ON CONSTRUCTIVE ALIGNMENT

Background notes to support a seminar given by

Professor John Biggs

jbiggs@bigpond.com

Context:
These notes are kindly provided to LTSN by Professor John Biggs. They were used to support a seminar on the topic held at the University of Edinburgh on July 3rd 2001. Prof. Biggs is a distinguished scholar in the field of education. His books include Students' Approaches to Learning and Studying, Evaluating the Quality of Learning, and most recently, Teaching for Quality Learning at University. The ideas and applied principles described in these notes are relevant to academics in the UK because they are the same principles that are being promoted through programme specification.

1. Aligning Objectives, Teaching Methods, and Assessment

> Learning takes place through the active behavior of the student: it is what *he* does that he learns, not what the teacher does.
>
> (Tyler,1949: 63).

Tyler said it over 50 years ago. 15 years ago, Shuell elaborated:

> 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)

We can construct a model of teaching out of this. **What the student does** becomes the point of departure, for improving teaching.

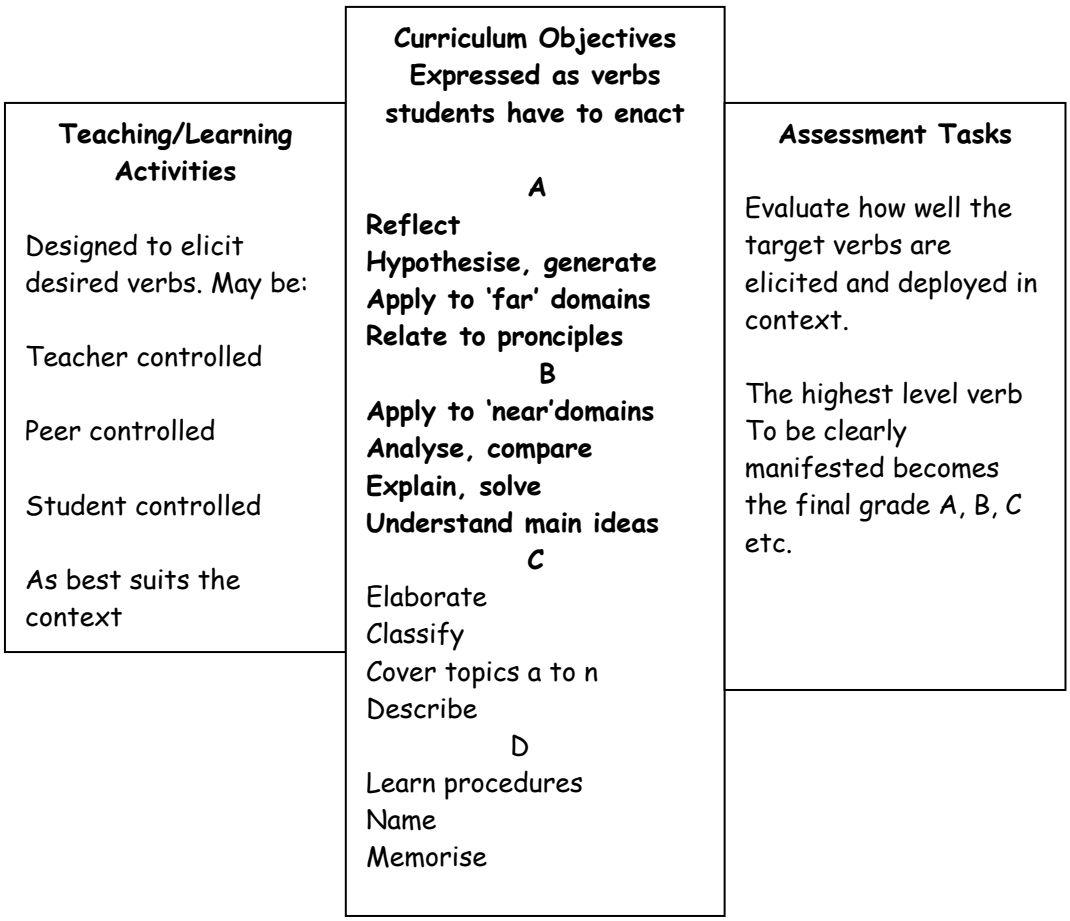
Key decisions:

1. what are "desired" outcomes,
2. what teaching methods require students to behave in ways that are likely to achieve those outcomes,
3. what assessment tasks will tell us if the actual outcomes match those that are intended or desired.

This is the essence of "constructive alignment" (Biggs, 1999).
First we get the objectives straight, what students have to *do.* Then we decide how to get them to do it. Assessment serves a double purpose: it checks the quality of learning, and for students, it *defines* what is to be learned.

Grades also modified by coverage and accuracy of factual details, elegance of reasoning, … whatever is appropriate to the content being taught.

Aligning curriculum objectives, teaching learning activities (TLAs), and assessment tasks



2. On What to Teach: Clarifying Objectives

The nature of understanding

Understanding can mean a lot of things; we need to be very clear about the level of understanding we want our students to achieve. To *really* understand something is to behave differently in contexts involving that content. To r*eally* understand is to see a slice of the world differently.

The essence of understanding is that it is performative
(Gardner, 1993)

Let us distinguish between

- *declarative knowledge:* knowledge you can declare, or talk about
- *functioning knowledge:* knowledge you can put to work.

Often we teach declarative understandings, when the teaching aims, particularly in professional programmes, refer to functioning knowledge.

In designing curriculum objectives, there is always a tension between coverage and depth of understanding, but

> The greatest enemy of understanding is coverage -- I can't repeat that often enough.
> (Gardner, 1993: 24)

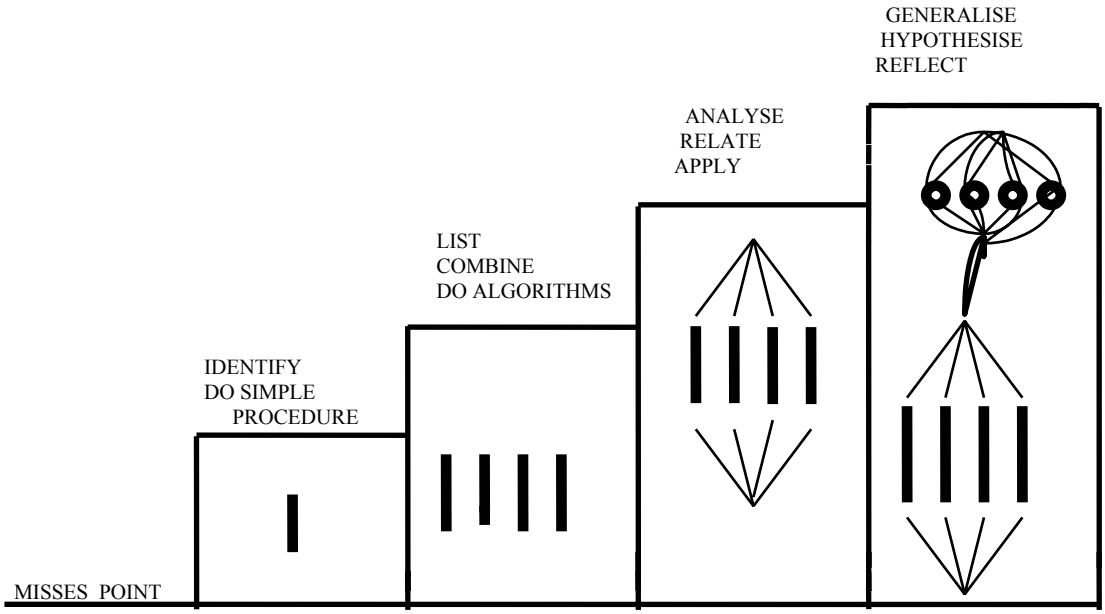
Coverage holds knowledge to the declarative level.

In designing curriculum objectives to specify the *activities* we want your students to perform. It helps to use verbs. These activities become the objectives. Then, because some activities show better levels of understanding than others, teaching objectives may be structured hierarchically:

In an aligned system of instruction, the appropriate verbs are:

1. nominated in the objectives,
2. likely to be elicited in the chosen teaching-learning activities,
3. embedded in the assessment tasks so that criterion-referenced judgments
   can be made about a given student's level of performance.

Four layers of verbs referring to "understanding"



(from the SOLO taxonomy, Biggs, 1999)

A grading system then needs to be defined in terms of a hierarchy of desired learning outcomes, from most acceptable to barely acceptable, usually expressed as **A** to **D**, then **F**.

3. On How to Teach: Choosing Teaching/Learning Activities

We want to select teaching/learning activities (or TLAs) that will encourage students to start using the right verbs if they are to handle properly the academic tasks we set:

TLAs may be classified according to who is in major control:

- *Teacher*-controlled activities include most formal teaching situations: lectures, tutorials, laboratories, field excursions, etc.

- *Peer*-controlled activities range from formal ones, initiated by the teacher, such as various kinds of groupwork or instructions to use learning partners, to informal and spontaneous collaboration by students outside the classroom.

- *Self*-controlled activities include anything that goes under the heading of independent learning and study: specific strategies for

extracting meaning from text such as summarising and note-taking, general study skills,

What activities are teaching methods most likely to elicit?

Each teaching/learning activity (TLA) ⟶ *a form of learning*

Teacher-controlled:

lecture, set texts	reception of selected content
tutorial	elaboration, clarification
laboratory	procedural knowledge,a pplication
excursion	experiential knowledge, interest
seminar	clarify, presentation skill

Peer-controlled:

syndicate groups	elaboration, confront differences
learning partners	resolve differences, application
spontaneous collaboration	breadth, self-insight

Self-controlled:

summarizing	main ideas,
note-taking	main ideas, facts, revision
comprehension monitor	confidence in learning
planning, SQ3R	independence in learning

4. On Assessing Student Learning

Assessment is almost certainly the most important single component in the system: get assessment wrong and you get everything wrong. We therefore need to be clear about why we assess, what we assess, how we assess, and who is involved in the assessing.

Some different assessment tasks and the kinds of learning assessed

assessment mode	***most likely kind of learning assessed***
Extended prose, essay-type:	
essay exam	rote, question spotting, speed structuring.
open book	as for exam, but less memory, coverage
assignment, take home	read widely, inter-relate, organise apply, copy
Objective test:	
multiple choice	recognition, strategy, comprehension, coverage
ordered outcome	hierarchies of understanding
Performance assessment:	
practicum	skills needed in real life
seminar, presentation	communication skills
posters	concentrating on relevance, application
interviewing	responding interactively
critical incidents	reflection, application, sense of relevance
project	application, research skills
reflective journal	reflection, application, sense of relevance
case study, problems	application, professional skills
portfolio	reflection, creativity, unintended outcomes
Rapid assessments (large class):	
concept maps	coverage, relationships
venn diagrams	relationships
three minute essay	level of understanding, sense of relevance,
gobbets	realizing the importance of significant detail
short answer	recall units of information, coverage
letter-to-a-friend	holistic understanding, application, reflection
	comprehension of main ideas

Assessment-related matters

The assessment model. *Analytic vs. holistic* assessment: marking vs. assessing

Marks do not however convey *what* is learned. A criterion-referenced qualitative approach demands holistic assessment, using the same framework as was used for formulating objectives.

Dealing with unintended but desirable outcomes.

Grading

Matching student outcomes with the objectives: necessarily a qualitative matter, which needs a different approach to:

Combining grades within or across units.

There are two ways to go:
1. Convert categories into numbers.
2. Work qualitatively all the way.

Other matters arising

5. On Quality Assurance and Quality Enhancement

The individual teacher improves through reflecting on current practice through the lenses of an operating theory: so should the institution.

Quality Assurance (QA):

Non-reflective, retrospective, quantitative. May even impair teaching quality.

Quality Enhancement (QE):

How to improve teaching and learning quality at the institutional level; focus for staff development on the institutional unit, not individual teachers. Prospective, qualitative.

Quality Feasibility (QF):

What in the institution impedes quality teaching**?**

References

Biggs, J.B. (1999). *What the student does: Teaching for quality learning at university.* Buckingham: Open University Press.

Biggs, J.B. (2001). The reflective institution: Assuring and enhancing the quality of teaching and learning. *Higher Education, 14,* 221-238.

Gardner, H.W. (1993). 'Educating for understanding'. *The American School Board Journal*, July, 20-24.

Shuell, T.J. (1986). Cognitive conceptions of learning. *Review of Educational Research, 56*, 411-436.

Tyler, R.W. (1949). *Basic principles of curriculum and instruction.* Chicago: University of Chicago Press.