions of ways to improve performance.	Able to use available information to self-evaluate and identify a range of own strengths and weaknesses. Self-evaluation is based on theory. Increasingly able to suggest ways to improve performance in a specific context.	As in "Good". Able to generalize self-evaluation to beyond existing context. Suggest ways of improving performance to real-life professional context.

Grading of Assessment Tasks in a Portfolio (addressing whatever ILOs apply)

	Marginal D 45 - 49	Adequate C- C C+ 50 - 64	Good B- B B+ 65 - 79	Excellent A- A 80 - 100
%	45 - 49	50 - 64	65 - 79	80 - 100
	The pieces of evidence are relevant and accurate, but are isolated, addressing one aspect of the course. Demonstration of understanding in a minimally acceptable way. Poor coverage, no originality, weak justification of portfolio items. Inappropriate self-evaluation.	The evidence is relevant, accurate and covers several aspects of the course. Little evidence of an overall view of the course. Demonstrates declarative understanding of a reasonable amount of content. Able to discuss content meaningfully. Good coverage but little application or integration. Fair justification of items. Attempted realistic self-evaluation	The evidence presents a good appreciation of the general thrust of the course. Good coverage with relevant and accurate support. A clear view of how various aspects of the course integrate to form a thrust or purpose. Good evidence of application of course content to practice. Portfolio items well justified. Realistic self-evaluation.	As in "B" but with higher degree of originality and evidence of internalization into personalized model of practice. Good evidence of reflection on own performance based on theory. Generalizes course content to new and unfamiliar real-life contexts.

For OBTL to work, impediments to successful implementation must be removed

- all references in policies and procedures to norm-referencing and grading on the curve. ILOs are meant to establish what students know and can perform and at what level of competence. Grading by comparing students is incompatible with constructive alignment.
- all references in policies and procedures to quantitative marking, in percentages or anything else.
- Dealt with in this afternoon's session.

Questions and Discussion for Next Session

1. Do you have question about CA that has not been answered in this session? Write it on a piece of paper and hand it to me as you go out for Morning Tea. I will sort them out and answer them. They can also be the basis for discussion in the next session.
2. Further details on the Role of the Trainer and the FAP (Formative Assessment Portfolio).

Bibliography and some websites on constructive alignment

Biggs, J. B. and Tang, C. (2007, 3rd edition) *Teaching for Quality Learning at University*, Maidenhead, UK: Open University Press/McGraw Hill, 2007.

General Descriptions of CA

- www.scu.edu.au/services/tl/sd_online/consalign.html
- www.engsc.ac.uk/er/theory/constructive_alignment.asp

Applied to a Web course in botany

- google.com.hk/search?q=%22Constructive+alignment%22&hl=en&lr=&start=10&sa=N
- *Economics*
- ideas.repec.org/a/che/ireepp/v2y2004i1p9-38.html
- *Advanced physiology*
- advan.physiology.org/cgi/content/full/27/3/146

MORE IF YOU GOOGLE “CONSTRUCTIVE ALIGNMENT”